



EUROPEAN COMMISSION
Innovation and Networks Executive Agency

Director



GRANT AGREEMENT

NUMBER 814910 — SPROUT

This **Agreement** ('the Agreement') is **between** the following parties:

on the one part,

the **Innovation and Networks Executive Agency (INEA)** ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

represented for the purposes of signature of this Agreement by Head of Horizon 2020 Department, Innovation and Networks Executive Agency, H2020 Department for all technical projects and grant agreements, Alan HAIGH,

and

on the other part,

1. 'the coordinator':

FUNDACION ZARAGOZA LOGISTICS CENTER (ZLC), established in AVENIDA RANILLAS 5 BLOQUE 5 PORTAL A, PLANTA BAJ, ZARAGOZA 50018, Spain, VAT number: ESG50985993, represented for the purposes of signing the Agreement by PLSIGN, Susana VAL

and the following other beneficiaries, if they sign their 'Accession Form' (see Annex 3 and Article 56):

2. **UNIVERSIDAD POLITECNICA DE MADRID (UPM)**, established in CALLE RAMIRO DE MAEZTU 7 EDIFICIO RECTORADO, MADRID 28040, Spain, VAT number: ESQ2818015F,

3. **ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS (CERTH)**, established in CHARILAOU THERMI ROAD 6 KM, THERMI THESSALONIKI 57001, Greece, VAT number: EL099785242,

4. **VRIJE UNIVERSITEIT BRUSSEL (VUB)**, established in PLEINLAAN 2, BRUSSEL 1050, Belgium, VAT number: BE0449012406,

5. **POLIS - PROMOTION OF OPERATIONAL LINKS WITH INTEGRATED SERVICES, ASSOCIATION INTERNATIONALE (POLIS)**, established in rue du Trône 98, BRUXELLES 1050, Belgium, VAT number: BE460400701,

6. **WUPPERTAL INSTITUT FUR KLIMA, UMWELT, ENERGIE GMBH (WI)**, established in DOPPERSBERG 19, WUPPERTAL 42103, Germany, VAT number: DE121091633,

7. **AYUNTAMIENTO DE VALENCIA (VALENCIA)**, established in PLAZA AYUNTAMIENTO 1, VALENCIA 46002, Spain,
8. **FUNDACION DE LA COMUNIDAD VALENCIANA PARA LA INVESTIGACION, PROMOCION Y ESTUDIOS COMERCIALES DE VALENCIAPORT (VPF)**, established in Avenida Muelle del Turia s/n, VALENCIA 46024, Spain, VAT number: ESG97360325,
9. **FERROCARRILS DE LA GENERALITAT VALENCIANA (FGV)**, established in PARTIDA DE XIRIVELLETA, S/N, VALENCIA 46014, Spain, VAT number: ESQ9650001B,
10. **NINGBO SUPPLY CHAIN INNOVATION INSTITUT CHINA (NSCIIC)**, established in 462 WENYUAN ROAD, NINGBO 315100, China (People's Republic of), VAT number: CN52330200MJ8949738F, as 'beneficiary not receiving EU funding' (see Article 9),
11. **NINGBO UNIVERSITY OF TECHNOLOGY (NBUT)**, established in FENGHUA ROAD 201, NINGBO 315211, China (People's Republic of), as 'beneficiary not receiving EU funding' (see Article 9),
12. **BKK BUDAPESTI KOZLEKEDESI KOZPONT ZARTKORUEN MUKODO RESZVENYTARSASAG (BKK)**, established in RUMBACH SEBESTYEN UTCA 19-21, BUDAPEST 1075, Hungary, VAT number: HU17781372,
13. **BUDAPEST KOZUT ZARTKORUEN MUKODO RESZVENYTARSASAG (BPKOZUT)**, established in BANK BAN U 8-12, BUDAPEST 1115, Hungary, VAT number: HU23501894,
14. **COMUNE DI PADOVA (CDPA)**, established in VIA DEL MUNICIPIO 1 PALAZZO MORONI, PADOVA 35122, Italy, VAT number: IT00644060287,
15. **VENICE INTERNATIONAL UNIVERSITY (VIU)**, established in ISOLA DI SAN SERVOLO, VENEZIA 30122, Italy, VAT number: IT02928970272,
16. **TEL AVIV YAFO MUNICIPALITY (TLV)**, established in IBN GVIROL STREET 69, TEL AVIV 64162, Israel, VAT number: IL500250006,
17. **TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY (TECHNION)**, established in SENATE BUILDING TECHNION CITY, HAIFA 32000, Israel, VAT number: IL557585585,
18. **INSTYTUT LOGISTYKI I MAGAZYNOWANIA (ILiM)**, established in UL ESTKOWSKIEGO 6, POZNAN 61-755, Poland, VAT number: PL7770020410,
19. **MIASTO KALISZ (KALISZ)**, established in GLOWNY RYNEK 20, KALISZ 62 800, Poland, VAT number: PL6180015933,
20. **FUNDACJA KALISKI INKUBATOR PRZEDSIE BIORCZOSCI (KALISZBIF)**, established in UL. CZESTOCHOWSKA 25, KALISZ 62 800, Poland, VAT number: PL6181003820,
21. **MUNICIPALITY OF IOANNINA (MoI)**, established in ANDREA PAPANDREOU SQUARE 5, IOANNINA 45221, Greece, VAT number: EL997908926,
22. **STAD MECHELEN (MECH)**, established in GROTE MARKT 21, MECHELEN 2800, Belgium, VAT number: BE0207499430,
23. **MUNICIPIUL ARAD (ARAD)**, established in BD REVOLUTIEI 75, ARAD 2900, Romania,

24. **GEMEENTE 'S-HERTOGENBOSCH (HTB)**, established in WOLVENHOEK 1, SHERTOGENBOSCH 5211 HH, Netherlands, VAT number: NL001709124B01,
25. **REGION ILE DE FRANCE (IDFrance)**, established in 33 rue Barbet de Jouy, Paris 75007, France,
26. **CAMARA MUNICIPAL DE ALMADA (CMA)**, established in LARGO LUIS DE CAMOES, ALMADA 2800-159, Portugal, VAT number: PT500051054,
27. **AGENCIA MUNICIPAL DE ENERGIA DE ALMADA (AGENEAL)**, established in BERNARDO FRANCISCO DA COSTA 44, ALMADA 2800-029, Portugal,
28. **WEST MIDLANDS COMBINED AUTHORITY (WMCA)**, established in 16 SUMMER LANE, BIRMINGHAM B193SD, United Kingdom,
29. **GOTEBORGS KOMMUN (GOT)**, established in POSTGATAN 4, GOTEBORG 411 13, Sweden, VAT number: SE212000135501,

Unless otherwise specified, references to ‘beneficiary’ or ‘beneficiaries’ include the coordinator.

The parties referred to above have agreed to enter into the Agreement under the terms and conditions below.

By signing the Agreement or the Accession Form, the beneficiaries accept the grant and agree to implement it under their own responsibility and in accordance with the Agreement, with all the obligations and conditions it sets out.

The Agreement is composed of:

Terms and Conditions

- | | |
|---------|---|
| Annex 1 | Description of the action |
| Annex 2 | Estimated budget for the action |
| | 2a Additional information on the estimated budget |
| Annex 3 | Accession Forms |
| Annex 4 | Model for the financial statements |
| Annex 5 | Model for the certificate on the financial statements |
| Annex 6 | Model for the certificate on the methodology |

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CHAPTER 1 GENERAL

ARTICLE 1 — SUBJECT OF THE AGREEMENT

This Agreement sets out the rights and obligations and the terms and conditions applicable to the grant awarded to the beneficiaries for implementing the action set out in Chapter 2.

CHAPTER 2 ACTION

ARTICLE 2 — ACTION TO BE IMPLEMENTED

The grant is awarded for the action entitled ‘**Sustainable Policy RespOnse to Urban mobility Transition**’ — ‘**SPROUT**’ (‘**action**’), as described in Annex 1.

ARTICLE 3 — DURATION AND STARTING DATE OF THE ACTION

The duration of the action will be **36 months** as of 1 September 2019 (‘**starting date of the action**’).

ARTICLE 4 — ESTIMATED BUDGET AND BUDGET TRANSFERS

4.1 Estimated budget

The ‘**estimated budget**’ for the action is set out in Annex 2.

It contains the estimated eligible costs and the forms of costs, broken down by beneficiary and budget category (see Articles 5, 6). It also shows the estimated costs of the beneficiaries not receiving EU funding (see Article 9) and international partners (see Article 14a).

4.2 Budget transfers

The estimated budget breakdown indicated in Annex 2 may be adjusted — without an amendment (see Article 55) — by transfers of amounts between beneficiaries, budget categories and/or forms of costs set out in Annex 2, if the action is implemented as described in Annex 1.

However, the beneficiaries may not add costs relating to subcontracts not provided for in Annex 1, unless such additional subcontracts are approved by an amendment or in accordance with Article 13.

CHAPTER 3 GRANT

ARTICLE 5 — GRANT AMOUNT, FORM OF GRANT, REIMBURSEMENT RATES AND FORMS OF COSTS

5.1 Maximum grant amount

The ‘**maximum grant amount**’ is **EUR 3 865 116.25** (three million eight hundred and sixty five thousand one hundred and sixteen EURO and twenty five eurocents).

5.2 Form of grant, reimbursement rates and forms of costs

The grant reimburses **100% of the action's eligible costs** (see Article 6) (**'reimbursement of eligible costs grant'**) (see Annex 2).

The estimated eligible costs of the action are EUR **3 865 116.25** (three million eight hundred and sixty five thousand one hundred and sixteen EURO and twenty five eurocents).

Eligible costs (see Article 6) must be declared under the following forms (**'forms of costs'**):

(a) for **direct personnel costs**:

- as actually incurred costs (**'actual costs'**) or
- on the basis of an amount per unit calculated by the beneficiary in accordance with its usual cost accounting practices (**'unit costs'**).

Personnel **costs for SME owners or beneficiaries that are natural persons** not receiving a salary (see Article 6.2, Points A.4 and A.5) must be declared on the basis of the amount per unit set out in Annex 2a (**unit costs**);

(b) for **direct costs for subcontracting**: as actually incurred costs (**actual costs**);

(c) for **direct costs of providing financial support to third parties**: not applicable;

(d) for **other direct costs**:

- for costs of internally invoiced goods and services: on the basis of an amount per unit calculated by the beneficiary in accordance with its usual cost accounting practices (**'unit costs'**);
- for all other costs: as actually incurred costs (**actual costs**);

(e) for **indirect costs**: on the basis of a flat-rate applied as set out in Article 6.2, Point E (**'flat-rate costs'**);

(f) **specific cost category(ies)**: not applicable.

5.3 Final grant amount — Calculation

The **'final grant amount'** depends on the actual extent to which the action is implemented in accordance with the Agreement's terms and conditions.

This amount is calculated by the Agency — when the payment of the balance is made (see Article 21.4) — in the following steps:

Step 1 — Application of the reimbursement rates to the eligible costs

Step 2 — Limit to the maximum grant amount

Step 3 — Reduction due to the no-profit rule

Step 4 — Reduction due to substantial errors, irregularities or fraud or serious breach of obligations

5.3.1 Step 1 — Application of the reimbursement rates to the eligible costs

The reimbursement rate(s) (see Article 5.2) are applied to the eligible costs (actual costs, unit costs and flat-rate costs; see Article 6) declared by the beneficiaries (see Article 20) and approved by the Agency (see Article 21).

5.3.2 Step 2 — Limit to the maximum grant amount

If the amount obtained following Step 1 is higher than the maximum grant amount set out in Article 5.1, it will be limited to the latter.

5.3.3 Step 3 — Reduction due to the no-profit rule

The grant must not produce a profit.

‘**Profit**’ means the surplus of the amount obtained following Steps 1 and 2 plus the action’s total receipts, over the action’s total eligible costs.

The ‘**action’s total eligible costs**’ are the consolidated total eligible costs approved by the Agency.

The ‘**action’s total receipts**’ are the consolidated total receipts generated during its duration (see Article 3).

The following are considered **receipts**:

- (a) income generated by the action; if the income is generated from selling equipment or other assets purchased under the Agreement, the receipt is up to the amount declared as eligible under the Agreement;
- (b) financial contributions given by third parties to the beneficiary specifically to be used for the action, and
- (c) in-kind contributions provided by third parties free of charge and specifically to be used for the action, if they have been declared as eligible costs.

The following are however not considered receipts:

- (a) income generated by exploiting the action’s results (see Article 28);
- (b) financial contributions by third parties, if they may be used to cover costs other than the eligible costs (see Article 6);
- (c) financial contributions by third parties with no obligation to repay any amount unused at the end of the period set out in Article 3.

If there is a profit, it will be deducted from the amount obtained following Steps 1 and 2.

5.3.4 Step 4 — Reduction due to substantial errors, irregularities or fraud or serious breach of obligations — Reduced grant amount — Calculation

If the grant is reduced (see Article 43), the Agency will calculate the reduced grant amount by deducting the amount of the reduction (calculated in proportion to the seriousness of the errors,

irregularities or fraud or breach of obligations, in accordance with Article 43.2) from the maximum grant amount set out in Article 5.1.

The final grant amount will be the lower of the following two:

- the amount obtained following Steps 1 to 3 or
- the reduced grant amount following Step 4.

5.4 Revised final grant amount — Calculation

If — after the payment of the balance (in particular, after checks, reviews, audits or investigations; see Article 22) — the Agency rejects costs (see Article 42) or reduces the grant (see Article 43), it will calculate the ‘**revised final grant amount**’ for the beneficiary concerned by the findings.

This amount is calculated by the Agency on the basis of the findings, as follows:

- in case of **rejection of costs**: by applying the reimbursement rate to the revised eligible costs approved by the Agency for the beneficiary concerned;
- in case of **reduction of the grant**: by calculating the concerned beneficiary’s share in the grant amount reduced in proportion to the seriousness of the errors, irregularities or fraud or breach of obligations (see Article 43.2).

In case of **rejection of costs and reduction of the grant**, the revised final grant amount for the beneficiary concerned will be the lower of the two amounts above.

ARTICLE 6 — ELIGIBLE AND INELIGIBLE COSTS

6.1 General conditions for costs to be eligible

‘**Eligible costs**’ are costs that meet the following criteria:

(a) for **actual costs**:

- (i) they must be actually incurred by the beneficiary;
- (ii) they must be incurred in the period set out in Article 3, with the exception of costs relating to the submission of the periodic report for the last reporting period and the final report (see Article 20);
- (iii) they must be indicated in the estimated budget set out in Annex 2;
- (iv) they must be incurred in connection with the action as described in Annex 1 and necessary for its implementation;
- (v) they must be identifiable and verifiable, in particular recorded in the beneficiary’s accounts in accordance with the accounting standards applicable in the country where the beneficiary is established and with the beneficiary’s usual cost accounting practices;
- (vi) they must comply with the applicable national law on taxes, labour and social security, and

- (vii) they must be reasonable, justified and must comply with the principle of sound financial management, in particular regarding economy and efficiency;

(b) for **unit costs**:

- (i) they must be calculated as follows:

{amounts per unit set out in Annex 2a or calculated by the beneficiary in accordance with its usual cost accounting practices (see Article 6.2, Point A and Article 6.2.D.5)

multiplied by

the number of actual units};

- (ii) the number of actual units must comply with the following conditions:

- the units must be actually used or produced in the period set out in Article 3;
- the units must be necessary for implementing the action or produced by it, and
- the number of units must be identifiable and verifiable, in particular supported by records and documentation (see Article 18);

(c) for **flat-rate costs**:

- (i) they must be calculated by applying the flat-rate set out in Annex 2, and

- (ii) the costs (actual costs or unit costs) to which the flat-rate is applied must comply with the conditions for eligibility set out in this Article.

6.2 Specific conditions for costs to be eligible

Costs are eligible if they comply with the general conditions (see above) and the specific conditions set out below for each of the following budget categories:

- A. direct personnel costs;
- B. direct costs of subcontracting;
- C. not applicable;
- D. other direct costs;
- E. indirect costs;
- F. not applicable.

‘Direct costs’ are costs that are directly linked to the action implementation and can therefore be attributed to it directly. They must not include any indirect costs (see Point E below).

‘Indirect costs’ are costs that are not directly linked to the action implementation and therefore cannot be attributed directly to it.

A. Direct personnel costs

Types of eligible personnel costs

A.1 Personnel costs are eligible, if they are related to personnel working for the beneficiary under an employment contract (or equivalent appointing act) and assigned to the action (‘**costs for employees (or equivalent)**’). They must be limited to salaries (including during parental leave), social security contributions, taxes and other costs included in the **remuneration**, if they arise from national law or the employment contract (or equivalent appointing act).

Beneficiaries that are non-profit legal entities¹ may also declare as personnel costs **additional remuneration** for personnel assigned to the action (including payments on the basis of supplementary contracts regardless of their nature), if:

- (a) it is part of the beneficiary’s usual remuneration practices and is paid in a consistent manner whenever the same kind of work or expertise is required;
- (b) the criteria used to calculate the supplementary payments are objective and generally applied by the beneficiary, regardless of the source of funding used.

‘Additional remuneration’ means any part of the remuneration which exceeds what the person would be paid for time worked in projects funded by national schemes.

Additional remuneration for personnel assigned to the action is eligible up to the following amount:

- (a) if the person works full time and exclusively on the action during the full year: up to EUR 8 000;
- (b) if the person works exclusively on the action but not full-time or not for the full year: up to the corresponding pro-rata amount of EUR 8 000, or
- (c) if the person does not work exclusively on the action: up to a pro-rata amount calculated as follows:
 - {EUR 8 000
 - divided by
 - the number of annual productive hours (see below)},
 - multiplied by
 - the number of hours that the person has worked on the action during the year}.

A.2 The **costs for natural persons working under a direct contract** with the beneficiary other than an employment contract are eligible personnel costs, if:

- (a) the person works under conditions similar to those of an employee (in particular regarding the way the work is organised, the tasks that are performed and the premises where they are performed);
- (b) the result of the work carried out belongs to the beneficiary (unless exceptionally agreed otherwise), and

¹ For the definition, see Article 2.1(14) of the Rules for Participation Regulation No 1290/2013: ‘**non-profit legal entity**’ means a legal entity which by its legal form is non-profit-making or which has a legal or statutory obligation not to distribute profits to its shareholders or individual members.

- (c) the costs are not significantly different from those for personnel performing similar tasks under an employment contract with the beneficiary.

A.3 The **costs of personnel seconded by a third party against payment** are eligible personnel costs, if the conditions in Article 11.1 are met.

A.4 **Costs of owners** of beneficiaries that are small and medium-sized enterprises (**‘SME owners’**) who are working on the action and who do not receive a salary are eligible personnel costs, if they correspond to the amount per unit set out in Annex 2a multiplied by the number of actual hours worked on the action.

A.5 **Costs of ‘beneficiaries that are natural persons’** not receiving a salary are eligible personnel costs, if they correspond to the amount per unit set out in Annex 2a multiplied by the number of actual hours worked on the action.

Calculation

Personnel costs must be calculated by the beneficiaries as follows:

{hourly rate
multiplied by
the number of actual hours worked on the action},
plus
for non-profit legal entities: additional remuneration to personnel assigned to the action under the conditions set out above (Point A.1)}.

The number of actual hours declared for a person must be identifiable and verifiable (see Article 18).

The total number of hours declared in EU or Euratom grants, for a person for a year, cannot be higher than the annual productive hours used for the calculations of the hourly rate. Therefore, the maximum number of hours that can be declared for the grant are:

{number of annual productive hours for the year (see below)
minus
total number of hours declared by the beneficiary, for that person in that year, for other EU or Euratom grants}.

The **‘hourly rate’** is one of the following:

- (a) for personnel costs declared as **actual costs** (i.e. budget categories A.1, A.2, A.3): the hourly rate is calculated *per full financial year*, as follows:

{actual annual personnel costs (excluding additional remuneration) for the person
divided by
number of annual productive hours}.

using the personnel costs and the number of productive hours for each full financial year covered by the reporting period concerned. If a financial year is not closed at the end of the

reporting period, the beneficiaries must use the hourly rate of the last closed financial year available.

For the ‘number of annual productive hours’, the beneficiaries may choose one of the following:

- (i) ‘fixed number of hours’: 1 720 hours for persons working full time (or corresponding pro-rata for persons not working full time);
- (ii) ‘individual annual productive hours’: the total number of hours worked by the person in the year for the beneficiary, calculated as follows:

{annual workable hours of the person (according to the employment contract, applicable collective labour agreement or national law)

plus

overtime worked

minus

absences (such as sick leave and special leave)}.

‘Annual workable hours’ means the period during which the personnel must be working, at the employer’s disposal and carrying out his/her activity or duties under the employment contract, applicable collective labour agreement or national working time legislation.

If the contract (or applicable collective labour agreement or national working time legislation) does not allow to determine the annual workable hours, this option cannot be used;

- (iii) ‘standard annual productive hours’: the ‘standard number of annual hours’ generally applied by the beneficiary for its personnel in accordance with its usual cost accounting practices. This number must be at least 90% of the ‘standard annual workable hours’.

If there is no applicable reference for the standard annual workable hours, this option cannot be used.

For all options, the actual time spent on **parental leave** by a person assigned to the action may be deducted from the number of annual productive hours.

As an alternative, beneficiaries may calculate the hourly rate *per month*, as follows:

{actual monthly personnel cost (excluding additional remuneration) for the person

divided by

{number of annual productive hours / 12}}}

using the personnel costs for each month and (one twelfth of) the annual productive hours calculated according to either option (i) or (iii) above, i.e.:

- fixed number of hours or
- standard annual productive hours.

Time spent on **parental leave** may not be deducted when calculating the hourly rate per month. However, beneficiaries may declare personnel costs incurred in periods of parental leave in proportion to the time the person worked on the action in that financial year.

If parts of a basic remuneration are generated over a period longer than a month, the beneficiaries may include only the share which is generated in the month (irrespective of the amount actually paid for that month).

Each beneficiary must use only one option (per full financial year or per month) for each full financial year;

(b) for personnel costs declared on the basis of **unit costs** (i.e. budget categories A.1, A.2, A.4, A.5): the hourly rate is one of the following:

- (i) for SME owners or beneficiaries that are natural persons: the hourly rate set out in Annex 2a (see Points A.4 and A.5 above), or
- (ii) for personnel costs declared on the basis of the beneficiary's usual cost accounting practices: the hourly rate calculated by the beneficiary in accordance with its usual cost accounting practices, if:
 - the cost accounting practices used are applied in a consistent manner, based on objective criteria, regardless of the source of funding;
 - the hourly rate is calculated using the actual personnel costs recorded in the beneficiary's accounts, excluding any ineligible cost or costs included in other budget categories.

The actual personnel costs may be adjusted by the beneficiary on the basis of budgeted or estimated elements. Those elements must be relevant for calculating the personnel costs, reasonable and correspond to objective and verifiable information;

and

- the hourly rate is calculated using the number of annual productive hours (see above).

B. Direct costs of subcontracting (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are eligible if the conditions in Article 13.1.1 are met.

C. Direct costs of providing financial support to third parties

Not applicable

D. Other direct costs

D.1 Travel costs and related subsistence allowances (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are eligible if they are in line with the beneficiary's usual practices on travel.

D.2 The depreciation costs of equipment, infrastructure or other assets (new or second-hand) as recorded in the beneficiary's accounts are eligible, if they were purchased in accordance with

Article 10.1.1 and written off in accordance with international accounting standards and the beneficiary's usual accounting practices.

The **costs of renting or leasing** equipment, infrastructure or other assets (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are also eligible, if they do not exceed the depreciation costs of similar equipment, infrastructure or assets and do not include any financing fees.

The costs of equipment, infrastructure or other assets **contributed in-kind against payment** are eligible, if they do not exceed the depreciation costs of similar equipment, infrastructure or assets, do not include any financing fees and if the conditions in Article 11.1 are met.

The only portion of the costs that will be taken into account is that which corresponds to the duration of the action and rate of actual use for the purposes of the action.

D.3 Costs of other goods and services (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are eligible, if they are:

- (a) purchased specifically for the action and in accordance with Article 10.1.1 or
- (b) contributed in kind against payment and in accordance with Article 11.1.

Such goods and services include, for instance, consumables and supplies, dissemination (including open access), protection of results, certificates on the financial statements (if they are required by the Agreement), certificates on the methodology, translations and publications.

D.4 Capitalised and operating costs of 'large research infrastructure'² directly used for the action are eligible, if:

- (a) the value of the large research infrastructure represents at least 75% of the total fixed assets (at historical value in its last closed balance sheet before the date of the signature of the Agreement or as determined on the basis of the rental and leasing costs of the research infrastructure³);
- (b) the beneficiary's methodology for declaring the costs for large research infrastructure has been positively assessed by the Commission ('**ex-ante assessment**');
- (c) the beneficiary declares as direct eligible costs only the portion which corresponds to the duration of the action and the rate of actual use for the purposes of the action, and
- (d) they comply with the conditions as further detailed in the annotations to the H2020 grant agreements.

² '**Large research infrastructure**' means research infrastructure of a total value of at least EUR 20 million, for a beneficiary, calculated as the sum of historical asset values of each individual research infrastructure of that beneficiary, as they appear in its last closed balance sheet before the date of the signature of the Agreement or as determined on the basis of the rental and leasing costs of the research infrastructure.

³ For the definition, see Article 2(6) of the H2020 Framework Programme Regulation No 1291/2013: '**Research infrastructure**' are facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields. Where relevant, they may be used beyond research, e.g. for education or public services. They include: major scientific equipment (or sets of instruments); knowledge-based resources such as collections, archives or scientific data; e-infrastructures such as data and computing systems and communication networks; and any other infrastructure of a unique nature essential to achieve excellence in research and innovation. Such infrastructures may be 'single-sited', 'virtual' or 'distributed'.

D.5 Costs of internally invoiced goods and services directly used for the action are eligible, if:

- (a) they are declared on the basis of a unit cost calculated in accordance with the beneficiary's usual cost accounting practices;
- (b) the cost accounting practices used are applied in a consistent manner, based on objective criteria, regardless of the source of funding;
- (c) the unit cost is calculated using the actual costs for the good or service recorded in the beneficiary's accounts, excluding any ineligible cost or costs included in other budget categories.

The actual costs may be adjusted by the beneficiary on the basis of budgeted or estimated elements. Those elements must be relevant for calculating the costs, reasonable and correspond to objective and verifiable information;

- (d) the unit cost excludes any costs of items which are not directly linked to the production of the invoiced goods or service.

'Internally invoiced goods and services' means goods or services which are provided by the beneficiary directly for the action and which the beneficiary values on the basis of its usual cost accounting practices.

E. Indirect costs

Indirect costs are eligible if they are declared on the basis of the flat-rate of 25% of the eligible direct costs (see Article 5.2 and Points A to D above), from which are excluded:

- (a) costs of subcontracting and
- (b) costs of in-kind contributions provided by third parties which are not used on the beneficiary's premises;
- (c) not applicable;
- (d) not applicable.

Beneficiaries receiving an operating grant⁴ financed by the EU or Euratom budget cannot declare indirect costs for the period covered by the operating grant, unless they can demonstrate that the operating grant does not cover any costs of the action.

F. Specific cost category(ies)

Not applicable

6.3 Conditions for costs of linked third parties to be eligible

⁴ For the definition, see Article 121(1)(b) of Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002 ('**Financial Regulation No 966/2012**') (OJ L 218, 26.10.2012, p.1): '**operating grant**' means direct financial contribution, by way of donation, from the budget in order to finance the functioning of a body which pursues an aim of general EU interest or has an objective forming part of and supporting an EU policy.

Not applicable

6.4 Conditions for in-kind contributions provided by third parties free of charge to be eligible

In-kind contributions provided free of charge are eligible direct costs (for the beneficiary), if the costs incurred by the third party fulfil — *mutatis mutandis* — the general and specific conditions for eligibility set out in this Article (Article 6.1 and 6.2) and Article 12.1.

6.5 Ineligible costs

‘**Ineligible costs**’ are:

- (a) costs that do not comply with the conditions set out above (Article 6.1 to 6.4), in particular:
 - (i) costs related to return on capital;
 - (ii) debt and debt service charges;
 - (iii) provisions for future losses or debts;
 - (iv) interest owed;
 - (v) doubtful debts;
 - (vi) currency exchange losses;
 - (vii) bank costs charged by the beneficiary’s bank for transfers from the Agency;
 - (viii) excessive or reckless expenditure;
 - (ix) deductible VAT;
 - (x) costs incurred during suspension of the implementation of the action (see Article 49);
- (b) costs declared under another EU or Euratom grant (including grants awarded by a Member State and financed by the EU or Euratom budget and grants awarded by bodies other than the Agency for the purpose of implementing the EU or Euratom budget); in particular, indirect costs if the beneficiary is already receiving an operating grant financed by the EU or Euratom budget in the same period, unless it can demonstrate that the operating grant does not cover any costs of the action.

6.6 Consequences of declaration of ineligible costs

Declared costs that are ineligible will be rejected (see Article 42).

This may also lead to any of the other measures described in Chapter 6.

CHAPTER 4 RIGHTS AND OBLIGATIONS OF THE PARTIES

SECTION 1 RIGHTS AND OBLIGATIONS RELATED TO IMPLEMENTING THE ACTION

ARTICLE 7 — GENERAL OBLIGATION TO PROPERLY IMPLEMENT THE ACTION

7.1 General obligation to properly implement the action

The beneficiaries must implement the action as described in Annex 1 and in compliance with the provisions of the Agreement and all legal obligations under applicable EU, international and national law.

7.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 8 — RESOURCES TO IMPLEMENT THE ACTION — THIRD PARTIES INVOLVED IN THE ACTION

The beneficiaries must have the appropriate resources to implement the action.

If it is necessary to implement the action, the beneficiaries may:

- purchase goods, works and services (see Article 10);
- use in-kind contributions provided by third parties against payment (see Article 11);
- use in-kind contributions provided by third parties free of charge (see Article 12);
- call upon subcontractors to implement action tasks described in Annex 1 (see Article 13);
- call upon linked third parties to implement action tasks described in Annex 1 (see Article 14);
- call upon international partners to implement action tasks described in Annex 1 (see Article 14a).

In these cases, the beneficiaries retain sole responsibility towards the Agency and the other beneficiaries for implementing the action.

ARTICLE 9 — IMPLEMENTATION OF ACTION TASKS BY BENEFICIARIES NOT RECEIVING EU FUNDING

9.1 Rules for the implementation of action tasks by beneficiaries not receiving EU funding

Beneficiaries that are not eligible for EU funding (**‘beneficiaries not receiving EU funding’**) must implement the action tasks attributed to them in Annex 1 in accordance with Article 7.1.

Their costs are estimated in Annex 2 but:

- will not be reimbursed and

- will not be taken into account for the calculation of the grant (see Articles 5.2, 5.3 and 5.4, and 21).

Chapter 3, Articles 10 to 15, 18.1.2, 20.3(b), 20.4(b), 20.6, 21, 23a, 26.4, 27.2, 28.1, 28.2, 30.3, 31.5, 40, 42, 43, 44, 47 and 48 do not apply to these beneficiaries.

They will not be subject to financial checks, reviews and audits under Article 22.

Beneficiaries not receiving EU funding may provide in-kind contributions to another beneficiary. In this case, they will be considered as a third party for the purpose of Articles 11 and 12.

9.2 Consequences of non-compliance

If a beneficiary not receiving EU funding breaches any of its obligations under this Article, its participation in the Agreement may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6 that are applicable to it.

ARTICLE 10 — PURCHASE OF GOODS, WORKS OR SERVICES

10.1 Rules for purchasing goods, works or services

10.1.1 If necessary to implement the action, the beneficiaries may purchase goods, works or services.

The beneficiaries must make such purchases ensuring the best value for money or, if appropriate, the lowest price. In doing so, they must avoid any conflict of interests (see Article 35).

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards their contractors.

10.1.2 Beneficiaries that are ‘contracting authorities’ within the meaning of Directive 2004/18/EC⁵ (or 2014/24/EU⁶) or ‘contracting entities’ within the meaning of Directive 2004/17/EC⁷ (or 2014/25/EU⁸) must comply with the applicable national law on public procurement.

10.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under Article 10.1.1, the costs related to the contract concerned will be ineligible (see Article 6) and will be rejected (see Article 42).

⁵ Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public work contracts, public supply contracts and public service contracts (OJ L 134, 30.04.2004, p. 114).

⁶ Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC. (OJ L 94, 28.03.2014, p. 65).

⁷ Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors (OJ L 134, 30.04.2004, p. 1)

⁸ Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC (OJ L 94, 28.03.2014, p. 243).

If a beneficiary breaches any of its obligations under Article 10.1.2, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 11 — USE OF IN-KIND CONTRIBUTIONS PROVIDED BY THIRD PARTIES AGAINST PAYMENT

11.1 Rules for the use of in-kind contributions against payment

If necessary to implement the action, the beneficiaries may use in-kind contributions provided by third parties against payment.

The beneficiaries may declare costs related to the payment of in-kind contributions as eligible (see Article 6.1 and 6.2), up to the third parties' costs for the seconded persons, contributed equipment, infrastructure or other assets or other contributed goods and services.

The third parties and their contributions must be set out in Annex 1. The Agency may however approve in-kind contributions not set out in Annex 1 without amendment (see Article 55), if:

- they are specifically justified in the periodic technical report and
- their use does not entail changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards the third parties.

11.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the costs related to the payment of the in-kind contribution will be ineligible (see Article 6) and will be rejected (see Article 42).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 12 — USE OF IN-KIND CONTRIBUTIONS PROVIDED BY THIRD PARTIES FREE OF CHARGE

12.1 Rules for the use of in-kind contributions free of charge

If necessary to implement the action, the beneficiaries may use in-kind contributions provided by third parties free of charge.

The beneficiaries may declare costs incurred by the third parties for the seconded persons, contributed equipment, infrastructure or other assets or other contributed goods and services as eligible in accordance with Article 6.4.

The third parties and their contributions must be set out in Annex 1. The Agency may however approve in-kind contributions not set out in Annex 1 without amendment (see Article 55), if:

- they are specifically justified in the periodic technical report and

- their use does not entail changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards the third parties.

12.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the costs incurred by the third parties related to the in-kind contribution will be ineligible (see Article 6) and will be rejected (see Article 42).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 13 — IMPLEMENTATION OF ACTION TASKS BY SUBCONTRACTORS

13.1 Rules for subcontracting action tasks

13.1.1 If necessary to implement the action, the beneficiaries may award subcontracts covering the implementation of certain action tasks described in Annex 1.

Subcontracting may cover only a limited part of the action.

The beneficiaries must award the subcontracts ensuring the best value for money or, if appropriate, the lowest price. In doing so, they must avoid any conflict of interests (see Article 35).

The tasks to be implemented and the estimated cost for each subcontract must be set out in Annex 1 and the total estimated costs of subcontracting per beneficiary must be set out in Annex 2. The Agency may however approve subcontracts not set out in Annex 1 and 2 without amendment (see Article 55), if:

- they are specifically justified in the periodic technical report and
- they do not entail changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards their subcontractors.

13.1.2 The beneficiaries must ensure that their obligations under Articles 35, 36, 38 and 46 also apply to the subcontractors.

Beneficiaries that are ‘contracting authorities’ within the meaning of Directive 2004/18/EC (or 2014/24/EU) or ‘contracting entities’ within the meaning of Directive 2004/17/EC (or 2014/25/EU) must comply with the applicable national law on public procurement.

13.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under Article 13.1.1, the costs related to the subcontract concerned will be ineligible (see Article 6) and will be rejected (see Article 42).

If a beneficiary breaches any of its obligations under Article 13.1.2, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 14 — IMPLEMENTATION OF ACTION TASKS BY LINKED THIRD PARTIES

Not applicable

ARTICLE 14a — IMPLEMENTATION OF ACTION TASKS BY INTERNATIONAL PARTNERS

14a.1 Rules for calling upon international partners to implement part of the action

The following **international partners**¹² may implement the action tasks attributed to them in Annex 1:

- City of Minneapolis (MPLS), international partner of ZLC
- Ningbo Municipal Bureau of Commerce (NBCC), international partner of NSCIIC

The costs of the international partners are estimated in Annex 2 but:

- will not be reimbursed and
- will not be taken into account for the calculation of the grant.

The beneficiaries must ensure that the Agency, the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards their international partners.

The beneficiaries must ensure that their obligations under Articles 18.1.1, 20.3(a), 20.4(a), 35, 36, 38 also apply to their international partners.

14a.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 15 — FINANCIAL SUPPORT TO THIRD PARTIES

15.1 Rules for providing financial support to third parties

Not applicable

15.2 Financial support in the form of prizes

Not applicable

¹² ‘International partner’ is any legal entity established in a non-associated third country which is not eligible for funding under Article 10 of the Rules for Participation Regulation No 1290/2013.

15.3 Consequences of non-compliance

Not applicable

ARTICLE 16 — PROVISION OF TRANS-NATIONAL OR VIRTUAL ACCESS TO RESEARCH INFRASTRUCTURE

16.1 Rules for providing trans-national access to research infrastructure

Not applicable

16.2 Rules for providing virtual access to research infrastructure

Not applicable

16.3 Consequences of non-compliance

Not applicable

SECTION 2 RIGHTS AND OBLIGATIONS RELATED TO THE GRANT ADMINISTRATION

ARTICLE 17 — GENERAL OBLIGATION TO INFORM

17.1 General obligation to provide information upon request

The beneficiaries must provide — during implementation of the action or afterwards and in accordance with Article 41.2 — any information requested in order to verify eligibility of the costs, proper implementation of the action and compliance with any other obligation under the Agreement.

17.2 Obligation to keep information up to date and to inform about events and circumstances likely to affect the Agreement

Each beneficiary must keep information stored in the Participant Portal Beneficiary Register (via the electronic exchange system; see Article 52) up to date, in particular, its name, address, legal representatives, legal form and organisation type.

Each beneficiary must immediately inform the coordinator — which must immediately inform the Agency and the other beneficiaries — of any of the following:

- (a) **events** which are likely to affect significantly or delay the implementation of the action or the EU's financial interests, in particular:
 - (i) changes in its legal, financial, technical, organisational or ownership situation
- (b) **circumstances** affecting:
 - (i) the decision to award the grant or
 - (ii) compliance with requirements under the Agreement.

17.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 18 — KEEPING RECORDS — SUPPORTING DOCUMENTATION

18.1 Obligation to keep records and other supporting documentation

The beneficiaries must — for a period of five years after the payment of the balance — keep records and other supporting documentation in order to prove the proper implementation of the action and the costs they declare as eligible.

They must make them available upon request (see Article 17) or in the context of checks, reviews, audits or investigations (see Article 22).

If there are on-going checks, reviews, audits, investigations, litigation or other pursuits of claims under the Agreement (including the extension of findings; see Article 22), the beneficiaries must keep the records and other supporting documentation until the end of these procedures.

The beneficiaries must keep the original documents. Digital and digitalised documents are considered originals if they are authorised by the applicable national law. The Agency may accept non-original documents if it considers that they offer a comparable level of assurance.

18.1.1 Records and other supporting documentation on the scientific and technical implementation

The beneficiaries must keep records and other supporting documentation on scientific and technical implementation of the action in line with the accepted standards in the respective field.

18.1.2 Records and other documentation to support the costs declared

The beneficiaries must keep the records and documentation supporting the costs declared, in particular the following:

- (a) for **actual costs**: adequate records and other supporting documentation to prove the costs declared, such as contracts, subcontracts, invoices and accounting records. In addition, the beneficiaries' usual cost accounting practices and internal control procedures must enable direct reconciliation between the amounts declared, the amounts recorded in their accounts and the amounts stated in the supporting documentation;
- (b) for **unit costs**: adequate records and other supporting documentation to prove the number of units declared. Beneficiaries do not need to identify the actual eligible costs covered or to keep or provide supporting documentation (such as accounting statements) to prove the amount per unit.

In addition, **for unit costs calculated in accordance with the beneficiary's usual cost accounting practices**, the beneficiaries must keep adequate records and documentation to prove that the cost accounting practices used comply with the conditions set out in Article 6.2.

The beneficiaries may submit to the Commission, for approval, a certificate (drawn up in accordance with Annex 6) stating that their usual cost accounting practices comply with these conditions (**‘certificate on the methodology’**). If the certificate is approved, costs declared in line with this methodology will not be challenged subsequently, unless the beneficiaries have concealed information for the purpose of the approval.

- (c) for **flat-rate costs**: adequate records and other supporting documentation to prove the eligibility of the costs to which the flat-rate is applied. The beneficiaries do not need to identify the costs covered or provide supporting documentation (such as accounting statements) to prove the amount declared at a flat-rate.

In addition, for **personnel costs** (declared as actual costs or on the basis of unit costs), the beneficiaries must keep **time records** for the number of hours declared. The time records must be in writing and approved by the persons working on the action and their supervisors, at least monthly. In the absence of reliable time records of the hours worked on the action, the Agency may accept alternative evidence supporting the number of hours declared, if it considers that it offers an adequate level of assurance.

As an exception, for **persons working exclusively on the action**, there is no need to keep time records, if the beneficiary signs a **declaration** confirming that the persons concerned have worked exclusively on the action.

18.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, costs insufficiently substantiated will be ineligible (see Article 6) and will be rejected (see Article 42), and the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 19 — SUBMISSION OF DELIVERABLES

19.1 Obligation to submit deliverables

The coordinator must submit the **‘deliverables’** identified in Annex 1, in accordance with the timing and conditions set out in it.

19.2 Consequences of non-compliance

If the coordinator breaches any of its obligations under this Article, the Agency may apply any of the measures described in Chapter 6.

ARTICLE 20 — REPORTING — PAYMENT REQUESTS

20.1 Obligation to submit reports

The coordinator must submit to the Agency (see Article 52) the technical and financial reports set out in this Article. These reports include requests for payment and must be drawn up using the forms and templates provided in the electronic exchange system (see Article 52).

20.2 Reporting periods

The action is divided into the following ‘**reporting periods**’:

- RP1: from month 1 to month 18
- RP2: from month 19 to month 36

20.3 Periodic reports — Requests for interim payments

The coordinator must submit a periodic report within 60 days following the end of each reporting period.

The **periodic report** must include the following:

(a) a ‘**periodic technical report**’ containing:

- (i) an **explanation of the work carried out** by the beneficiaries;
- (ii) an **overview of the progress** towards the objectives of the action, including milestones and deliverables identified in Annex 1.

This report must include explanations justifying the differences between work expected to be carried out in accordance with Annex 1 and that actually carried out.

The report must detail the exploitation and dissemination of the results and — if required in Annex 1 — an updated ‘**plan for the exploitation and dissemination of the results**’.

The report must indicate the communication activities;

- (iii) a **summary** for publication by the Agency;
- (iv) the answers to the ‘**questionnaire**’, covering issues related to the action implementation and the economic and societal impact, notably in the context of the Horizon 2020 key performance indicators and the Horizon 2020 monitoring requirements;

(b) a ‘**periodic financial report**’ containing:

- (i) an ‘**individual financial statement**’ (see Annex 4) from each beneficiary, for the reporting period concerned.

The individual financial statement must detail the eligible costs (actual costs, unit costs and flat-rate costs; see Article 6) for each budget category (see Annex 2).

The beneficiaries must declare all eligible costs, even if — for actual costs, unit costs and flat-rate costs — they exceed the amounts indicated in the estimated budget (see Annex 2). Amounts which are not declared in the individual financial statement will not be taken into account by the Agency.

If an individual financial statement is not submitted for a reporting period, it may be included in the periodic financial report for the next reporting period.

The individual financial statements of the last reporting period must also detail the **receipts of the action** (see Article 5.3.3).

Each beneficiary must **certify** that:

- the information provided is full, reliable and true;
 - the costs declared are eligible (see Article 6);
 - the costs can be substantiated by adequate records and supporting documentation (see Article 18) that will be produced upon request (see Article 17) or in the context of checks, reviews, audits and investigations (see Article 22), and
 - for the last reporting period: that all the receipts have been declared (see Article 5.3.3);
- (ii) an **explanation of the use of resources** and the information on subcontracting (see Article 13) and in-kind contributions provided by third parties (see Articles 11 and 12) from each beneficiary, for the reporting period concerned;
- (iii) not applicable;
- (iv) a ‘**periodic summary financial statement**’, created automatically by the electronic exchange system, consolidating the individual financial statements for the reporting period concerned and including — except for the last reporting period — the **request for interim payment**.

20.4 Final report — Request for payment of the balance

In addition to the periodic report for the last reporting period, the coordinator must submit the final report within 60 days following the end of the last reporting period.

The **final report** must include the following:

- (a) a ‘**final technical report**’ with a **summary** for publication containing:
- (i) an overview of the results and their exploitation and dissemination;
 - (ii) the conclusions on the action, and
 - (iii) the socio-economic impact of the action;
- (b) a ‘**final financial report**’ containing:
- (i) a ‘**final summary financial statement**’, created automatically by the electronic exchange system, consolidating the individual financial statements for all reporting periods and including the **request for payment of the balance** and
 - (ii) a ‘**certificate on the financial statements**’ (drawn up in accordance with Annex 5) for each beneficiary, if it requests a total contribution of EUR 325 000 or more, as reimbursement of actual costs and unit costs calculated on the basis of its usual cost accounting practices (see Article 5.2 and Article 6.2).

20.5 Information on cumulative expenditure incurred

Not applicable

20.6 Currency for financial statements and conversion into euro

Financial statements must be drafted in euro.

Beneficiaries with accounting established in a currency other than the euro must convert the costs recorded in their accounts into euro, at the average of the daily exchange rates published in the C series of the *Official Journal of the European Union*, calculated over the corresponding reporting period.

If no daily euro exchange rate is published in the *Official Journal of the European Union* for the currency in question, they must be converted at the average of the monthly accounting rates published on the Commission's website, calculated over the corresponding reporting period.

Beneficiaries with accounting established in euro must convert costs incurred in another currency into euro according to their usual accounting practices.

20.7 Language of reports

All reports (technical and financial reports, including financial statements) must be submitted in the language of the Agreement.

20.8 Consequences of non-compliance

If the reports submitted do not comply with this Article, the Agency may suspend the payment deadline (see Article 47) and apply any of the other measures described in Chapter 6.

If the coordinator breaches its obligation to submit the reports and if it fails to comply with this obligation within 30 days following a written reminder, the Agency may terminate the Agreement (see Article 50) or apply any of the other measures described in Chapter 6.

ARTICLE 21 — PAYMENTS AND PAYMENT ARRANGEMENTS

21.1 Payments to be made

The following payments will be made to the coordinator:

- one **pre-financing payment**;
- one or more **interim payments**, on the basis of the request(s) for interim payment (see Article 20), and
- one **payment of the balance**, on the basis of the request for payment of the balance (see Article 20).

21.2 Pre-financing payment — Amount — Amount retained for the Guarantee Fund

The aim of the pre-financing is to provide the beneficiaries with a float.

It remains the property of the EU until the payment of the balance.

The amount of the pre-financing payment will be EUR **3 092 093.00** (three million ninety two thousand ninety three EURO).

The Agency will — except if Article 48 applies — make the pre-financing payment to the coordinator within 30 days, either from the entry into force of the Agreement (see Article 58) or from 10 days before the starting date of the action (see Article 3), whichever is the latest.

An amount of EUR **193 255.81** (one hundred and ninety three thousand two hundred and fifty five EURO and eighty one eurocents), corresponding to 5% of the maximum grant amount (see Article 5.1), is retained by the Agency from the pre-financing payment and transferred into the ‘**Guarantee Fund**’.

21.3 Interim payments — Amount — Calculation

Interim payments reimburse the eligible costs incurred for the implementation of the action during the corresponding reporting periods.

The Agency will pay to the coordinator the amount due as interim payment within 90 days from receiving the periodic report (see Article 20.3), except if Articles 47 or 48 apply.

Payment is subject to the approval of the periodic report. Its approval does not imply recognition of the compliance, authenticity, completeness or correctness of its content.

The **amount due as interim payment** is calculated by the Agency in the following steps:

Step 1 — Application of the reimbursement rates

Step 2 — Limit to 90% of the maximum grant amount

21.3.1 Step 1 — Application of the reimbursement rates

The reimbursement rate(s) (see Article 5.2) are applied to the eligible costs (actual costs, unit costs and flat-rate costs; see Article 6) declared by the beneficiaries (see Article 20) and approved by the Agency (see above) for the concerned reporting period.

21.3.2 Step 2 — Limit to 90% of the maximum grant amount

The total amount of pre-financing and interim payments must not exceed 90% of the maximum grant amount set out in Article 5.1. The maximum amount for the interim payment will be calculated as follows:

$$\left. \begin{array}{l} \{90\% \text{ of the maximum grant amount (see Article 5.1)} \\ \text{minus} \\ \{\text{pre-financing and previous interim payments}\} \end{array} \right\}$$

21.4 Payment of the balance — Amount — Calculation — Release of the amount retained for the Guarantee Fund

The payment of the balance reimburses the remaining part of the eligible costs incurred by the beneficiaries for the implementation of the action.

If the total amount of earlier payments is greater than the final grant amount (see Article 5.3), the payment of the balance takes the form of a recovery (see Article 44).

If the total amount of earlier payments is lower than the final grant amount, the Agency will pay the balance within 90 days from receiving the final report (see Article 20.4), except if Articles 47 or 48 apply.

Payment is subject to the approval of the final report. Its approval does not imply recognition of the compliance, authenticity, completeness or correctness of its content.

The **amount due as the balance** is calculated by the Agency by deducting the total amount of pre-financing and interim payments (if any) already made, from the final grant amount determined in accordance with Article 5.3:

$$\begin{aligned} & \{\text{final grant amount (see Article 5.3)} \\ & \text{minus} \\ & \{\text{pre-financing and interim payments (if any) made}\}. \end{aligned}$$

At the payment of the balance, the amount retained for the Guarantee Fund (see above) will be released and:

- if the balance is positive: the amount released will be paid in full to the coordinator together with the amount due as the balance;
- if the balance is negative (payment of the balance taking the form of recovery): it will be deducted from the amount released (see Article 44.1.2). If the resulting amount:
 - is positive, it will be paid to the coordinator
 - is negative, it will be recovered.

The amount to be paid may however be offset — without the beneficiaries' consent — against any other amount owed by a beneficiary to the Agency, the Commission or another executive agency (under the EU or Euratom budget), up to the maximum EU contribution indicated, for that beneficiary, in the estimated budget (see Annex 2).

21.5 Notification of amounts due

When making payments, the Agency will formally notify to the coordinator the amount due, specifying whether it concerns an interim payment or the payment of the balance.

For the payment of the balance, the notification will also specify the final grant amount.

In the case of reduction of the grant or recovery of undue amounts, the notification will be preceded by the contradictory procedure set out in Articles 43 and 44.

21.6 Currency for payments

The Agency will make all payments in euro.

21.7 Payments to the coordinator — Distribution to the beneficiaries

Payments will be made to the coordinator.

Payments to the coordinator will discharge the Agency from its payment obligation.

The coordinator must distribute the payments between the beneficiaries without unjustified delay.

Pre-financing may however be distributed only:

- (a) if the minimum number of beneficiaries set out in the call for proposals has acceded to the Agreement (see Article 56) and
- (b) to beneficiaries that have acceded to the Agreement (see Article 56).

21.8 Bank account for payments

All payments will be made to the following bank account:

Name of bank: IBERCAJA BANCO, S.A.

Full name of the account holder: FUNDACION ZARAGOZA LOGISTICS CENTER

IBAN code: ES6220855200850333287410

21.9 Costs of payment transfers

The cost of the payment transfers is borne as follows:

- the Agency bears the cost of transfers charged by its bank;
- the beneficiary bears the cost of transfers charged by its bank;
- the party causing a repetition of a transfer bears all costs of the repeated transfer.

21.10 Date of payment

Payments by the Agency are considered to have been carried out on the date when they are debited to its account.

21.11 Consequences of non-compliance

21.11.1 If the Agency does not pay within the payment deadlines (see above), the beneficiaries are entitled to **late-payment interest** at the rate applied by the European Central Bank (ECB) for its main refinancing operations in euros ('reference rate'), plus three and a half points. The reference rate is the rate in force on the first day of the month in which the payment deadline expires, as published in the C series of the *Official Journal of the European Union*.

If the late-payment interest is lower than or equal to EUR 200, it will be paid to the coordinator only upon request submitted within two months of receiving the late payment.

Late-payment interest is not due if all beneficiaries are EU Member States (including regional and local government authorities or other public bodies acting on behalf of a Member State for the purpose of this Agreement).

Suspension of the payment deadline or payments (see Articles 47 and 48) will not be considered as late payment.

Late-payment interest covers the period running from the day following the due date for payment (see above), up to and including the date of payment.

Late-payment interest is not considered for the purposes of calculating the final grant amount.

21.11.2 If the coordinator breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or the participation of the coordinator may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 22 — CHECKS, REVIEWS, AUDITS AND INVESTIGATIONS — EXTENSION OF FINDINGS

22.1 Checks, reviews and audits by the Agency and the Commission

22.1.1 Right to carry out checks

The Agency or the Commission will — during the implementation of the action or afterwards — check the proper implementation of the action and compliance with the obligations under the Agreement, including assessing deliverables and reports.

For this purpose the Agency or the Commission may be assisted by external persons or bodies.

The Agency or the Commission may also request additional information in accordance with Article 17. The Agency or the Commission may request beneficiaries to provide such information to it directly.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

22.1.2 Right to carry out reviews

The Agency or the Commission may — during the implementation of the action or afterwards — carry out reviews on the proper implementation of the action (including assessment of deliverables and reports), compliance with the obligations under the Agreement and continued scientific or technological relevance of the action.

Reviews may be started up to two years after the payment of the balance. They will be formally notified to the coordinator or beneficiary concerned and will be considered to have started on the date of the formal notification.

If the review is carried out on a third party (see Articles 10 to 16), the beneficiary concerned must inform the third party.

The Agency or the Commission may carry out reviews directly (using its own staff) or indirectly (using external persons or bodies appointed to do so). It will inform the coordinator or beneficiary concerned of the identity of the external persons or bodies. They have the right to object to the appointment on grounds of commercial confidentiality.

The coordinator or beneficiary concerned must provide — within the deadline requested — any information and data in addition to deliverables and reports already submitted (including information

on the use of resources). The Agency or the Commission may request beneficiaries to provide such information to it directly.

The coordinator or beneficiary concerned may be requested to participate in meetings, including with external experts.

For **on-the-spot** reviews, the beneficiaries must allow access to their sites and premises, including to external persons or bodies, and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the review findings, a ‘**review report**’ will be drawn up.

The Agency or the Commission will formally notify the review report to the coordinator or beneficiary concerned, which has 30 days to formally notify observations (‘**contradictory review procedure**’).

Reviews (including review reports) are in the language of the Agreement.

22.1.3 Right to carry out audits

The Agency or the Commission may — during the implementation of the action or afterwards — carry out audits on the proper implementation of the action and compliance with the obligations under the Agreement.

Audits may be started up to two years after the payment of the balance. They will be formally notified to the coordinator or beneficiary concerned and will be considered to have started on the date of the formal notification.

If the audit is carried out on a third party (see Articles 10 to 16), the beneficiary concerned must inform the third party.

The Agency or the Commission may carry out audits directly (using its own staff) or indirectly (using external persons or bodies appointed to do so). It will inform the coordinator or beneficiary concerned of the identity of the external persons or bodies. They have the right to object to the appointment on grounds of commercial confidentiality.

The coordinator or beneficiary concerned must provide — within the deadline requested — any information (including complete accounts, individual salary statements or other personal data) to verify compliance with the Agreement. The Agency or the Commission may request beneficiaries to provide such information to it directly.

For **on-the-spot** audits, the beneficiaries must allow access to their sites and premises, including to external persons or bodies, and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the audit findings, a ‘**draft audit report**’ will be drawn up.

The Agency or the Commission will formally notify the draft audit report to the coordinator or beneficiary concerned, which has 30 days to formally notify observations (‘**contradictory audit procedure**’). This period may be extended by the Agency or the Commission in justified cases.

The ‘**final audit report**’ will take into account observations by the coordinator or beneficiary concerned. The report will be formally notified to it.

Audits (including audit reports) are in the language of the Agreement.

The Agency or the Commission may also access the beneficiaries’ statutory records for the periodical assessment of unit costs or flat-rate amounts.

22.2 Investigations by the European Anti-Fraud Office (OLAF)

Under Regulations No 883/2013¹⁶ and No 2185/96¹⁷ (and in accordance with their provisions and procedures), the European Anti-Fraud Office (OLAF) may — at any moment during implementation of the action or afterwards — carry out investigations, including on-the-spot checks and inspections, to establish whether there has been fraud, corruption or any other illegal activity affecting the financial interests of the EU.

22.3 Checks and audits by the European Court of Auditors (ECA)

Under Article 287 of the Treaty on the Functioning of the European Union (TFEU) and Article 161 of the Financial Regulation No 966/2012¹⁸, the European Court of Auditors (ECA) may — at any moment during implementation of the action or afterwards — carry out audits.

The ECA has the right of access for the purpose of checks and audits.

22.4 Checks, reviews, audits and investigations for international organisations

Not applicable

22.5 Consequences of findings in checks, reviews, audits and investigations — Extension of findings

22.5.1 Findings in this grant

Findings in checks, reviews, audits or investigations carried out in the context of this grant may lead to the rejection of ineligible costs (see Article 42), reduction of the grant (see Article 43), recovery of undue amounts (see Article 44) or to any of the other measures described in Chapter 6.

Rejection of costs or reduction of the grant after the payment of the balance will lead to a revised final grant amount (see Article 5.4).

Findings in checks, reviews, audits or investigations may lead to a request for amendment for the modification of Annex 1 (see Article 55).

¹⁶ Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council of 11 September 2013 concerning investigations conducted by the European Anti-Fraud Office (OLAF) and repealing Regulation (EC) No 1073/1999 of the European Parliament and of the Council and Council Regulation (Euratom) No 1074/1999 (OJ L 248, 18.09.2013, p. 1).

¹⁷ Council Regulation (Euratom, EC) No 2185/1996 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities (OJ L 292, 15.11.1996, p. 2).

¹⁸ Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002 (OJ L 298, 26.10.2012, p. 1).

Checks, reviews, audits or investigations that find systemic or recurrent errors, irregularities, fraud or breach of obligations may also lead to consequences in other EU or Euratom grants awarded under similar conditions (**‘extension of findings from this grant to other grants’**).

Moreover, findings arising from an OLAF investigation may lead to criminal prosecution under national law.

22.5.2 Findings in other grants

The Agency or the Commission may extend findings from other grants to this grant (**‘extension of findings from other grants to this grant’**), if:

- (a) the beneficiary concerned is found, in other EU or Euratom grants awarded under similar conditions, to have committed systemic or recurrent errors, irregularities, fraud or breach of obligations that have a material impact on this grant and
- (b) those findings are formally notified to the beneficiary concerned — together with the list of grants affected by the findings — no later than two years after the payment of the balance of this grant.

The extension of findings may lead to the rejection of costs (see Article 42), reduction of the grant (see Article 43), recovery of undue amounts (see Article 44), suspension of payments (see Article 48), suspension of the action implementation (see Article 49) or termination (see Article 50).

22.5.3 Procedure

The Agency or the Commission will formally notify the beneficiary concerned the systemic or recurrent errors and its intention to extend these audit findings, together with the list of grants affected.

22.5.3.1 If the findings concern **eligibility of costs**: the formal notification will include:

- (a) an invitation to submit observations on the list of grants affected by the findings;
- (b) the request to submit **revised financial statements** for all grants affected;
- (c) the **correction rate for extrapolation** established by the Agency or the Commission on the basis of the systemic or recurrent errors, to calculate the amounts to be rejected if the beneficiary concerned:
 - (i) considers that the submission of revised financial statements is not possible or practicable or
 - (ii) does not submit revised financial statements.

The beneficiary concerned has 90 days from receiving notification to submit observations, revised financial statements or to propose a duly substantiated **alternative correction method**. This period may be extended by the Agency or the Commission in justified cases.

The Agency or the Commission may then start a rejection procedure in accordance with Article 42, on the basis of:

- the revised financial statements, if approved;

- the proposed alternative correction method, if accepted

or

- the initially notified correction rate for extrapolation, if it does not receive any observations or revised financial statements, does not accept the observations or the proposed alternative correction method or does not approve the revised financial statements.

22.5.3.2 If the findings concern **substantial errors, irregularities or fraud or serious breach of obligations**: the formal notification will include:

- (a) an invitation to submit observations on the list of grants affected by the findings and
- (b) the flat-rate the Agency or the Commission intends to apply according to the principle of proportionality.

The beneficiary concerned has 90 days from receiving notification to submit observations or to propose a duly substantiated alternative flat-rate.

The Agency or the Commission may then start a reduction procedure in accordance with Article 43, on the basis of:

- the proposed alternative flat-rate, if accepted

or

- the initially notified flat-rate, if it does not receive any observations or does not accept the observations or the proposed alternative flat-rate.

22.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, any insufficiently substantiated costs will be ineligible (see Article 6) and will be rejected (see Article 42).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 23 — EVALUATION OF THE IMPACT OF THE ACTION

23.1 Right to evaluate the impact of the action

The Agency or the Commission may carry out interim and final evaluations of the impact of the action measured against the objective of the EU programme.

Evaluations may be started during implementation of the action and up to five years after the payment of the balance. The evaluation is considered to start on the date of the formal notification to the coordinator or beneficiaries.

The Agency or the Commission may make these evaluations directly (using its own staff) or indirectly (using external bodies or persons it has authorised to do so).

The coordinator or beneficiaries must provide any information relevant to evaluate the impact of the action, including information in electronic format.

23.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the Agency may apply the measures described in Chapter 6.

SECTION 3 RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND AND RESULTS

SUBSECTION 1 GENERAL

ARTICLE 23a — MANAGEMENT OF INTELLECTUAL PROPERTY

23a.1 Obligation to take measures to implement the Commission Recommendation on the management of intellectual property in knowledge transfer activities

Beneficiaries that are universities or other public research organisations must take measures to implement the principles set out in Points 1 and 2 of the Code of Practice annexed to the Commission Recommendation on the management of intellectual property in knowledge transfer activities¹⁹.

This does not change the obligations set out in Subsections 2 and 3 of this Section.

The beneficiaries must ensure that researchers and third parties involved in the action are aware of them.

23a.2 Consequences of non-compliance

If a beneficiary breaches its obligations under this Article, the Agency may apply any of the measures described in Chapter 6.

SUBSECTION 2 RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND

ARTICLE 24 — AGREEMENT ON BACKGROUND

24.1 Agreement on background

The beneficiaries must identify and agree (in writing) on the background for the action (**‘agreement on background’**).

‘Background’ means any data, know-how or information — whatever its form or nature (tangible or intangible), including any rights such as intellectual property rights — that:

- (a) is held by the beneficiaries before they acceded to the Agreement, and
- (b) is needed to implement the action or exploit the results.

24.2 Consequences of non-compliance

¹⁹ Commission Recommendation C(2008) 1329 of 10.4.2008 on the management of intellectual property in knowledge transfer activities and the Code of Practice for universities and other public research institutions attached to this recommendation.

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 25 — ACCESS RIGHTS TO BACKGROUND

25.1 Exercise of access rights — Waiving of access rights — No sub-licensing

To exercise access rights, this must first be requested in writing (**‘request for access’**).

‘Access rights’ means rights to use results or background under the terms and conditions laid down in this Agreement.

Waivers of access rights are not valid unless in writing.

Unless agreed otherwise, access rights do not include the right to sub-license.

25.2 Access rights for other beneficiaries, for implementing their own tasks under the action

The beneficiaries must give each other access — on a royalty-free basis — to background needed to implement their own tasks under the action, unless the beneficiary that holds the background has — before acceding to the Agreement —:

- (a) informed the other beneficiaries that access to its background is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel), or
- (b) agreed with the other beneficiaries that access would not be on a royalty-free basis.

25.3 Access rights for other beneficiaries, for exploiting their own results

The beneficiaries must give each other access — under fair and reasonable conditions — to background needed for exploiting their own results, unless the beneficiary that holds the background has — before acceding to the Agreement — informed the other beneficiaries that access to its background is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel).

‘Fair and reasonable conditions’ means appropriate conditions, including possible financial terms or royalty-free conditions, taking into account the specific circumstances of the request for access, for example the actual or potential value of the results or background to which access is requested and/or the scope, duration or other characteristics of the exploitation envisaged.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

25.4 Access rights for affiliated entities

Unless otherwise agreed in the consortium agreement, access to background must also be given — under fair and reasonable conditions (see above; Article 25.3) and unless it is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel) —

to affiliated entities²⁰ established in an EU Member State or ‘**associated country**’²¹, if this is needed to exploit the results generated by the beneficiaries to which they are affiliated.

Unless agreed otherwise (see above; Article 25.1), the affiliated entity concerned must make the request directly to the beneficiary that holds the background.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

25.5 Access rights for third parties

Not applicable

25.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

SUBSECTION 3 RIGHTS AND OBLIGATIONS RELATED TO RESULTS

ARTICLE 26 — OWNERSHIP OF RESULTS

26.1 Ownership by the beneficiary that generates the results

Results are owned by the beneficiary that generates them.

‘**Results**’ means any (tangible or intangible) output of the action such as data, knowledge or information — whatever its form or nature, whether it can be protected or not — that is generated in the action, as well as any rights attached to it, including intellectual property rights.

26.2 Joint ownership by several beneficiaries

²⁰ For the definition see Article 2.1(2) Rules for Participation Regulation No 1290/2013: ‘**affiliated entity**’ means any legal entity that is:

- under the direct or indirect control of a participant, or
- under the same direct or indirect control as the participant, or
- directly or indirectly controlling a participant.

‘Control’ may take any of the following forms:

- (a) the direct or indirect holding of more than 50% of the nominal value of the issued share capital in the legal entity concerned, or of a majority of the voting rights of the shareholders or associates of that entity;
- (b) the direct or indirect holding, in fact or in law, of decision-making powers in the legal entity concerned.

However the following relationships between legal entities shall not in themselves be deemed to constitute controlling relationships:

- (a) the same public investment corporation, institutional investor or venture-capital company has a direct or indirect holding of more than 50% of the nominal value of the issued share capital or a majority of voting rights of the shareholders or associates;
- (b) the legal entities concerned are owned or supervised by the same public body.

²¹ For the definition, see Article 2.1(3) of the Rules for Participation Regulation No 1290/2013: ‘**associated country**’ means a third country which is party to an international agreement with the Union, as identified in Article 7 of Horizon 2020 Framework Programme Regulation No 1291/2013. Article 7 sets out the conditions for association of non-EU countries to Horizon 2020.

Two or more beneficiaries own results jointly if:

- (a) they have jointly generated them and
- (b) it is not possible to:
 - (i) establish the respective contribution of each beneficiary, or
 - (ii) separate them for the purpose of applying for, obtaining or maintaining their protection (see Article 27).

The joint owners must agree (in writing) on the allocation and terms of exercise of their joint ownership ('**joint ownership agreement**'), to ensure compliance with their obligations under this Agreement.

Unless otherwise agreed in the joint ownership agreement, each joint owner may grant non-exclusive licences to third parties to exploit jointly-owned results (without any right to sub-license), if the other joint owners are given:

- (a) at least 45 days advance notice and
- (b) fair and reasonable compensation.

Once the results have been generated, joint owners may agree (in writing) to apply another regime than joint ownership (such as, for instance, transfer to a single owner (see Article 30) with access rights for the others).

26.3 Rights of third parties (including personnel)

If third parties (including personnel) may claim rights to the results, the beneficiary concerned must ensure that it complies with its obligations under the Agreement.

If a third party generates results, the beneficiary concerned must obtain all necessary rights (transfer, licences or other) from the third party, in order to be able to respect its obligations as if those results were generated by the beneficiary itself.

If obtaining the rights is impossible, the beneficiary must refrain from using the third party to generate the results.

26.4 Agency ownership, to protect results

26.4.1 The Agency may — with the consent of the beneficiary concerned — assume ownership of results to protect them, if a beneficiary intends — up to four years after the period set out in Article 3 — to disseminate its results without protecting them, except in any of the following cases:

- (a) the lack of protection is because protecting the results is not possible, reasonable or justified (given the circumstances);
- (b) the lack of protection is because there is a lack of potential for commercial or industrial exploitation, or
- (c) the beneficiary intends to transfer the results to another beneficiary or third party established in an EU Member State or associated country, which will protect them.

Before the results are disseminated and unless any of the cases above under Points (a), (b) or (c) applies, the beneficiary must formally notify the Agency and at the same time inform it of any reasons for refusing consent. The beneficiary may refuse consent only if it can show that its legitimate interests would suffer significant harm.

If the Agency decides to assume ownership, it will formally notify the beneficiary concerned within 45 days of receiving notification.

No dissemination relating to these results may take place before the end of this period or, if the Agency takes a positive decision, until it has taken the necessary steps to protect the results.

26.4.2 The Agency may — with the consent of the beneficiary concerned — assume ownership of results to protect them, if a beneficiary intends — up to four years after the period set out in Article 3 — to stop protecting them or not to seek an extension of protection, except in any of the following cases:

- (a) the protection is stopped because of a lack of potential for commercial or industrial exploitation;
- (b) an extension would not be justified given the circumstances.

A beneficiary that intends to stop protecting results or not seek an extension must — unless any of the cases above under Points (a) or (b) applies — formally notify the Agency at least 60 days before the protection lapses or its extension is no longer possible and at the same time inform it of any reasons for refusing consent. The beneficiary may refuse consent only if it can show that its legitimate interests would suffer significant harm.

If the Agency decides to assume ownership, it will formally notify the beneficiary concerned within 45 days of receiving notification.

26.5 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to the any of the other measures described in Chapter 6.

ARTICLE 27 — PROTECTION OF RESULTS — VISIBILITY OF EU FUNDING

27.1 Obligation to protect the results

Each beneficiary must examine the possibility of protecting its results and must adequately protect them — for an appropriate period and with appropriate territorial coverage — if:

- (a) the results can reasonably be expected to be commercially or industrially exploited and
- (b) protecting them is possible, reasonable and justified (given the circumstances).

When deciding on protection, the beneficiary must consider its own legitimate interests and the legitimate interests (especially commercial) of the other beneficiaries.

27.2 Agency ownership, to protect the results

If a beneficiary intends not to protect its results, to stop protecting them or not seek an extension of

protection, the Agency may — under certain conditions (see Article 26.4) — assume ownership to ensure their (continued) protection.

27.3 Information on EU funding

Applications for protection of results (including patent applications) filed by or on behalf of a beneficiary must — unless the Agency requests or agrees otherwise or unless it is impossible — include the following:

“The project leading to this application has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 814910”.

27.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 28 — EXPLOITATION OF RESULTS

28.1 Obligation to exploit the results

Each beneficiary must — up to four years after the period set out in Article 3 — take measures aiming to ensure ‘**exploitation**’ of its results (either directly or indirectly, in particular through transfer or licensing; see Article 30) by:

- (a) using them in further research activities (outside the action);
- (b) developing, creating or marketing a product or process;
- (c) creating and providing a service, or
- (d) using them in standardisation activities.

This does not change the security obligations in Article 37, which still apply.

28.2 Results that could contribute to European or international standards — Information on EU funding

If results are incorporated in a standard, the beneficiary concerned must — unless the Agency requests or agrees otherwise or unless it is impossible — ask the standardisation body to include the following statement in (information related to) the standard:

“Results incorporated in this standard received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 814910”.

28.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced in accordance with Article 43.

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 29 — DISSEMINATION OF RESULTS — OPEN ACCESS — VISIBILITY OF EU FUNDING

29.1 Obligation to disseminate results

Unless it goes against their legitimate interests, each beneficiary must — as soon as possible — ‘**disseminate**’ its results by disclosing them to the public by appropriate means (other than those resulting from protecting or exploiting the results), including in scientific publications (in any medium).

This does not change the obligation to protect results in Article 27, the confidentiality obligations in Article 36, the security obligations in Article 37 or the obligations to protect personal data in Article 39, all of which still apply.

A beneficiary that intends to disseminate its results must give advance notice to the other beneficiaries of — unless agreed otherwise — at least 45 days, together with sufficient information on the results it will disseminate.

Any other beneficiary may object within — unless agreed otherwise — 30 days of receiving notification, if it can show that its legitimate interests in relation to the results or background would be significantly harmed. In such cases, the dissemination may not take place unless appropriate steps are taken to safeguard these legitimate interests.

If a beneficiary intends not to protect its results, it may — under certain conditions (see Article 26.4.1) — need to formally notify the Agency before dissemination takes place.

29.2 Open access to scientific publications

Each beneficiary must ensure open access (free of charge online access for any user) to all peer-reviewed scientific publications relating to its results.

In particular, it must:

- (a) as soon as possible and at the latest on publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications;

Moreover, the beneficiary must aim to deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.

- (b) ensure open access to the deposited publication — via the repository — at the latest:
 - (i) on publication, if an electronic version is available for free via the publisher, or
 - (ii) within six months of publication (twelve months for publications in the social sciences and humanities) in any other case.
- (c) ensure open access — via the repository — to the bibliographic metadata that identify the deposited publication.

The bibliographic metadata must be in a standard format and must include all of the following:

- the terms “European Union (EU)” and “Horizon 2020”;
- the name of the action, acronym and grant number;
- the publication date, and length of embargo period if applicable, and
- a persistent identifier.

29.3 Open access to research data

Regarding the digital research data generated in the action (**‘data’**), the beneficiaries must:

- (a) deposit in a research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge for any user — the following:
 - (i) the data, including associated metadata, needed to validate the results presented in scientific publications, as soon as possible;
 - (ii) not applicable;
 - (iii) other data, including associated metadata, as specified and within the deadlines laid down in the ‘data management plan’ (see Annex 1);
- (b) provide information — via the repository — about tools and instruments at the disposal of the beneficiaries and necessary for validating the results (and — where possible — provide the tools and instruments themselves).

This does not change the obligation to protect results in Article 27, the confidentiality obligations in Article 36, the security obligations in Article 37 or the obligations to protect personal data in Article 39, all of which still apply.

As an exception, the beneficiaries do not have to ensure open access to specific parts of their research data under Point (a)(i) and (iii), if the achievement of the action's main objective (as described in Annex 1) would be jeopardised by making those specific parts of the research data openly accessible. In this case, the data management plan must contain the reasons for not giving access.

29.4 Information on EU funding — Obligation and right to use the EU emblem

Unless the Agency requests or agrees otherwise or unless it is impossible, any dissemination of results (in any form, including electronic) must:

- (a) display the EU emblem and
- (b) include the following text:

“This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 814910”.

When displayed together with another logo, the EU emblem must have appropriate prominence.

For the purposes of their obligations under this Article, the beneficiaries may use the EU emblem without first obtaining approval from the Agency.

This does not however give them the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

29.5 Disclaimer excluding Agency responsibility

Any dissemination of results must indicate that it reflects only the author's view and that the Agency is not responsible for any use that may be made of the information it contains.

29.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 30 — TRANSFER AND LICENSING OF RESULTS

30.1 Transfer of ownership

Each beneficiary may transfer ownership of its results.

It must however ensure that its obligations under Articles 26.2, 26.4, 27, 28, 29, 30 and 31 also apply to the new owner and that this owner has the obligation to pass them on in any subsequent transfer.

This does not change the security obligations in Article 37, which still apply.

Unless agreed otherwise (in writing) for specifically-identified third parties or unless impossible under applicable EU and national laws on mergers and acquisitions, a beneficiary that intends to transfer ownership of results must give at least 45 days advance notice (or less if agreed in writing) to the other beneficiaries that still have (or still may request) access rights to the results. This notification must include sufficient information on the new owner to enable any beneficiary concerned to assess the effects on its access rights.

Unless agreed otherwise (in writing) for specifically-identified third parties, any other beneficiary may object within 30 days of receiving notification (or less if agreed in writing), if it can show that the transfer would adversely affect its access rights. In this case, the transfer may not take place until agreement has been reached between the beneficiaries concerned.

30.2 Granting licenses

Each beneficiary may grant licences to its results (or otherwise give the right to exploit them), if:

- (a) this does not impede the access rights under Article 31 and
- (b) not applicable.

In addition to Points (a) and (b), exclusive licences for results may be granted only if all the other beneficiaries concerned have waived their access rights (see Article 31.1).

This does not change the dissemination obligations in Article 29 or security obligations in Article 37, which still apply.

30.3 Agency right to object to transfers or licensing

Not applicable

30.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 31 — ACCESS RIGHTS TO RESULTS

31.1 Exercise of access rights — Waiving of access rights — No sub-licensing

The conditions set out in Article 25.1 apply.

The obligations set out in this Article do not change the security obligations in Article 37, which still apply.

31.2 Access rights for other beneficiaries, for implementing their own tasks under the action

The beneficiaries must give each other access — on a royalty-free basis — to results needed for implementing their own tasks under the action.

31.3 Access rights for other beneficiaries, for exploiting their own results

The beneficiaries must give each other — under fair and reasonable conditions (see Article 25.3) — access to results needed for exploiting their own results.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

31.4 Access rights of affiliated entities

Unless agreed otherwise in the consortium agreement, access to results must also be given — under fair and reasonable conditions (Article 25.3) — to affiliated entities established in an EU Member State or associated country, if this is needed for those entities to exploit the results generated by the beneficiaries to which they are affiliated.

Unless agreed otherwise (see above; Article 31.1), the affiliated entity concerned must make any such request directly to the beneficiary that owns the results.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

31.5 Access rights for the EU institutions, bodies, offices or agencies and EU Member States

The beneficiaries must give access to their results — on a royalty-free basis — to EU institutions, bodies, offices or agencies, for developing, implementing or monitoring EU policies or programmes.

Such access rights are limited to non-commercial and non-competitive use.

This does not change the right to use any material, document or information received from the beneficiaries for communication and publicising activities (see Article 38.2).

31.6 Access rights for third parties

Not applicable

31.7 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

SECTION 4 OTHER RIGHTS AND OBLIGATIONS

ARTICLE 32 — RECRUITMENT AND WORKING CONDITIONS FOR RESEARCHERS

32.1 Obligation to take measures to implement the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers

The beneficiaries must take all measures to implement the principles set out in the Commission Recommendation on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers²³, in particular regarding:

- working conditions;
- transparent recruitment processes based on merit, and
- career development.

The beneficiaries must ensure that researchers and third parties involved in the action are aware of them.

32.2 Consequences of non-compliance

If a beneficiary breaches its obligations under this Article, the Agency may apply any of the measures described in Chapter 6.

ARTICLE 33 — GENDER EQUALITY

33.1 Obligation to aim for gender equality

²³ Commission Recommendation 2005/251/EC of 11 March 2005 on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers (OJ L 75, 22.3.2005, p. 67).

The beneficiaries must take all measures to promote equal opportunities between men and women in the implementation of the action. They must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level.

33.2 Consequences of non-compliance

If a beneficiary breaches its obligations under this Article, the Agency may apply any of the measures described in Chapter 6.

ARTICLE 34 — ETHICS AND RESEARCH INTEGRITY

34.1 Obligation to comply with ethical and research integrity principles

The beneficiaries must carry out the action in compliance with:

- (a) ethical principles (including the highest standards of research integrity)
- and
- (b) applicable international, EU and national law.

Funding will not be granted for activities carried out outside the EU if they are prohibited in all Member States or for activities which destroy human embryos (for example, for obtaining stem cells).

The beneficiaries must ensure that the activities under the action have an exclusive focus on civil applications.

The beneficiaries must ensure that the activities under the action do not:

- (a) aim at human cloning for reproductive purposes;
- (b) intend to modify the genetic heritage of human beings which could make such changes heritable (with the exception of research relating to cancer treatment of the gonads, which may be financed), or
- (c) intend to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.

In addition, the beneficiaries must respect the fundamental principle of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity²⁴.

This implies compliance with the following fundamental principles:

- **reliability** in ensuring the quality of research reflected in the design, the methodology, the analysis and the use of resources;
- **honesty** in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair and unbiased way;

²⁴ European Code of Conduct for Research Integrity of ALLEA (All European Academies)
http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf

- **respect** for colleagues, research participants, society, ecosystems, cultural heritage and the environment;
- **accountability** for the research from idea to publication, for its management and organisation, for training, supervision and mentoring, and for its wider impacts

and means that beneficiaries must ensure that persons carrying out research tasks follow the good research practices and refrain from the research integrity violations described in this Code.

This does not change the other obligations under this Agreement or obligations under applicable international, EU or national law, all of which still apply.

34.2 Activities raising ethical issues

Activities raising ethical issues must comply with the ‘**ethics requirements**’ set out as deliverables in Annex 1.

Before the beginning of an activity raising an ethical issue, each beneficiary must have obtained:

- (a) any ethics committee opinion required under national law and
- (b) any notification or authorisation for activities raising ethical issues required under national and/or European law

needed for implementing the action tasks in question.

The documents must be kept on file and be submitted upon request by the coordinator to the Agency (see Article 52). If they are not in English, they must be submitted together with an English summary, which shows that the action tasks in question are covered and includes the conclusions of the committee or authority concerned (if available).

34.3 Activities involving human embryos or human embryonic stem cells

Activities involving research on human embryos or human embryonic stem cells may be carried out, in addition to Article 34.1, only if:

- they are set out in Annex 1 or
- the coordinator has obtained explicit approval (in writing) from the Agency (see Article 52).

34.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or participation of the beneficiary may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 35 — CONFLICT OF INTERESTS

35.1 Obligation to avoid a conflict of interests

The beneficiaries must take all measures to prevent any situation where the impartial and objective

implementation of the action is compromised for reasons involving economic interest, political or national affinity, family or emotional ties or any other shared interest (**‘conflict of interests’**).

They must formally notify to the Agency without delay any situation constituting or likely to lead to a conflict of interests and immediately take all the necessary steps to rectify this situation.

The Agency may verify that the measures taken are appropriate and may require additional measures to be taken by a specified deadline.

35.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or participation of the beneficiary may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 36 — CONFIDENTIALITY

36.1 General obligation to maintain confidentiality

During implementation of the action and for four years after the period set out in Article 3, the parties must keep confidential any data, documents or other material (in any form) that is identified as confidential at the time it is disclosed (**‘confidential information’**).

If a beneficiary requests, the Agency may agree to keep such information confidential for an additional period beyond the initial four years.

If information has been identified as confidential only orally, it will be considered to be confidential only if this is confirmed in writing within 15 days of the oral disclosure.

Unless otherwise agreed between the parties, they may use confidential information only to implement the Agreement.

The beneficiaries may disclose confidential information to their personnel or third parties involved in the action only if they:

- (a) need to know to implement the Agreement and
- (b) are bound by an obligation of confidentiality.

This does not change the security obligations in Article 37, which still apply.

The Agency may disclose confidential information to its staff, other EU institutions and bodies. It may disclose confidential information to third parties, if:

- (a) this is necessary to implement the Agreement or safeguard the EU's financial interests and
- (b) the recipients of the information are bound by an obligation of confidentiality.

Under the conditions set out in Article 4 of the Rules for Participation Regulation No 1290/2013²⁵,

²⁵ Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 December 2013 laying down the

the Commission must moreover make available information on the results to other EU institutions, bodies, offices or agencies as well as Member States or associated countries.

The confidentiality obligations no longer apply if:

- (a) the disclosing party agrees to release the other party;
- (b) the information was already known by the recipient or is given to him without obligation of confidentiality by a third party that was not bound by any obligation of confidentiality;
- (c) the recipient proves that the information was developed without the use of confidential information;
- (d) the information becomes generally and publicly available, without breaching any confidentiality obligation, or
- (e) the disclosure of the information is required by EU or national law.

36.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 37 — SECURITY-RELATED OBLIGATIONS

37.1 Results with a security recommendation

Not applicable

37.2 Classified information

Not applicable

37.3 Activities involving dual-use goods or dangerous materials and substances

Not applicable

37.4 Consequences of non-compliance

Not applicable

ARTICLE 38 — PROMOTING THE ACTION — VISIBILITY OF EU FUNDING

38.1 Communication activities by beneficiaries

38.1.1 Obligation to promote the action and its results

rules for participation and dissemination in "Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)" (OJ L 347, 20.12.2013 p.81).

The beneficiaries must promote the action and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner.

This does not change the dissemination obligations in Article 29, the confidentiality obligations in Article 36 or the security obligations in Article 37, all of which still apply.

Before engaging in a communication activity expected to have a major media impact, the beneficiaries must inform the Agency (see Article 52).

38.1.2 Information on EU funding — Obligation and right to use the EU emblem

Unless the Agency requests or agrees otherwise or unless it is impossible, any communication activity related to the action (including in electronic form, via social media, etc.) and any infrastructure, equipment and major results funded by the grant must:

(a) display the EU emblem and

(b) include the following text:

For communication activities:

“This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 814910”.

For infrastructure, equipment and major results:

“This *[infrastructure]/[equipment]/[insert type of result]* is part of a project that has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 814910”.

When displayed together with another logo, the EU emblem must have appropriate prominence.

For the purposes of their obligations under this Article, the beneficiaries may use the EU emblem without first obtaining approval from the Agency.

This does not, however, give them the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

38.1.3 Disclaimer excluding Agency and Commission responsibility

Any communication activity related to the action must indicate that it reflects only the author's view and that the Agency and the Commission are not responsible for any use that may be made of the information it contains.

38.2 Communication activities by the Agency and the Commission

38.2.1 Right to use beneficiaries’ materials, documents or information

The Agency and the Commission may use, for its communication and publicising activities, information relating to the action, documents notably summaries for publication and public deliverables as well as any other material, such as pictures or audio-visual material received from any beneficiary (including in electronic form).

This does not change the confidentiality obligations in Article 36 and the security obligations in Article 37, all of which still apply.

If the Agency's or the Commission's use of these materials, documents or information would risk compromising legitimate interests, the beneficiary concerned may request the Agency or the Commission not to use it (see Article 52).

The right to use a beneficiary's materials, documents and information includes:

- (a) **use for its own purposes** (in particular, making them available to persons working for the Agency, the Commission or any other EU institution, body, office or agency or body or institutions in EU Member States; and copying or reproducing them in whole or in part, in unlimited numbers);
- (b) **distribution to the public** (in particular, publication as hard copies and in electronic or digital format, publication on the internet, as a downloadable or non-downloadable file, broadcasting by any channel, public display or presentation, communicating through press information services, or inclusion in widely accessible databases or indexes);
- (c) **editing or redrafting** for communication and publicising activities (including shortening, summarising, inserting other elements (such as meta-data, legends, other graphic, visual, audio or text elements), extracting parts (e.g. audio or video files), dividing into parts, use in a compilation);
- (d) translation;
- (e) giving **access in response to individual requests** under Regulation No 1049/2001²⁷, without the right to reproduce or exploit;
- (f) **storage** in paper, electronic or other form;
- (g) **archiving**, in line with applicable document-management rules, and
- (h) the right to authorise **third parties** to act on its behalf or sub-license the modes of use set out in Points (b), (c), (d) and (f) to third parties if needed for the communication and publicising activities of the Agency or the Commission.

If the right of use is subject to rights of a third party (including personnel of the beneficiary), the beneficiary must ensure that it complies with its obligations under this Agreement (in particular, by obtaining the necessary approval from the third parties concerned).

Where applicable (and if provided by the beneficiaries), the Agency or the Commission will insert the following information:

“© – [year] – [name of the copyright owner]. All rights reserved. Licensed to the Innovation and Networks Executive Agency (INEA) and the European Union (EU) under conditions.”

38.3 Consequences of non-compliance

²⁷ Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents, OJ L 145, 31.5.2001, p. 43.

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 39 — PROCESSING OF PERSONAL DATA

39.1 Processing of personal data by the Agency and the Commission

Any personal data under the Agreement will be processed by the Agency or the Commission under Regulation No 45/2001²⁸ and according to the ‘notifications of the processing operations’ to the Data Protection Officer (DPO) of the Agency or the Commission (publicly accessible in the DPO register).

Such data will be processed by the ‘**data controller**’ of the Agency or the Commission for the purposes of implementing, managing and monitoring the Agreement or protecting the financial interests of the EU or Euratom (including checks, reviews, audits and investigations; see Article 22).

The persons whose personal data are processed have the right to access and correct their own personal data. For this purpose, they must send any queries about the processing of their personal data to the data controller, via the contact point indicated in the privacy statement(s) that are published on the Agency and the Commission websites.

They also have the right to have recourse at any time to the European Data Protection Supervisor (EDPS).

39.2 Processing of personal data by the beneficiaries

The beneficiaries must process personal data under the Agreement in compliance with applicable EU and national law on data protection (including authorisations or notification requirements).

The beneficiaries may grant their personnel access only to data that is strictly necessary for implementing, managing and monitoring the Agreement.

The beneficiaries must inform the personnel whose personal data are collected and processed by the Agency or the Commission. For this purpose, they must provide them with the privacy statement(s) (see above), before transmitting their data to the Agency or the Commission.

39.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under Article 39.2, the Agency may apply any of the measures described in Chapter 6.

ARTICLE 40 — ASSIGNMENTS OF CLAIMS FOR PAYMENT AGAINST THE AGENCY

The beneficiaries may not assign any of their claims for payment against the Agency to any third party, except if approved by the Agency on the basis of a reasoned, written request by the coordinator (on behalf of the beneficiary concerned).

²⁸ Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data (OJ L 8, 12.01.2001, p. 1).

If the Agency has not accepted the assignment or the terms of it are not observed, the assignment will have no effect on it.

In no circumstances will an assignment release the beneficiaries from their obligations towards the Agency.

CHAPTER 5 DIVISION OF BENEFICIARIES' ROLES AND RESPONSIBILITIES **— RELATIONSHIP WITH COMPLEMENTARY BENEFICIARIES —** **RELATIONSHIP WITH PARTNERS OF A JOINT ACTION**

ARTICLE 41 — DIVISION OF BENEFICIARIES' ROLES AND RESPONSIBILITIES **— RELATIONSHIP WITH COMPLEMENTARY BENEFICIARIES —** **RELATIONSHIP WITH PARTNERS OF A JOINT ACTION**

41.1 Roles and responsibility towards the Agency

The beneficiaries have full responsibility for implementing the action and complying with the Agreement.

The beneficiaries are jointly and severally liable for the **technical implementation** of the action as described in Annex 1. If a beneficiary fails to implement its part of the action, the other beneficiaries become responsible for implementing this part (without being entitled to any additional EU funding for doing so), unless the Agency expressly relieves them of this obligation.

The **financial responsibility** of each beneficiary is governed by Article 44.

41.2 Internal division of roles and responsibilities

The internal roles and responsibilities of the beneficiaries are divided as follows:

(a) Each **beneficiary** must:

- (i) keep information stored in the Participant Portal Beneficiary Register (via the electronic exchange system) up to date (see Article 17);
- (ii) inform the coordinator immediately of any events or circumstances likely to affect significantly or delay the implementation of the action (see Article 17);
- (iii) submit to the coordinator in good time:
 - individual financial statements for itself and, if required, certificates on the financial statements (see Article 20);
 - the data needed to draw up the technical reports (see Article 20);
 - ethics committee opinions and notifications or authorisations for activities raising ethical issues (see Article 34);
 - any other documents or information required by the Agency or the Commission under the Agreement, unless the Agreement requires the beneficiary to submit this information directly to the Agency or the Commission.

(b) The coordinator must:

- (i) monitor that the action is implemented properly (see Article 7);
- (ii) act as the intermediary for all communications between the beneficiaries and the Agency (in particular, providing the Agency with the information described in Article 17), unless the Agreement specifies otherwise;
- (iii) request and review any documents or information required by the Agency and verify their completeness and correctness before passing them on to the Agency;
- (iv) submit the deliverables and reports to the Agency (see Articles 19 and 20);
- (v) ensure that all payments are made to the other beneficiaries without unjustified delay (see Article 21);
- (vi) inform the Agency of the amounts paid to each beneficiary, when required under the Agreement (see Articles 44 and 50) or requested by the Agency.

The coordinator may not delegate or subcontract the above-mentioned tasks to any other beneficiary or third party (including linked third parties).

41.3 Internal arrangements between beneficiaries — Consortium agreement

The beneficiaries must have internal arrangements regarding their operation and co-ordination to ensure that the action is implemented properly. These internal arrangements must be set out in a written ‘**consortium agreement**’ between the beneficiaries, which may cover:

- internal organisation of the consortium;
- management of access to the electronic exchange system;
- distribution of EU funding;
- additional rules on rights and obligations related to background and results (including whether access rights remain or not, if a beneficiary is in breach of its obligations) (see Section 3 of Chapter 4);
- settlement of internal disputes;
- liability, indemnification and confidentiality arrangements between the beneficiaries.

The consortium agreement must not contain any provision contrary to the Agreement.

41.4 Relationship with complementary beneficiaries — Collaboration agreement

Not applicable

41.5 Relationship with partners of a joint action — Coordination agreement

Not applicable

CHAPTER 6 REJECTION OF COSTS — REDUCTION OF THE GRANT — RECOVERY — SANCTIONS — DAMAGES — SUSPENSION — TERMINATION — FORCE MAJEURE

SECTION 1 REJECTION OF COSTS — REDUCTION OF THE GRANT — RECOVERY — SANCTIONS

ARTICLE 42 — REJECTION OF INELIGIBLE COSTS

42.1 Conditions

The Agency will — after **termination of the participation of a beneficiary**, at the time of an **interim payment, at the payment of the balance** or **afterwards** — reject any costs which are ineligible (see Article 6), in particular following checks, reviews, audits or investigations (see Article 22).

The rejection may also be based on the **extension of findings from other grants to this grant** (see Article 22.5.2).

42.2 Ineligible costs to be rejected — Calculation — Procedure

Ineligible costs will be rejected in full.

If the rejection of costs does not lead to a recovery (see Article 44), the Agency will formally notify the coordinator or beneficiary concerned of the rejection of costs, the amounts and the reasons why (if applicable, together with the notification of amounts due; see Article 21.5). The coordinator or beneficiary concerned may — within 30 days of receiving notification — formally notify the Agency of its disagreement and the reasons why.

If the rejection of costs leads to a recovery, the Agency will follow the contradictory procedure with pre-information letter set out in Article 44.

42.3 Effects

If the Agency rejects costs at the time of an **interim payment** or **the payment of the balance**, it will deduct them from the total eligible costs declared, for the action, in the periodic or final summary financial statement (see Articles 20.3 and 20.4). It will then calculate the interim payment or payment of the balance as set out in Articles 21.3 or 21.4.

If the Agency rejects costs **after termination of the participation of a beneficiary**, it will deduct them from the costs declared by the beneficiary in the termination report and include the rejection in the calculation after termination (see Article 50.2 and 50.3).

If the Agency — **after an interim payment but before the payment of the balance** — rejects costs declared in a periodic summary financial statement, it will deduct them from the total eligible costs declared, for the action, in the next periodic summary financial statement or in the final summary financial statement. It will then calculate the interim payment or payment of the balance as set out in Articles 21.3 or 21.4.

If the Agency rejects costs **after the payment of the balance**, it will deduct the amount rejected from

the total eligible costs declared, by the beneficiary, in the final summary financial statement. It will then calculate the revised final grant amount as set out in Article 5.4.

ARTICLE 43 — REDUCTION OF THE GRANT

43.1 Conditions

The Agency may — **after termination of the participation of a beneficiary, at the payment of the balance or afterwards** — reduce the grant amount (see Article 5.1), if :

- (a) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed:
 - (i) substantial errors, irregularities or fraud or
 - (ii) serious breach of obligations under the Agreement or during the award procedure (including improper implementation of the action, submission of false information, failure to provide required information, breach of ethical principles) or
- (b) a beneficiary (or a natural person who has the power to represent or take decision on its behalf) has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2).

43.2 Amount to be reduced — Calculation — Procedure

The amount of the reduction will be proportionate to the seriousness of the errors, irregularities or fraud or breach of obligations.

Before reduction of the grant, the Agency will formally notify a ‘**pre-information letter**’ to the coordinator or beneficiary concerned:

- informing it of its intention to reduce the grant, the amount it intends to reduce and the reasons why and
- inviting it to submit observations within 30 days of receiving notification.

If the Agency does not receive any observations or decides to pursue reduction despite the observations it has received, it will formally notify **confirmation** of the reduction (if applicable, together with the notification of amounts due; see Article 21).

43.3 Effects

If the Agency reduces the grant **after termination of the participation of a beneficiary**, it will calculate the reduced grant amount for that beneficiary and then determine the amount due to that beneficiary (see Article 50.2 and 50.3).

If the Agency reduces the grant **at the payment of the balance**, it will calculate the reduced grant amount for the action and then determine the amount due as payment of the balance (see Articles 5.3.4 and 21.4).

If the Agency reduces the grant **after the payment of the balance**, it will calculate the revised final grant amount for the beneficiary concerned (see Article 5.4). If the revised final grant amount for the beneficiary concerned is lower than its share of the final grant amount, the Agency will recover the difference (see Article 44).

ARTICLE 44 — RECOVERY OF UNDUE AMOUNTS

44.1 Amount to be recovered — Calculation — Procedure

The Agency will — after **termination of the participation of a beneficiary, at the payment of the balance or afterwards** — claim back any amount that was paid, but is not due under the Agreement.

Each beneficiary's financial responsibility in case of recovery is limited to its own debt, except for the amount retained for the Guarantee Fund (see Article 21.4).

44.1.1 Recovery after termination of a beneficiary's participation

If recovery takes place after termination of a beneficiary's participation (including the coordinator), the Agency will claim back the undue amount from the beneficiary concerned, by formally notifying it a debit note (see Article 50.2 and 50.3). This note will specify the amount to be recovered, the terms and the date for payment.

If payment is not made by the date specified in the debit note, the Agency or the Commission will **recover** the amount:

- (a) by '**offsetting**' it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Agency, the Commission or another executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the Agency or the Commission may offset before the payment date specified in the debit note;

- (b) not applicable;

- (c) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial regulation No 966/2012.

If payment is not made by the date specified in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following the payment date in the debit note, up to and including the date the Agency or the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC²⁹ applies.

²⁹ Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC (OJ L 319, 05.12.2007, p. 1).

44.1.2 Recovery at payment of the balance

If the payment of the balance takes the form of a recovery (see Article 21.4), the Agency will formally notify a ‘**pre-information letter**’ to the coordinator:

- informing it of its intention to recover, the amount due as the balance and the reasons why;
- specifying that it intends to deduct the amount to be recovered from the amount retained for the Guarantee Fund;
- requesting the coordinator to submit a report on the distribution of payments to the beneficiaries within 30 days of receiving notification, and
- inviting the coordinator to submit observations within 30 days of receiving notification.

If no observations are submitted or the Agency decides to pursue recovery despite the observations it has received, it will **confirm recovery** (together with the notification of amounts due; see Article 21.5) and:

- pay the difference between the amount to be recovered and the amount retained for the Guarantee Fund, **if the difference is positive** or
- formally notify to the coordinator a **debit note** for the difference between the amount to be recovered and the amount retained for the Guarantee Fund, **if the difference is negative**. This note will also specify the terms and the date for payment.

If the coordinator does not repay the Agency by the date in the debit note and has not submitted the report on the distribution of payments: the Agency or the Commission will **recover** the amount set out in the debit note from the coordinator (see below).

If the coordinator does not repay the Agency by the date in the debit note, but has submitted the report on the distribution of payments: the Agency will:

- (a) identify the beneficiaries for which the amount calculated as follows is negative:

$\{ \{ \{ \text{beneficiary's costs declared in the final summary financial statement and approved by the Agency multiplied by the reimbursement rate set out in Article 5.2 for the beneficiary concerned} \}$

divided by

$\text{the EU contribution for the action calculated according to Article 5.3.1} \}$

multiplied by

$\text{the final grant amount (see Article 5.3)} \}$,

minus

$\{ \text{pre-financing and interim payments received by the beneficiary} \} \}$.

- (b) formally notify to each beneficiary identified according to point (a) a **debit note** specifying the terms and date for payment. The amount of the debit note is calculated as follows:

$\{ \{ \text{amount calculated according to point (a) for the beneficiary concerned} \}$

divided by

the sum of the amounts calculated according to point (a) for all the beneficiaries identified according to point (a)}

multiplied by

the amount set out in the debit note formally notified to the coordinator}.

If payment is not made by the date specified in the debit note, the Agency or the Commission will **recover** the amount:

- (a) by **offsetting** it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Agency, the Commission or another executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the Agency or the Commission may offset before the payment date specified in the debit note;

- (b) by **drawing on the Guarantee Fund**. The Agency or the Commission will formally notify the beneficiary concerned the debit note on behalf of the Guarantee Fund and recover the amount:

(i) not applicable;

- (ii) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial Regulation No 966/2012.

If payment is not made by the date in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following the payment date in the debit note, up to and including the date the Agency or the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC applies.

44.1.3 Recovery of amounts after payment of the balance

If, for a beneficiary, the revised final grant amount (see Article 5.4) is lower than its share of the final grant amount, it must repay the difference to the Agency.

The beneficiary's share of the final grant amount is calculated as follows:

{ { beneficiary's costs declared in the final summary financial statement and approved by the Agency multiplied by the reimbursement rate set out in Article 5.2 for the beneficiary concerned }

divided by

the EU contribution for the action calculated according to Article 5.3.1 }

multiplied by

the final grant amount (see Article 5.3)}.

If the coordinator has not distributed amounts received (see Article 21.7), the Agency will also recover these amounts.

The Agency will formally notify a **pre-information letter** to the beneficiary concerned:

- informing it of its intention to recover, the due amount and the reasons why and
- inviting it to submit observations within 30 days of receiving notification.

If no observations are submitted or the Agency decides to pursue recovery despite the observations it has received, it will **confirm** the amount to be recovered and formally notify to the beneficiary concerned a **debit note**. This note will also specify the terms and the date for payment.

If payment is not made by the date specified in the debit note, the Agency or the Commission will **recover** the amount:

- (a) by **offsetting** it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Agency, the Commission or another executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the Agency or the Commission may offset before the payment date specified in the debit note;

- (b) by **drawing on the Guarantee Fund**. The Agency or the Commission will formally notify the beneficiary concerned the debit note on behalf of the Guarantee Fund and recover the amount:
 - (i) not applicable;
 - (ii) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial Regulation No 966/2012.

If payment is not made by the date in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following the date for payment in the debit note, up to and including the date the Agency or the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC applies.

ARTICLE 45 — ADMINISTRATIVE SANCTIONS

In addition to contractual measures, the Agency or the Commission may also adopt administrative sanctions under Articles 106 and 131(4) of the Financial Regulation No 966/2012 (i.e. exclusion from future procurement contracts, grants, prizes and expert contracts and/or financial penalties).

SECTION 2 LIABILITY FOR DAMAGES

ARTICLE 46 — LIABILITY FOR DAMAGES

46.1 Liability of the Agency

The Agency cannot be held liable for any damage caused to the beneficiaries or to third parties as a consequence of implementing the Agreement, including for gross negligence.

The Agency cannot be held liable for any damage caused by any of the beneficiaries or third parties involved in the action, as a consequence of implementing the Agreement.

46.2 Liability of the beneficiaries

Except in case of force majeure (see Article 51), the beneficiaries must compensate the Agency for any damage it sustains as a result of the implementation of the action or because the action was not implemented in full compliance with the Agreement.

SECTION 3 SUSPENSION AND TERMINATION

ARTICLE 47 — SUSPENSION OF PAYMENT DEADLINE

47.1 Conditions

The Agency may — at any moment — suspend the payment deadline (see Article 21.2 to 21.4) if a request for payment (see Article 20) cannot be approved because:

- (a) it does not comply with the provisions of the Agreement (see Article 20);
- (b) the technical or financial reports have not been submitted or are not complete or additional information is needed, or
- (c) there is doubt about the eligibility of the costs declared in the financial statements and additional checks, reviews, audits or investigations are necessary.

47.2 Procedure

The Agency will formally notify the coordinator of the suspension and the reasons why.

The suspension will **take effect** the day notification is sent by the Agency (see Article 52).

If the conditions for suspending the payment deadline are no longer met, the suspension will be **lifted** — and the remaining period will resume.

If the suspension exceeds two months, the coordinator may request the Agency if the suspension will continue.

If the payment deadline has been suspended due to the non-compliance of the technical or financial reports (see Article 20) and the revised report or statement is not submitted or was submitted but is also rejected, the Agency may also terminate the Agreement or the participation of the beneficiary (see Article 50.3.1(l)).

ARTICLE 48 — SUSPENSION OF PAYMENTS

48.1 Conditions

The Agency may — at any moment — suspend payments, in whole or in part and interim payments or the payment of the balance for one or more beneficiaries, if:

- (a) a beneficiary (or a natural person who has the power to represent or take decision on its behalf) has committed or is suspected of having committed:
 - (i) substantial errors, irregularities or fraud or
 - (ii) serious breach of obligations under the Agreement or during the award procedure (including improper implementation of the action, submission of false information, failure to provide required information, breach of ethical principles) or
- (b) a beneficiary (or a natural person who has the power to represent or take decision on its behalf) has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2).

If payments are suspended for one or more beneficiaries, the Agency will make partial payment(s) for the part(s) not suspended. If suspension concerns the payment of the balance, — once suspension is lifted — the payment or the recovery of the amount(s) concerned will be considered the payment of the balance that closes the action.

48.2 Procedure

Before suspending payments, the Agency will formally notify the coordinator or beneficiary concerned:

- informing it of its intention to suspend payments and the reasons why and
- inviting it to submit observations within 30 days of receiving notification.

If the Agency does not receive observations or decides to pursue the procedure despite the observations it has received, it will formally notify **confirmation** of the suspension. Otherwise, it will formally notify that the suspension procedure is not continued.

The suspension will **take effect** the day the confirmation notification is sent by the Agency.

If the conditions for resuming payments are met, the suspension will be **lifted**. The Agency will formally notify the coordinator or beneficiary concerned.

During the suspension, the periodic report(s) for all reporting periods except the last one (see Article 20.3), must not contain any individual financial statements from the beneficiary concerned. The coordinator must include them in the next periodic report after the suspension is lifted or — if suspension is not lifted before the end of the action — in the last periodic report.

The beneficiaries may suspend implementation of the action (see Article 49.1) or terminate the Agreement or the participation of the beneficiary concerned (see Article 50.1 and 50.2).

ARTICLE 49 — SUSPENSION OF THE ACTION IMPLEMENTATION

49.1 Suspension of the action implementation, by the beneficiaries

49.1.1 Conditions

The beneficiaries may suspend implementation of the action or any part of it, if exceptional circumstances — in particular *force majeure* (see Article 51) — make implementation impossible or excessively difficult.

49.1.2 Procedure

The coordinator must immediately formally notify to the Agency the suspension (see Article 52), stating:

- the reasons why and
- the expected date of resumption.

The suspension will **take effect** the day this notification is received by the Agency.

Once circumstances allow for implementation to resume, the coordinator must immediately formally notify the Agency and request an **amendment** of the Agreement to set the date on which the action will be resumed, extend the duration of the action and make other changes necessary to adapt the action to the new situation (see Article 55) — unless the Agreement or the participation of a beneficiary has been terminated (see Article 50).

The suspension will be **lifted** with effect from the resumption date set out in the amendment. This date may be before the date on which the amendment enters into force.

Costs incurred during suspension of the action implementation are not eligible (see Article 6).

49.2 Suspension of the action implementation, by the Agency

49.2.1 Conditions

The Agency may suspend implementation of the action or any part of it, if:

- (a) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed or is suspected of having committed:
 - (i) substantial errors, irregularities or fraud or
 - (ii) serious breach of obligations under the Agreement or during the award procedure (including improper implementation of the action, submission of false information, failure to provide required information, breach of ethical principles);
- (b) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2), or

(c) the action is suspected of having lost its scientific or technological relevance.

49.2.2 Procedure

Before suspending implementation of the action, the Agency will formally notify the coordinator or beneficiary concerned:

- informing it of its intention to suspend the implementation and the reasons why and
- inviting it to submit observations within 30 days of receiving notification.

If the Agency does not receive observations or decides to pursue the procedure despite the observations it has received, it will formally notify **confirmation** of the suspension. Otherwise, it will formally notify that the procedure is not continued.

The suspension will **take effect** five days after confirmation notification is received (or on a later date specified in the notification).

It will be **lifted** if the conditions for resuming implementation of the action are met.

The coordinator or beneficiary concerned will be formally notified of the lifting and the Agreement will be **amended** to set the date on which the action will be resumed, extend the duration of the action and make other changes necessary to adapt the action to the new situation (see Article 55) — unless the Agreement has already been terminated (see Article 50).

The suspension will be lifted with effect from the resumption date set out in the amendment. This date may be before the date on which the amendment enters into force.

Costs incurred during suspension are not eligible (see Article 6).

The beneficiaries may not claim damages due to suspension by the Agency (see Article 46).

Suspension of the action implementation does not affect the Agency's right to terminate the Agreement or participation of a beneficiary (see Article 50), reduce the grant or recover amounts unduly paid (see Articles 43 and 44).

ARTICLE 50 — TERMINATION OF THE AGREEMENT OR OF THE PARTICIPATION OF ONE OR MORE BENEFICIARIES

50.1 Termination of the Agreement, by the beneficiaries

50.1.1 Conditions and procedure

The beneficiaries may terminate the Agreement.

The coordinator must formally notify termination to the Agency (see Article 52), stating:

- the reasons why and
- the date the termination will take effect. This date must be after the notification.

If no reasons are given or if the Agency considers the reasons do not justify termination, the Agreement will be considered to have been '**terminated improperly**'.

The termination will **take effect** on the day specified in the notification.

50.1.2 Effects

The coordinator must — within 60 days from when termination takes effect — submit:

- (i) a periodic report (for the open reporting period until termination; see Article 20.3) and
- (ii) the final report (see Article 20.4).

If the Agency does not receive the reports within the deadline (see above), only costs which are included in an approved periodic report will be taken into account.

The Agency will **calculate** the final grant amount (see Article 5.3) and the balance (see Article 21.4) on the basis of the reports submitted. Only costs incurred until termination are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

Improper termination may lead to a reduction of the grant (see Article 43).

After termination, the beneficiaries' obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

50.2 Termination of the participation of one or more beneficiaries, by the beneficiaries

50.2.1 Conditions and procedure

The participation of one or more beneficiaries may be terminated by the coordinator, on request of the beneficiary concerned or on behalf of the other beneficiaries.

The coordinator must formally notify termination to the Agency (see Article 52) and inform the beneficiary concerned.

If the coordinator's participation is terminated without its agreement, the formal notification must be done by another beneficiary (acting on behalf of the other beneficiaries).

The notification must include:

- the reasons why;
- the opinion of the beneficiary concerned (or proof that this opinion has been requested in writing);
- the date the termination takes effect. This date must be after the notification, and
- a request for amendment (see Article 55), with a proposal for reallocation of the tasks and the estimated budget of the beneficiary concerned (see Annexes 1 and 2) and, if necessary, the addition of one or more new beneficiaries (see Article 56). If termination takes effect after the period set out in Article 3, no request for amendment must be included unless the beneficiary concerned is the coordinator. In this case, the request for amendment must propose a new coordinator.

If this information is not given or if the Agency considers that the reasons do not justify termination, the participation will be considered to have been **terminated improperly**.

The termination will **take effect** on the day specified in the notification.

50.2.2 Effects

The coordinator must — within 30 days from when termination takes effect — submit:

- (i) a report on the distribution of payments to the beneficiary concerned and
- (ii) if termination takes effect during the period set out in Article 3, a ‘**termination report**’ from the beneficiary concerned, for the open reporting period until termination, containing an overview of the progress of the work, an overview of the use of resources, the individual financial statement and, if applicable, the certificate on the financial statement (see Articles 20.3 and 20.4).

The information in the termination report must also be included in the periodic report for the next reporting period (see Article 20.3).

If the request for amendment is rejected by the Agency (because it calls into question the decision awarding the grant or breaches the principle of equal treatment of applicants), the Agreement may be terminated according to Article 50.3.1(c).

If the request for amendment is accepted by the Agency, the Agreement is **amended** to introduce the necessary changes (see Article 55).

The Agency will — on the basis of the periodic reports, the termination report and the report on the distribution of payments — **calculate** the amount which is due to the beneficiary and if the (pre-financing and interim) payments received by the beneficiary exceed this amount.

The **amount which is due** is calculated in the following steps:

Step 1 — Application of the reimbursement rate to the eligible costs

The grant amount for the beneficiary is calculated by applying the reimbursement rate(s) to the total eligible costs declared by the beneficiary in the termination report and approved by the Agency.

Only costs incurred by the beneficiary concerned until termination takes effect are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

Step 2 — Reduction due to substantial errors, irregularities or fraud or serious breach of obligations

In case of a reduction (see Article 43), the Agency will calculate the reduced grant amount for the beneficiary by deducting the amount of the reduction (calculated in proportion to the seriousness of the errors, irregularities or fraud or breach of obligations, in accordance with Article 43.2) from the grant amount for the beneficiary.

If the payments received **exceed the amounts due**:

- if termination takes effect during the period set out in Article 3 and the request for amendment is accepted, the beneficiary concerned must repay to the coordinator the amount

unduly received. The Agency will formally notify the amount unduly received and request the beneficiary concerned to repay it to the coordinator within 30 days of receiving notification. If it does not repay the coordinator, the Agency will draw upon the Guarantee Fund to pay the coordinator and then notify a **debit note** on behalf of the Guarantee Fund to the beneficiary concerned (see Article 44);

- in all other cases, in particular if termination takes effect after the period set out in Article 3, the Agency will formally notify a **debit note** to the beneficiary concerned. If payment is not made by the date in the debit note, the Guarantee Fund will pay to the Agency the amount due and the Agency will notify a debit note on behalf of the Guarantee Fund to the beneficiary concerned (see Article 44);
- if the beneficiary concerned is the former coordinator, it must repay the new coordinator according to the procedure above, unless:
 - termination takes effect after an interim payment and
 - the former coordinator has not distributed amounts received as pre-financing or interim payments (see Article 21.7).

In this case, the Agency will formally notify a **debit note** to the former coordinator. If payment is not made by the date in the debit note, the Guarantee Fund will pay to the Agency the amount due. The Agency will then pay the new coordinator and notify a debit note on behalf of the Guarantee Fund to the former coordinator (see Article 44).

If the payments received **do not exceed the amounts due**: amounts owed to the beneficiary concerned will be included in the next interim or final payment.

If the Agency does not receive the termination report within the deadline (see above), only costs included in an approved periodic report will be taken into account.

If the Agency does not receive the report on the distribution of payments within the deadline (see above), it will consider that:

- the coordinator did not distribute any payment to the beneficiary concerned and that
- the beneficiary concerned must not repay any amount to the coordinator.

Improper termination may lead to a reduction of the grant (see Article 43) or termination of the Agreement (see Article 50).

After termination, the concerned beneficiary's obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

50.3 Termination of the Agreement or the participation of one or more beneficiaries, by the Agency

50.3.1 Conditions

The Agency may terminate the Agreement or the participation of one or more beneficiaries, if:

- (a) one or more beneficiaries do not accede to the Agreement (see Article 56);

- (b) a change to their legal, financial, technical, organisational or ownership situation is likely to substantially affect or delay the implementation of the action or calls into question the decision to award the grant;
- (c) following termination of participation for one or more beneficiaries (see above), the necessary changes to the Agreement would call into question the decision awarding the grant or breach the principle of equal treatment of applicants (see Article 55);
- (d) implementation of the action is prevented by force majeure (see Article 51) or suspended by the coordinator (see Article 49.1) and either:
 - (i) resumption is impossible, or
 - (ii) the necessary changes to the Agreement would call into question the decision awarding the grant or breach the principle of equal treatment of applicants;
- (e) a beneficiary is declared bankrupt, being wound up, having its affairs administered by the courts, has entered into an arrangement with creditors, has suspended business activities, or is subject to any other similar proceedings or procedures under national law;
- (f) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has been found guilty of professional misconduct, proven by any means;
- (g) a beneficiary does not comply with the applicable national law on taxes and social security;
- (h) the action has lost scientific or technological relevance;
- (i) not applicable;
- (j) not applicable;
- (k) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed fraud, corruption, or is involved in a criminal organisation, money laundering or any other illegal activity;
- (l) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed:
 - (i) substantial errors, irregularities or fraud or
 - (ii) serious breach of obligations under the Agreement or during the award procedure (including improper implementation of the action, submission of false information, failure to provide required information, breach of ethical principles);
- (m) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2);
- (n) despite a specific request by the Agency, a beneficiary does not request — through the coordinator — an amendment to the Agreement to end the participation of one of its linked

third parties or international partners that is in one of the situations under points (e), (f), (g), (k), (l) or (m) and to reallocate its tasks.

50.3.2 Procedure

Before terminating the Agreement or participation of one or more beneficiaries, the Agency will formally notify the coordinator or beneficiary concerned:

- informing it of its intention to terminate and the reasons why and
- inviting it, within 30 days of receiving notification, to submit observations and — in case of Point (l.ii) above — to inform the Agency of the measures to ensure compliance with the obligations under the Agreement.

If the Agency does not receive observations or decides to pursue the procedure despite the observations it has received, it will formally notify to the coordinator or beneficiary concerned **confirmation** of the termination and the date it will take effect. Otherwise, it will formally notify that the procedure is not continued.

The termination will **take effect**:

- for terminations under Points (b), (c), (e), (g), (h), (j), (l.ii) and (n) above: on the day specified in the notification of the confirmation (see above);
- for terminations under Points (a), (d), (f), (i), (k), (l.i) and (m) above: on the day after the notification of the confirmation is received.

50.3.3 Effects

(a) for **termination of the Agreement**:

The coordinator must — within 60 days from when termination takes effect — submit:

- (i) a periodic report (for the last open reporting period until termination; see Article 20.3) and
- (ii) a final report (see Article 20.4).

If the Agreement is terminated for breach of the obligation to submit reports (see Articles 20.8 and 50.3.1(l)), the coordinator may not submit any reports after termination.

If the Agency does not receive the reports within the deadline (see above), only costs which are included in an approved periodic report will be taken into account.

The Agency will **calculate** the final grant amount (see Article 5.3) and the balance (see Article 21.4) on the basis of the reports submitted. Only costs incurred until termination takes effect are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

This does not affect the Agency's right to reduce the grant (see Article 43) or to impose administrative sanctions (Article 45).

The beneficiaries may not claim damages due to termination by the Agency (see Article 46).

After termination, the beneficiaries' obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

(b) for **termination of the participation of one or more beneficiaries**:

The coordinator must — within 60 days from when termination takes effect — submit:

- (i) a report on the distribution of payments to the beneficiary concerned;
- (ii) a request for amendment (see Article 55), with a proposal for reallocation of the tasks and estimated budget of the beneficiary concerned (see Annexes 1 and 2) and, if necessary, the addition of one or more new beneficiaries (see Article 56). If termination is notified after the period set out in Article 3, no request for amendment must be submitted unless the beneficiary concerned is the coordinator. In this case the request for amendment must propose a new coordinator, and
- (iii) if termination takes effect during the period set out in Article 3, a **termination report** from the beneficiary concerned, for the open reporting period until termination, containing an overview of the progress of the work, an overview of the use of resources, the individual financial statement and, if applicable, the certificate on the financial statement (see Article 20).

The information in the termination report must also be included in the periodic report for the next reporting period (see Article 20.3).

If the request for amendment is rejected by the Agency (because it calls into question the decision awarding the grant or breaches the principle of equal treatment of applicants), the Agreement may be terminated according to Article 50.3.1(c).

If the request for amendment is accepted by the Agency, the Agreement is **amended** to introduce the necessary changes (see Article 55).

The Agency will — on the basis of the periodic reports, the termination report and the report on the distribution of payments — **calculate** the amount which is due to the beneficiary and if the (pre-financing and interim) payments received by the beneficiary exceed this amount.

The **amount which is due** is calculated in the following steps:

Step 1 — Application of the reimbursement rate to the eligible costs

The grant amount for the beneficiary is calculated by applying the reimbursement rate(s) to the total eligible costs declared by the beneficiary in the termination report and approved by the Agency.

Only costs incurred by the beneficiary concerned until termination takes effect are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

Step 2 — Reduction due to substantial errors, irregularities or fraud or serious breach of obligations

In case of a reduction (see Article 43), the Agency will calculate the reduced

grant amount for the beneficiary by deducting the amount of the reduction (calculated in proportion to the seriousness of the errors, irregularities or fraud or breach of obligations, in accordance with Article 43.2) from the grant amount for the beneficiary.

If the payments received **exceed the amounts due**:

- if termination takes effect during the period set out in Article 3 and the request for amendment is accepted, the beneficiary concerned must repay to the coordinator the amount unduly received. The Agency will formally notify the amount unduly received and request the beneficiary concerned to repay it to the coordinator within 30 days of receiving notification. If it does not repay the coordinator, the Agency will draw upon the Guarantee Fund to pay the coordinator and then notify a **debit note** on behalf of the Guarantee Fund to the beneficiary concerned (see Article 44);
- in all other cases, in particular if termination takes effect after the period set out in Article 3, the Agency will formally notify a **debit note** to the beneficiary concerned. If payment is not made by the date in the debit note, the Guarantee Fund will pay to the Agency the amount due and the Agency will notify a debit note on behalf of the Guarantee Fund to the beneficiary concerned (see Article 44);
- if the beneficiary concerned is the former coordinator, it must repay the new coordinator according to the procedure above, unless:
 - termination takes effect after an interim payment and
 - the former coordinator has not distributed amounts received as pre-financing or interim payments (see Article 21.7).

In this case, the Agency will formally notify a **debit note** to the former coordinator. If payment is not made by the date in the debit note, the Guarantee Fund will pay to the Agency the amount due. The Agency will then pay the new coordinator and notify a debit note on behalf of the Guarantee Fund to the former coordinator (see Article 44).

If the payments received **do not exceed the amounts due**: amounts owed to the beneficiary concerned will be included in the next interim or final payment.

If the Agency does not receive the termination report within the deadline (see above), only costs included in an approved periodic report will be taken into account.

If the Agency does not receive the report on the distribution of payments within the deadline (see above), it will consider that:

- the coordinator did not distribute any payment to the beneficiary concerned and that
- the beneficiary concerned must not repay any amount to the coordinator.

After termination, the concerned beneficiary's obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

SECTION 4 FORCE MAJEURE

ARTICLE 51 — FORCE MAJEURE

‘Force majeure’ means any situation or event that:

- prevents either party from fulfilling their obligations under the Agreement,
- was unforeseeable, exceptional situation and beyond the parties’ control,
- was not due to error or negligence on their part (or on the part of third parties involved in the action), and
- proves to be inevitable in spite of exercising all due diligence.

The following cannot be invoked as force majeure:

- any default of a service, defect in equipment or material or delays in making them available, unless they stem directly from a relevant case of force majeure,
- labour disputes or strikes, or
- financial difficulties.

Any situation constituting force majeure must be formally notified to the other party without delay, stating the nature, likely duration and foreseeable effects.

The parties must immediately take all the necessary steps to limit any damage due to force majeure and do their best to resume implementation of the action as soon as possible.

The party prevented by force majeure from fulfilling its obligations under the Agreement cannot be considered in breach of them.

CHAPTER 7 FINAL PROVISIONS

ARTICLE 52 — COMMUNICATION BETWEEN THE PARTIES

52.1 Form and means of communication

Communication under the Agreement (information, requests, submissions, ‘formal notifications’, etc.) must:

- be made in writing and
- bear the number of the Agreement.

All communication must be made through the Participant Portal **electronic** exchange system and using the forms and templates provided there.

If— after the payment of the balance — the Agency finds that a formal notification was not accessed, a second formal notification will be made by registered post with proof of delivery (‘formal notification on **paper**’). Deadlines will be calculated from the moment of the second notification.

Communications in the electronic exchange system must be made by persons authorised according to

the Participant Portal Terms & Conditions. For naming the authorised persons, each beneficiary must have designated — before the signature of this Agreement — a ‘legal entity appointed representative (LEAR)’. The role and tasks of the LEAR are stipulated in his/her appointment letter (see Participant Portal Terms & Conditions).

If the electronic exchange system is temporarily unavailable, instructions will be given on the Agency and Commission websites.

52.2 Date of communication

Communications are considered to have been made when they are sent by the sending party (i.e. on the date and time they are sent through the electronic exchange system).

Formal notifications through the **electronic** exchange system are considered to have been made when they are received by the receiving party (i.e. on the date and time of acceptance by the receiving party, as indicated by the time stamp). A formal notification that has not been accepted within 10 days after sending is considered to have been accepted.

Formal notifications **on paper** sent by **registered post** with proof of delivery (only after the payment of the balance) are considered to have been made on either:

- the delivery date registered by the postal service or
- the deadline for collection at the post office.

If the electronic exchange system is temporarily unavailable, the sending party cannot be considered in breach of its obligation to send a communication within a specified deadline.

52.3 Addresses for communication

The **electronic** exchange system must be accessed via the following URL:

<https://ec.europa.eu/research/participants/portal/desktop/en/projects/>

The Agency will formally notify the coordinator and beneficiaries in advance any changes to this URL.

Formal notifications on paper (only after the payment of the balance) addressed **to the Agency** must be sent to the official mailing address indicated on the Agency’s website.

Formal notifications on paper (only after the payment of the balance) addressed **to the beneficiaries** must be sent to their legal address as specified in the Participant Portal Beneficiary Register.

ARTICLE 53 — INTERPRETATION OF THE AGREEMENT

53.1 Precedence of the Terms and Conditions over the Annexes

The provisions in the Terms and Conditions of the Agreement take precedence over its Annexes.

Annex 2 takes precedence over Annex 1.

53.2 Privileges and immunities

Not applicable

ARTICLE 54 — CALCULATION OF PERIODS, DATES AND DEADLINES

In accordance with Regulation No 1182/71³⁰, periods expressed in days, months or years are calculated from the moment the triggering event occurs.

The day during which that event occurs is not considered as falling within the period.

ARTICLE 55 — AMENDMENTS TO THE AGREEMENT

55.1 Conditions

The Agreement may be amended, unless the amendment entails changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

Amendments may be requested by any of the parties.

55.2 Procedure

The party requesting an amendment must submit a request for amendment signed in the electronic exchange system (see Article 52).

The coordinator submits and receives requests for amendment on behalf of the beneficiaries (see Annex 3).

If a change of coordinator is requested without its agreement, the submission must be done by another beneficiary (acting on behalf of the other beneficiaries).

The request for amendment must include:

- the reasons why;
- the appropriate supporting documents, and
- for a change of coordinator without its agreement: the opinion of the coordinator (or proof that this opinion has been requested in writing).

The Agency may request additional information.

If the party receiving the request agrees, it must sign the amendment in the electronic exchange system within 45 days of receiving notification (or any additional information the Agency has requested). If it does not agree, it must formally notify its disagreement within the same deadline. The deadline may be extended, if necessary for the assessment of the request. If no notification is received within the deadline, the request is considered to have been rejected

An amendment **enters into force** on the day of the signature of the receiving party.

³⁰ Regulation (EEC, Euratom) No 1182/71 of the Council of 3 June 1971 determining the rules applicable to periods, dates and time-limits (OJ L 124, 8.6.1971, p. 1).

An amendment **takes effect** on the date agreed by the parties or, in the absence of such an agreement, on the date on which the amendment enters into force.

ARTICLE 56 — ACCESSION TO THE AGREEMENT

56.1 Accession of the beneficiaries mentioned in the Preamble

The other beneficiaries must accede to the Agreement by signing the Accession Form (see Annex 3) in the electronic exchange system (see Article 52) within 30 days after its entry into force (see Article 58).

They will assume the rights and obligations under the Agreement with effect from the date of its entry into force (see Article 58).

If a beneficiary does not accede to the Agreement within the above deadline, the coordinator must — within 30 days — request an amendment to make any changes necessary to ensure proper implementation of the action. This does not affect the Agency's right to terminate the Agreement (see Article 50).

56.2 Addition of new beneficiaries

In justified cases, the beneficiaries may request the addition of a new beneficiary.

For this purpose, the coordinator must submit a request for amendment in accordance with Article 55. It must include an Accession Form (see Annex 3) signed by the new beneficiary in the electronic exchange system (see Article 52).

New beneficiaries must assume the rights and obligations under the Agreement with effect from the date of their accession specified in the Accession Form (see Annex 3).

ARTICLE 57 — APPLICABLE LAW AND SETTLEMENT OF DISPUTES

57.1 Applicable law

The Agreement is governed by the applicable EU law, supplemented if necessary by the law of Belgium.

57.2 Dispute settlement

If a dispute concerning the interpretation, application or validity of the Agreement cannot be settled amicably, the General Court — or, on appeal, the Court of Justice of the European Union — has sole jurisdiction. Such actions must be brought under Article 272 of the Treaty on the Functioning of the EU (TFEU).

As an exception, if such a dispute is between the Agency and TEL AVIV YAFO MUNICIPALITY, TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY, the competent Belgian courts have sole jurisdiction.

As an exception, for the following beneficiaries:

- NINGBO SUPPLY CHAIN INNOVATION INSTITUT CHINA

- NINGBO UNIVERSITY OF TECHNOLOGY

such disputes must — if they cannot be settled amicably — be referred to arbitration. Each party must formally notify to the other party its intention of resorting to arbitration and the identity of the arbitrator. The Permanent Court of Arbitration Optional Rules for Arbitration Involving International Organisations and States in force at the date of entry into force of the Agreement will apply. The appointing authority will be the Secretary-General of the Permanent Court of Arbitration following a written request submitted by either party. The arbitration proceedings must take place in Brussels and the language used in the arbitral proceedings will be English. The arbitral award will be binding on all parties and will not be subject to appeal.

If a dispute concerns administrative sanctions, offsetting or an enforceable decision under Article 299 TFEU (see Articles 44, 45 and 46), the beneficiaries must bring action before the General Court — or, on appeal, the Court of Justice of the European Union — under Article 263 TFEU. Actions against offsetting and enforceable decisions must be brought against the Commission (not against the Agency).

ARTICLE 58 — ENTRY INTO FORCE OF THE AGREEMENT

The Agreement will enter into force on the day of signature by the Agency or the coordinator, depending on which is later.

SIGNATURES

For the coordinator

For the Agency



EUROPEAN COMMISSION
Innovation and Networks Executive Agency
Transport Research



ANNEX 1 (part A)

Research and Innovation action

NUMBER — 814910 — SPROUT

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1.1. The project summary

Project Number ¹	814910	Project Acronym ²	SPROUT
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One form per project

General information

Project title ³	Sustainable Policy RespOnse to Urban mobility Transition
Starting date ⁴	01/09/2019
Duration in months ⁵	36
Call (part) identifier ⁶	H2020-MG-2018-TwoStages
Topic	LC-MG-1-3-2018 Harnessing and understanding the impacts of changes in urban mobility on policy making by city-led innovation for sustainable urban mobility
Fixed EC Keywords	International cooperation, Traffic demand management, Mobility management, Freight and logistics, Public transport, Urban transport
Free keywords	City-led innovative policy response; Passenger and freight urban mobility; Urban Mobility Policy; Emerging mobility solutions

Abstract ⁷

SPROUT provides a new city-led innovative and data driven policy response to address the impacts of the emerging mobility patterns, digitally-enabled operating & business models, and transport users' needs. Previously tested and implemented policy responses employing access restrictions, congestion charging or infrastructure provision, seem today, unable to adequately address the changes underway in the urban mobility scene. Furthermore, any policy responses should take into all stages of the policy lifecycle and should have an eye not only to the present but also to the future. Therefore, starting from an understanding of the transition taking place in urban mobility, SPROUT will define the resultant impacts at the sustainability and policy level, will harness these through a city-led innovative policy response, will build cities' data-driven capacity to identify, track and deploy innovative urban mobility solutions, and will navigate future policy by channelling project results at local, regional, national and EU level. To achieve its goals, SPROUT will employ 6 city pilots (including China) with real-life policy challenges faced as a result of urban mobility transition in both passenger & freight, covering urban and peri-urban areas, different emerging mobility solutions, and context requirements. The project pays special attention to the needs of vulnerable groups and users with different cultural backgrounds, taking also into account gender issues. SPROUT ensures an active participation of numerous representatives from authorities of small & medium-sized cities through a 3-layer structure of cities' engagement approach, and through the creation of an Open Innovation Community on Urban Mobility Policy.

1.2. List of Beneficiaries

 Associated with document Ref. Ares(2019)2571476 - 12/04/2019

Project Number ¹	814910	Project Acronym ²	SPROUT
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List of Beneficiaries

No	Name	Short name	Country	Project entry month ⁸	Project exit month
1	FUNDACION ZARAGOZA LOGISTICS CENTER	ZLC	Spain	1	36
2	UNIVERSIDAD POLITECNICA DE MADRID	UPM	Spain	1	36
3	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	CERTH	Greece	1	36
4	VRIJE UNIVERSITEIT BRUSSEL	VUB	Belgium	1	36
5	POLIS - PROMOTION OF OPERATIONAL LINKS WITH INTEGRATED SERVICES, ASSOCIATION INTERNATIONALE	POLIS	Belgium	1	36
6	WUPPERTAL INSTITUT FUR KLIMA, UMWELT, ENERGIE GMBH	WI	Germany	1	36
7	AYUNTAMIENTO DE VALENCIA	VALENCIA	Spain	1	36
8	FUNDACION DE LA COMUNIDAD VALENCIANA PARA LA INVESTIGACION, PROMOCION Y ESTUDIOS COMERCIALES DE VALENCIAPORT	VPF	Spain	1	36
9	FERROCARRILS DE LA GENERALITAT VALENCIANA	FGV	Spain	1	36
10	NINGBO SUPPLY CHAIN INNOVATION INSTITUT CHINA	NSCIC	China (People's Republic of)	1	36
11	NINGBO UNIVERSITY OF TECHNOLOGY	NBUT	China (People's Republic of)	1	36
12	BKK BUDAPESTI KOZLEKEDESI KOZPONT ZARTKORUEN MUKODO RESZVENYTARSASAG	BKK	Hungary	1	36
13	BUDAPEST KOZUT ZARTKORUEN MUKODO RESZVENYTARSASAG	BPKOZUT	Hungary	1	36
14	COMUNE DI PADOVA	CDPA	Italy	1	36
15	VENICE INTERNATIONAL UNIVERSITY	VIU	Italy	1	36
16	TEL AVIV YAFO MUNICIPALITY	TLV	Israel	1	36
17	TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY	TECHNION	Israel	1	36
18	INSTYTUT LOGISTYKI I MAGAZYNOWANIA	ILiM	Poland	1	36
19	MIASTO KALISZ	KALISZ	Poland	1	36
20	FUNDACJA KALISKI INKUBATOR PRZEDSIE BIORCZOSCI	KALISZBIF	Poland	1	36

1.2. List of Beneficiaries

No	Name	Short name	Country	Project entry month ⁸	Project exit month
21	MUNICIPALITY OF IOANNINA	MoI	Greece	1	36
22	STAD MECHELEN	MECH	Belgium	1	36
23	MUNICIPIUL ARAD	ARAD	Romania	1	36
24	GEMEENTE 'S-HERTOGENBOSCH	HTB	Netherlands	1	36
25	REGION ILE DE FRANCE	IDFrance	France	1	36
26	CAMARA MUNICIPAL DE ALMADA	CMA	Portugal	1	36
27	AGENCIA MUNICIPAL DE ENERGIA DE ALMADA	AGENEAL	Portugal	1	36
28	WEST MIDLANDS COMBINED AUTHORITY	WMCA	United Kingdom	1	36
29	GOTEBORGS KOMMUN	GOT	Sweden	1	36

1.3. Workplan Tables - Detailed implementation

1.3.1. WT1 List of work packages

WP Number ⁹	WP Title	Lead beneficiary ¹⁰	Person-months ¹¹	Start month ¹²	End month ¹³
WP1	Ethics requirements	1 - ZLC	N/A	1	36
WP2	Understanding transition in urban mobility	4 - VUB	31.25	1	5
WP3	Determining the impacts of emerging urban mobility environments	4 - VUB	59.75	5	12
WP4	Pilots' setup, running & testing	1 - ZLC	177.25	8	20
WP5	Formulating a city-led innovative policy response	5 - POLIS	75.00	21	26
WP6	Building cities' policy making capacity	6 - WI	119.00	21	33
WP7	Navigating future policy	3 - CERTH	33.50	27	34
WP8	Project outcomes' validation, transfer & exploitation	5 - POLIS	67.00	1	36
WP9	Project management	1 - ZLC	42.50	1	36
Total			605.25		

1.3.2. WT2 list of deliverables

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D1.1	NEC - Requirement No. 1	WP1	1 - ZLC	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6
D1.2	H - Requirement No. 2	WP1	1 - ZLC	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6
D1.3	NEC - Requirement No. 3	WP1	1 - ZLC	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6
D2.1	Urban mobility transition inventory	WP2	4 - VUB	Report	Public	2
D2.2	Current state of urban mobility	WP2	4 - VUB	Report	Public	5
D2.3	Urban mobility transition drivers	WP2	4 - VUB	Report	Public	5
D3.1	City-specific future urban mobility scenarios	WP3	4 - VUB	Report	Public	6
D3.2	Sustainability impacts of city-specific scenarios	WP3	3 - CERTH	Report	Public	8
D3.3	Policy impacts of city-specific scenarios	WP3	6 - WI	Report	Public	9
D3.4	SPROUT narrative scenarios	WP3	4 - VUB	Report	Public	12
D4.1	Pilot evaluation framework	WP4	1 - ZLC	Report	Public	10
D4.2	Set-up report: Valencia pilot	WP4	8 - VPF	Report	Public	12
D4.3	Impact assessment and city-specific policy response: Valencia pilot	WP4	8 - VPF	Report	Public	20
D4.4	Set-up report: Padua pilot	WP4	15 - VIU	Report	Public	12

Deliverable Number¹⁴	Deliverable Title	WP number⁹	Lead beneficiary	Type¹⁵	Dissemination level¹⁶	Due Date (in months)¹⁷
D4.5	Impact assessment and city-specific policy response: Padua pilot	WP4	15 - VIU	Report	Public	20
D4.6	Set-up report: Kalisz pilot	WP4	18 - ILiM	Report	Public	12
D4.7	Impact assessment and city-specific policy response: Kalisz pilot	WP4	18 - ILiM	Report	Public	20
D4.8	Set-up report: Budapest pilot	WP4	12 - BKK	Report	Public	12
D4.9	Impact assessment and city-specific policy response: Budapest pilot	WP4	12 - BKK	Report	Public	20
D4.10	Set-up report: Tel Aviv pilot	WP4	17 - TECHNION	Report	Public	12
D4.11	Impact assessment and city-specific policy response: Tel Aviv pilot	WP4	17 - TECHNION	Report	Public	20
D4.12	Set-up report: Ningbo pilot	WP4	10 - NSCIIC	Report	Public	12
D4.13	Impact assessment and city-specific policy response: Ningbo pilot	WP4	10 - NSCIIC	Report	Public	20
D4.14	Policy implementation messages from cross-pilot results	WP4	1 - ZLC	Report	Public	20
D5.1	Validation of the pilot results' wider applicability	WP5	5 - POLIS	Report	Public	22
D5.2	Urban policy system dynamics model	WP5	3 - CERTH	Report	Public	24
D5.3	SPROUT city-led innovative policy response	WP5	5 - POLIS	Report	Public	26
D6.1	Urban mobility shared data space	WP6	6 - WI	Report	Public	29
D6.2	Evidence-based early policy alert & action tracking	WP6	3 - CERTH	Report	Public	31
D6.3	Urban policy toolbox	WP6	6 - WI	Report	Public	32
D6.4	eLearning course on early policy alert & action tracking	WP6	3 - CERTH	Websites, patents filling, etc.	Public	33

Deliverable Number¹⁴	Deliverable Title	WP number⁹	Lead beneficiary	Type¹⁵	Dissemination level¹⁶	Due Date (in months)¹⁷
D6.5	eLearning course on policy design, coalition & governance	WP6	6 - WI	Websites, patents filling, etc.	Public	33
D6.6	Webinars on SPROUT tools	WP6	3 - CERTH	Websites, patents filling, etc.	Public	33
D6.7	1st workshop on urban policy design, coalition building, governance, and policy packaging.	WP6	6 - WI	Websites, patents filling, etc.	Public	29
D6.8	2nd workshop on urban policy design, coalition building, governance, and policy packaging.	WP6	6 - WI	Websites, patents filling, etc.	Public	33
D7.1	SUMP-based policy response	WP7	3 - CERTH	Report	Public	30
D7.2	Urban Agenda policy briefs	WP7	6 - WI	Report	Public	30
D7.3	A European strategy to navigate urban mobility policy through transition	WP7	3 - CERTH	Report	Public	32
D7.4	EU, US, China international cooperation agenda on urban mobility policy	WP7	3 - CERTH	Report	Public	34
D8.1	OIC setup	WP8	2 - UPM	Report	Public	2
D8.2	OIC setup and achievements - 1st year status	WP8	2 - UPM	Report	Public	13
D8.3	OIC setup and achievements - 2nd year status	WP8	2 - UPM	Report	Public	25
D8.4	OIC setup and achievements - Final status	WP8	2 - UPM	Report	Public	36
D8.5	Validation strategy	WP8	6 - WI	Report	Public	6
D8.6	Dissemination/ communication strategy and dissemination plan	WP8	5 - POLIS	Report	Public	2
D8.7	Dissemination/ communication strategy and dissemination plan - 1st year status	WP8	5 - POLIS	Report	Public	12
D8.8	Dissemination/ communication strategy	WP8	5 - POLIS	Report	Public	24

Deliverable Number¹⁴	Deliverable Title	WP number⁹	Lead beneficiary	Type¹⁵	Dissemination level¹⁶	Due Date (in months)¹⁷
	and dissemination plan - 2nd year status					
D8.9	Dissemination/ communication strategy and dissemination plan - final status	WP8	5 - POLIS	Report	Public	36
D8.10	SPROUT Website	WP8	5 - POLIS	Websites, patents filling, etc.	Public	3
D8.11	Project identity	WP8	5 - POLIS	Websites, patents filling, etc.	Public	2
D8.12	Dissemination material	WP8	5 - POLIS	Websites, patents filling, etc.	Public	2
D8.13	SPROUT results brochure	WP8	5 - POLIS	Websites, patents filling, etc.	Public	35
D8.14	International transfer activities	WP8	5 - POLIS	Report	Public	36
D8.15	Exploitation strategy	WP8	5 - POLIS	Report	Public	12
D8.16	Exploitation strategy - 1st year status	WP8	5 - POLIS	Report	Public	24
D8.17	Exploitation strategy - 2nd year status	WP8	5 - POLIS	Report	Public	36
D9.1	Project Management Plan	WP9	1 - ZLC	Report	Public	2
D9.2	Project Management Plan - 1st reporting period status	WP9	1 - ZLC	Report	Public	18
D9.3	Project Management Plan - 2nd reporting period status	WP9	1 - ZLC	Report	Public	36
D9.4	Data Management Plan (DMP)	WP9	1 - ZLC	ORDP: Open Research Data Pilot	Public	6
D9.5	Risk & Quality Assessment Report	WP9	3 - CERTH	Report	Public	6
D9.6	Project final report	WP9	3 - CERTH	Report	Public	36
D9.7	SPROUT's impact assessment	WP9	1 - ZLC	Report	Public	36

1.3.3. WT3 Work package descriptions

Work package number ⁹	WP1	Lead beneficiary ¹⁰	1 - ZLC
Work package title	Ethics requirements		
Start month	1	End month	36

Objectives

The objective is to ensure compliance with the 'ethics requirements' set out in this work package.

Description of work and role of partners

WP1 - Ethics requirements [Months: 1-36]

ZLC

This work package sets out the 'ethics requirements' that the project must comply with.

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D1.1	NEC - Requirement No. 1	1 - ZLC	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6
D1.2	H - Requirement No. 2	1 - ZLC	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6
D1.3	NEC - Requirement No. 3	1 - ZLC	Ethics	Confidential, only for members of the consortium (including the Commission Services)	6

Description of deliverables

The 'ethics requirements' that the project must comply with are included as deliverables in this work package.

D1.1 : NEC - Requirement No. 1 [6]

The host institution must confirm that it has appointed a Data Protection Officer (DPO) and the contact details of the DPO are made available to all data subjects involved in the research. For host institutions not required to appoint a DPO under the GDPR a detailed data protection policy for the project must be specified in the grant agreement. Justification for the processing of sensitive personal data must be included. The beneficiary must explain how all of the data they intend to process is relevant and limited to the purposes of the research project (in accordance with the 'data minimisation' principle). A description of the technical and organisational measures that will be implemented to safeguard the rights and freedoms of the data subjects/research participants must be specified. A description of the security measures that will be implemented to prevent unauthorised access to personal data or the equipment used for processing must be specified. In case personal data are transferred from the EU to a non-EU country or international organisation, confirmation that such transfers are in accordance with Chapter V of the General Data Protection Regulation 2016/679, must be specified. In case personal data are transferred from a non-EU country to

the EU (or another third state), confirmation that such transfers comply with the laws of the country in which the data was collected must be specified. Detailed information on the informed consent procedures in regard to data processing must be specified.

D1.2 : H - Requirement No. 2 [6]

The procedures and criteria that will be used to identify/recruit research participants must be clarified. The informed consent procedures that will be implemented for the participation of humans must be included. Templates of the informed consent/assent forms and information sheets (in language and terms intelligible to the participants) must be specified. The applicant must clarify whether children and/or adults unable to give informed consent will be involved and, if so, justification for their participation must be included. In case children and/or adults unable to give informed consent are involved, details on how the consent of the legal representatives (and assent, when applicable) will be acquired must be included. The applicant must clarify whether vulnerable individuals/groups will be involved, and the measures to protect them and minimise the risk of their stigmatisation must be included.

D1.3 : NEC - Requirement No. 3 [6]

In case activities undertaken in non-EU countries raise ethics issues, the applicants must ensure that the research conducted outside the EU is legal in at least one EU Member State. This must be specified.

Schedule of relevant Milestones

Milestone number¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
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Work package number ⁹	WP2	Lead beneficiary ¹⁰	4 - VUB
Work package title	Understanding transition in urban mobility		
Start month	1	End month	5

Objectives

1. to construct an inventory of the elements reflecting urban mobility transition by integrating experience and project results from the EU, China and the US
 2. to identify the current state of urban mobility in the SPROUT cities
 3. to define the drivers of urban mobility transition in the SPROUT cities
 4. to define the stakeholders affected per impact area.
- The results of this work package will be used to create the urban mobility scenarios in WP3, set up and evaluate the pilots in WP4 and define the variables in the urban policy system dynamics model in Task 5.2.

Description of work and role of partners

WP2 - Understanding transition in urban mobility [Months: 1-5]

VUB, ZLC, UPM, CERTH, POLIS, WI, VALENCIA, VPF, FGV, NSCIIC, NBUT, BKK, BPKOZUT, CDPA, VIU, TLV, TECHNION, ILiM, KALISZ, KALISZBIF, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT

Task 2.1 - Urban mobility transition inventory (M1-M2) – Participation: VUB (Leader), ZLC, CERTH, POLIS, WI

In order to be able to define urban mobility transition, first the elements that reflect the cities' current state, their expected future state and the transition from the first to the second, will be established and defined. An 'Urban mobility transition inventory', to be used for the subsequent tasks of this WP will be compiled with the following elements:

- Key Performance Indicators (KPIs) for defining the current and future state of urban mobility, with specific emphasis on quantitative indicators;
- drivers that influence the transition from the current to the future state (e.g. ageing, digitalisation, urbanisation etc.)
- possible impacts of the transition, covering all three dimensions of sustainability (economic, environmental, social)
- urban mobility policies employed so far to harness transition;
- urban mobility stakeholders affected by the transition, and especially those that either emerge for the first time or they assume different roles to their traditional ones.

The project team will align and integrate results from previous EU initiatives, as well as the experiences of the non-European SPROUT members from China and the US. The project team will use previous related results and current experiences, and specifically:

- the sustainable mobility indicators developed by the World Business Council for Sustainable Development (WBCSD)
- the CIVITAS sustainable mobility indicators ;
- Mobility4EU, MIND-SETS, TRANSFORuM and NOVELOG projects and the academic literature ;
- evidence for the potential impacts ;
- the urban mobility policies defined in relevant EC policy documents, complemented by the policies in place in the SPROUT cities (e.g. SUMP, pedestrian/cycling plans, public service regulations, etc.).

Task 2.2 – Current state of urban mobility (M3-M5) – Participation: VUB (Leader), ZLC, UPM, CERTH, POLIS, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC (MPLS), NSCIIC(NBCC).

Using the KPIs of the 'Urban mobility transition inventory', the project team will undertake a fact-based analysis of the current mobility situation of urban mobility in the 1st & 2nd layer SPROUT cities. Data sources to be used include local/regional transport models, planning documents, travel surveys, statistics of planning agencies, infrastructure managers and transport operators, traffic management data, open data, crowdsourcing etc. The data in each city will be benchmarked against other cities to establish the profile of each city in terms of the status of urban mobility.

Task 2.3 - Urban mobility transition drivers (M3-M5) – Participation: VUB (Leader), ZLC, UPM, CERTH, POLIS, WI, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC (MPLS), NSCIIC(NBCC).

Using the drivers of the 'Urban mobility transition inventory' from Task 2.1, the project team will define the specific transition drivers in the 1st & 2nd layer SPROUT cities. The driving forces cover external trends (e.g. ageing,

decarbonisation, digitalisation, etc.) as well as innovative transport solutions and policies that are currently emerging or are expected to mature during the timescale of analysis (2025/2030). The definition will be undertaken with the use of: (1) environmental technology and innovation scanning ; (2) expert interviews; (3) focus group discussions with local urban mobility stakeholders; (4) media analysis. The drivers will be grouped using the STEEP classification and will include both demand- (e.g. customer requirements) and supply- (e.g. mobility innovations) drivers. Furthermore, a stakeholder analysis will be performed, to understand which public and private stakeholder communities will be affected most by the transition drivers in the 1st and 2nd layer cities with specific attention to vulnerable groups. The analysis will be based on an online survey in the 1st and 2nd layer cities and on focus group discussions. The stakeholders identified will participate in further city-specific tasks such as the co-creation of scenarios (T3.1), stakeholder-based assessment of the prioritisation of alternative policy responses (T4.4), validation of pilots (T5.1), building cities' policy making capacity (T6.4).

Participation per Partner

Partner number and short name	WP2 effort
1 - ZLC	3.50
2 - UPM	3.00
3 - CERTH	1.75
4 - VUB	6.00
5 - POLIS	1.00
6 - WI	1.00
7 - VALENCIA	0.50
8 - VPF	0.50
9 - FGV	0.50
10 - NSCIIC	1.00
11 - NBUT	0.50
12 - BKK	0.50
13 - BPKOZUT	0.50
14 - CDPA	0.50
15 - VIU	0.50
16 - TLV	0.50
17 - TECHNION	0.50
18 - ILiM	0.50
19 - KALISZ	0.50
20 - KALISZBIF	0.50
21 - MoI	1.50
22 - MECH	0.50
23 - ARAD	1.50
24 - HTB	0.50
25 - IDFrance	1.50
26 - CMA	0.50
27 - AGENEAL	0.50

Partner number and short name	WP2 effort
28 - WMCA	0.50
29 - GOT	0.50
Total	31.25

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D2.1	Urban mobility transition inventory	4 - VUB	Report	Public	2
D2.2	Current state of urban mobility	4 - VUB	Report	Public	5
D2.3	Urban mobility transition drivers	4 - VUB	Report	Public	5

Description of deliverables

D2.1 (D4) - "Urban mobility transition inventory". This deliverable contains a catalogue of KPIs, drivers, impacts, policies and stakeholders in the context of urban mobility transitions in general. It presents the results of T2.1.
D2.2 (D5) - "Current state of urban mobility". This deliverable outlines the current state of urban mobility in the 1st and 2nd layer cities based on a fact-based analysis. It presents the results of T2.2.
D2.3 (D6) - "Urban mobility transition drivers". Overview of specific transition drivers in the 1st & 2nd layer SPROUT cities and the stakeholders affected. It presents the results of T2.3.

D2.1 : Urban mobility transition inventory [2]

This deliverable contains a catalogue of KPIs, drivers, impacts, policies and stakeholders in the context of urban mobility transitions in general. It presents the results of T2.1.

D2.2 : Current state of urban mobility [5]

This deliverable outlines the current state of urban mobility in the 1st and 2nd layer cities based on a fact-based analysis. It presents the results of T2.2.

D2.3 : Urban mobility transition drivers [5]

Overview of specific transition drivers in the 1st & 2nd layer SPROUT cities and the stakeholders affected. It presents the results of T2.3.

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	City profiles and transition drivers (1st & 2nd layer cities)	4 - VUB	5	Submitted reports to the EC (D2.1, D2.2 and D2.3)

Work package number ⁹	WP3	Lead beneficiary ¹⁰	4 - VUB
Work package title	Determining the impacts of emerging urban mobility environments		
Start month	5	End month	12

Objectives

1. To build city-specific future urban mobility scenarios for two time-horizons (2025, 2030) assuming no policy interventions.
 2. To define the expected sustainability impacts and policy impact of the scenarios.
 3. To define the expected impacts of the scenarios.
 These ‘Do-nothing’ scenarios will indicate the impact of no policy interventions and provide the basis of the setup of the pilots in the 1st layer cities as well as the impact assessment of alternative policy responses in WP4. It will also define the minimum data needs for the Urban mobility shared data space in T6.1.

Description of work and role of partners

WP3 - Determining the impacts of emerging urban mobility environments [Months: 5-12]
VUB, ZLC, UPM, CERTH, POLIS, WI, VALENCIA, VPF, FGV, NSCIIC, NBUT, BKK, BPKOZUT, CDPA, VIU, TLV, TECHNION, ILiM , KALISZ, KALISZBIF
 Task 3.1 – Co-creation of city-specific scenarios (M5-M6) – Participation: VUB (Leader), ZLC, CERTH, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, NSCIIC(NBCC).
 ‘Do-nothing’ scenarios for the 1st layer pilot cities will be co-created, with the involvement of the local stakeholders to depict plausible, probable and preferable future urban mobility environments, considering the current urban mobility environment, policies currently in effect assuming no further policy interventions and the transition drivers explored in WP2. The scenarios will be created using the following steps:
 - Task 3.1 will probably lead to a large number of drivers, therefore using all of them would lead to scenarios that are too complex and too blurred. To overcome this problem, key drivers will be selected by identifying the interactions between these drivers through an interaction analysis that will use expert opinions collected through a survey/interviews with local stakeholders to define the extent of direct relationship between pairs of drivers.
 - Alternative projections for the key drivers will be made for both timescales (how will the key drivers develop until 2025 and 2030?). The projections will be both likely outcomes and also extreme occurrences, helping the scenarios to cover all possible outcomes. The projections will be based on local planning documents, local transport models (where available) and expert forecast which will be collected through a questionnaire. The projections will be registered in a projection catalogue.
 - A cross-impact balance analysis will be carried out, where all pairs of drivers will be evaluated in terms of their compatibility. A panel of local stakeholders will evaluate the consistency of the key drivers at a workshop using a qualitative judgement scale that will be registered in a cross-impact matrix. Then the cross-impact balance analysis software will analyse the millions of mathematically possible bundles, eliminating those that show total inconsistencies toward its projections. The output of the software is a set of consistent scenarios, i.e. scenarios that do not have contradicting factors. The results are then discussed by the local experts and the logic of the scenarios produced are critically assessed and adjusted if necessary.
 - Based on the output of the cross-impact balance analysis, consistent bundles of driving factors will be combined into 2-4 preliminary scenarios, which is consistent with the number suggested by previous research . A textual description will be created for each scenario, that will describe how the key factors will develop during the timescale of the scenario to be used in tasks T3.2 and 3.4.
 The scenarios will be built for two time-horizons: 2025 (to support medium-term actions) and 2030 (in line with the 2030 Agenda for Sustainable Development). The methodology of the scenario building will be provided by VUB, while the local scientific partners will carry out the data collection and interviews/workshops.
 Task 3.2 – Sustainability impact analysis of city-specific scenarios (M7-M8) – Participation: CERTH (Leader), ZLC, VUB, POLIS, WI, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, NSCIIC(NBCC).
 For each pilot city, the expected sustainability impacts of the scenarios will be assessed, based on a consequence analysis in the context of the above identified scenarios. Opportunities and threats to each component of the urban

mobility system in each pilot city will be analysed with the local experts in a consequence matrix. Possible impacts include positive and negative outcomes in terms of the urban mobility system's economic, environmental and social sustainability.

Task 3.3 – Policy impact analysis of city-specific scenarios (M8-M9) – Participation: WI (Leader), ZLC, UPM, CERTH, VUB, POLIS, WI, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, NSCIIC(NBCC).

For each pilot city, the expected policy impacts of the realisation of the scenarios, will be assessed with the local experts. A consequence matrix will analyse the potential impact of each scenario on urban mobility policy. Policy impacts refer to the adequacy and effectiveness of the existing policy framework (do-nothing i.e. no new policies introduced) to enhance the scenarios' positive sustainability impacts and mitigate the negative ones. This task provides the starting point for the development of alternative policy responses to urban mobility innovations in T4.4.

Task 3.4 – Validation & development of narrative scenarios (M10-M12) – Participation: VUB (Leader), ZLC, UPM, POLIS, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, NSCIIC(NBCC).

The expected sustainability and policy impacts will be validated and revised by the local stakeholders during workshops to be undertaken in each pilot city by the local partners based on a methodology provided by the task leader. The validation will be facilitated with the use of creative techniques (e.g. storytelling, instant graphics etc.). After the validation, the final scenarios and their expected impacts will be created with narrative text and a visual panorama.

Participation per Partner

Partner number and short name	WP3 effort
1 - ZLC	5.00
2 - UPM	2.00
3 - CERTH	9.00
4 - VUB	13.00
5 - POLIS	1.00
6 - WI	3.50
7 - VALENCIA	1.75
8 - VPF	1.75
9 - FGV	1.75
10 - NSCIIC	3.50
11 - NBUT	1.75
12 - BKK	1.75
13 - BPKOZUT	1.75
14 - CDPA	1.75
15 - VIU	1.75
16 - TLV	1.75
17 - TECHNION	1.75
18 - ILiM	3.00
19 - KALISZ	1.75
20 - KALISZBIF	0.50

Partner number and short name	WP3 effort
Total	59.75

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D3.1	City-specific future urban mobility scenarios	4 - VUB	Report	Public	6
D3.2	Sustainability impacts of city-specific scenarios	3 - CERTH	Report	Public	8
D3.3	Policy impacts of city-specific scenarios	6 - WI	Report	Public	9
D3.4	SPROUT narrative scenarios	4 - VUB	Report	Public	12

Description of deliverables

D3.1 (D7) - "City-specific future urban mobility scenarios". The deliverable documents the scenario building process and describes the draft version of co-created scenarios for each pilot city. It presents the results of T3.1.

D3.2 (D8) - "Sustainability impacts of city-specific scenarios". The deliverable outlines the results of the consequence analysis for sustainability impacts. It presents the results of T3.2.

D3.3 (D9) - "Policy impacts of city-specific scenarios". The deliverable outlines the results of the consequence analysis for policy impacts. It presents the results of T3.3.

D3.4 (D10) - "SPROUT narrative scenarios". The final narrative scenarios for each pilot city are described and graphically presented. It presents the results of T3.4.

D3.1 : City-specific future urban mobility scenarios [6]

The deliverable documents the scenario building process and describes the draft version of co-created scenarios for each pilot city. It presents the results of T3.1.

D3.2 : Sustainability impacts of city-specific scenarios [8]

The deliverable outlines the results of the consequence analysis for sustainability impacts. It presents the results of T3.2.

D3.3 : Policy impacts of city-specific scenarios [9]

The deliverable outlines the results of the consequence analysis for policy impacts. It presents the results of T3.3.

D3.4 : SPROUT narrative scenarios [12]

The final narrative scenarios for each pilot city are described and graphically presented. It presents the results of T3.4.

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS2	SPROUT future mobility scenarios	4 - VUB	5	Submitted reports to the EC (D2.1, D2.2 and D2.3)

Work package number ⁹	WP4	Lead beneficiary ¹⁰	1 - ZLC
Work package title	Pilots' setup, running & testing		
Start month	8	End month	20

Objectives

1. To develop an evaluation framework to guide the project's pilot setup activities as well as process and outcome evaluation
2. To showcase the implementation of urban mobility policies in 4 European and 2 international pilot cities
3. To assess the economic, environmental & social impacts as well as the operational feasibility of the new mobility solutions and identify areas where policy intervention will be required
4. To develop an inventory of alternative policy responses per pilot and prioritise the ones to be tested
5. To test the prioritised policy responses per pilot and assess their impact in financial, environmental & social terms, for each urban stakeholder category
6. To draw policy implementation messages by explaining differences and commonalities among the pilot results and commonalities

The results of this work package (i.e. evaluation of the impact of city specific policy responses) will be used as an input for Task 5.1 where their transferability will be assessed to come to a city-led policy response and in the urban policy system dynamics model; in Task 5.2 to verify the interrelations among transition drivers and in T5.3 SPROUT city-led innovative policy response as a definition of the requirements of the cities.

Description of work and role of partners

WP4 - Pilots' setup, running & testing [Months: 8-20]

ZLC, CErTH, VUB, VALENCIA, VPF, FGV, NSCIIC, NBUT, BKK, BPKOZUT, CDPA, VIU, TLV, TECHNION, ILiM, KALISZ, KALISZBIF

Task 4.1 – Pilot evaluation framework (M8-M10) – Participation: ZLC (Leader), VUB, CErTH.

An evaluation plan will be developed guiding the project's pilot assessment activities (Tasks 4.3 & 4.4). The plan will be structured around two main pillars: (i) operational assessment of the pilot impacts (outcome evaluation); (ii) assessment of urban mobility policy responses in the pilots (process evaluation).

The evaluation plan will provide, for each pillar, answers to the following questions:

- which are the methods to be used in performing the assessment?
- which are the assessment indicators to be used?
- what information will need to be collected from the use cases or through other means?
- how will this information be collected and who will provide it?
- what are the limitations that may be faced regarding the information to be collected and the results of the assessment?

In methodological terms, the evaluation plan will: (i) employ the 'FESTA methodology for assessing Field Operational Tests (FOTs)' as an overall approach, adopting it to cover the specific requirements of SPROUT and also the requirements of each one of the 2 Pillars, (ii) follow the guidelines of the Cohesion Policy CBA Methodology regarding the employment of financial and economic CBAs for assessing the financial/economic aspects of the pilots; (iii) employ the Smart Freight Centre's Global Framework for Logistics Emissions Methodologies for assessing the environmental impacts of the pilots; (iv) draw from the assessment indicator lists and respective descriptions included in the 'Product Quality Model' and the 'Quality in Use Model' of ISO/IEC 25010; (v) incorporate the use of relevant existing CIVITAS tools (e.g. NISTO evaluation toolkit, multi-actor multi-criteria analysis [MAMCA]).

Task 4.2 – Detailed specifications of pilots' implementation (M11-M12) – Participation: ZLC (Leader), CErTH, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, NSCIIC(NBCC).

This task prepares the implementation of the 6 pilots. The pilot descriptions presented in section 1.3.2.3 will be further detailed in terms of: (1) the specific actions required for their implementation, their corresponding time plan and the roles of the stakeholders involved; (2) the identification and involvements of additional stakeholders (to the ones already included as project or associated partners) to further enrich the pilots' ecosystems; (3) any additional requirements (e.g. in terms of data collection) that will be placed by the pilot evaluation framework (Task 4.1).

WPs 2 and 3 will provide the baseline of the current urban mobility situation in each of the project cities (Task 2.2) and the definition of the expected impacts of the emerging transport solutions without policy intervention (Tasks 3.2 & 3.3).

All pilots will use the same tasks structure as described in Tasks 4.3-4.5, appropriately adapted to their needs and priorities. Supportive communication channels will be established to ensure a fluent collaboration both among the involved pilot partners and stakeholders as well as among the pilots.

During implementation, the Task will be subdivided in sub-tasks, one per pilot, to facilitate its execution.

Task 4.3 – Sustainability assessment of the pilots’ impacts (M13-M16) – Participation: ZLC (Leader), CERTH, VUB, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, NSCIIC(NBCC).

In this Task, SPROUT will implement the 6 pilots to test in practice the assumption that, the identified emerging mobility solutions that are at the core of each pilot: (1) are feasible and sustainable, in other words that they are not just a fad to disappear in the short term; (2) can benefit from an appropriate policy response, either in terms of enhancing their sustainability or in terms of mitigating their negative impacts. Therefore, the work to be undertaken will include:

- testing of the new mobility solutions and assessing their operational feasibility and sustainability from the operators’ point of view;
- assessing the economic, environmental & social impacts of the new mobility solutions and identifying areas where policy intervention will be required due to negative impacts;
- assessing policy-related and regulatory barriers during the implementation of the pilots that being removed would enhance their economic, environmental & social sustainability.

During implementation, the Task will be subdivided in sub-tasks, one per pilot, to facilitate its execution.

Task 4.4 – Formulation & prioritisation of alternative policy responses (M16-M17) – Participation: VUB (Leader), CERTH, ZLC, Valencia, VPF, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, NSCIIC(NBCC).

In this Task, the project team will develop a list of alternative policy responses per pilot, by using the respective input from the ‘Policy impacts of future urban mobility scenarios’ (Task 3.3) and the results from the operational assessment of the pilots (Task 4.3). Alternative policy responses will include:

- adapting current urban policy elements/instruments (e.g. SUMPs)
- integrating urban mobility policy with other policies such as urban planning, social policy (e.g. vulnerable & different cultural background citizen groups), gender-sensitive policies, employment policy (e.g. in relation to on-demand logistics), financing policy
- policies to help urban mobility innovators overcome regulatory obstacles (e.g. innovation deals).

The alternative policy responses will be prioritised per pilot, based on a multi-actor multi-criteria analysis (MAMCA) that will take into account the preferences of all local stakeholders identified in T2.4, showing synergies and conflicts between stakeholders. Policy responses with a higher degree of consensus will be brought forward to Task 4.5.

The impact of the policy responses on the scenarios developed in WP3 will be assessed and the scenario narratives and graphics (T3.4) will be updated to reflect the policy interventions.

During implementation, the Task will be subdivided in sub-tasks, one per pilot, to facilitate its execution.

Task 4.5 – City-specific policies for harnessing the impact of new mobility systems (M18-M20) – Participation: ZLC (Leader), CERTH, VUB, Valencia, VPF, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, NSCIIC(NBCC).

In this Task, SPROUT will use its pilots to test in practice the assumption that, an appropriate urban policy response can be implemented to harness the benefits of the emerging mobility solution within each pilot city. Local policy makers will agree on the prioritised policy responses, and a subset of those will be introduced in a limited scale. Although the medium- and long-term impacts of the policies cannot be assessed as this would require a longer duration than the project lifetime, the project will assess their implementation feasibility and their user acceptance. During the start of the implementation, this task will be subdivided in sub-tasks, one per pilot, to facilitate its execution. Stakeholder workshops and surveys will be used for the assessment of the urban mobility responses in each pilot city. Based on this assessment city-specific policy responses will be drawn, for each of the pilot cities.

SPROUT will take advantage of the common issues (where these exist, as shown in) among the pilots, to gain a deeper insight into their results, and the impact of the characteristics of each urban mobility environment on them. This work will be translated into key policy implementation messages to be used along with the successfully tested pilot policies for informing WP5.

Partner number and short name	WP4 effort
1 - ZLC	20.00
3 - CERTH	14.50
4 - VUB	10.00
7 - VALENCIA	2.00
8 - VPF	12.00
9 - FGV	6.00
10 - NSCIC	14.50
11 - NBUT	7.25
12 - BKK	10.00
13 - BPKOZUT	10.00
14 - CDPA	16.00
15 - VIU	15.00
16 - TLV	8.00
17 - TECHNION	12.00
18 - ILiM	10.00
19 - KALISZ	8.00
20 - KALISZBIF	2.00
Total	177.25

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D4.1	Pilot evaluation framework	1 - ZLC	Report	Public	10
D4.2	Set-up report: Valencia pilot	8 - VPF	Report	Public	12
D4.3	Impact assessment and city-specific policy response: Valencia pilot	8 - VPF	Report	Public	20
D4.4	Set-up report: Padua pilot	15 - VIU	Report	Public	12
D4.5	Impact assessment and city-specific policy response: Padua pilot	15 - VIU	Report	Public	20
D4.6	Set-up report: Kalisz pilot	18 - ILiM	Report	Public	12
D4.7	Impact assessment and city-specific policy response: Kalisz pilot	18 - ILiM	Report	Public	20

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D4.8	Set-up report: Budapest pilot	12 - BKK	Report	Public	12
D4.9	Impact assessment and city-specific policy response: Budapest pilot	12 - BKK	Report	Public	20
D4.10	Set-up report: Tel Aviv pilot	17 - TECHNION	Report	Public	12
D4.11	Impact assessment and city-specific policy response: Tel Aviv pilot	17 - TECHNION	Report	Public	20
D4.12	Set-up report: Ningbo pilot	10 - NSCIIC	Report	Public	12
D4.13	Impact assessment and city-specific policy response: Ningbo pilot	10 - NSCIIC	Report	Public	20
D4.14	Policy implementation messages from cross-pilot results	1 - ZLC	Report	Public	20

Description of deliverables

D4.1 (D11) - "Pilot evaluation framework". The deliverable will present the methods, indicators and collected data/information to be used for the assessment of the pilot activities. It presents the results of T4.1.

D4.2 (D12) - "Set-up report: Valencia pilot".

D4.3 (D13) - "Impact assessment and city-specific policy response: Valencia pilot".

D4.4 (D14) - "Set-up report: Padua pilot".

D4.5 (D15) - "Impact assessment and city-specific policy response: Padua pilot".

D4.6 (D16) - "Set-up report: Kalisz pilot".

D4.7 (D17) - "Impact assessment and city-specific policy response: Kalisz pilot".

D4.8 (D18) - "Set-up report: Budapest pilot".

D4.9 (D19) - "Impact assessment and city-specific policy response: Budapest pilot".

D4.10 (D20) - "Set-up report: Tel Aviv pilot".

D4.11 (D21) - "Impact assessment and city-specific policy response: Tel Aviv pilot".

D4.12 (D22) - "Set-up report: Ningbo pilot".

D4.13 (D23) - "Impact assessment and city-specific policy response: Ningbo pilot".

The set-up reports of the pilots will present the detailed specifications of the SPROUT pilots. They presents the results of T4.2. The reports on the impact assessment and city-specific policy responses of the pilots will present the sustainability impacts of the pilots, the process towards selecting the policies to be tested in the pilots and the impacts after their introduction, and finally the proposed policy response for the individual cities. They presents the results of T4.3 , T4.4 and T4.5.

D4.14 (D24) - "Policy implementation messages from cross-pilot results".

D4.1 : Pilot evaluation framework [10]

The deliverable will present the methods, indicators and collected data/information to be used for the assessment of the pilot activities. It presents the results of T4.1.

D4.2 : Set-up report: Valencia pilot [12]

The deliverable will present the detailed specifications of the SPROUT pilot. It presents the results of T4.2.

D4.3 : Impact assessment and city-specific policy response: Valencia pilot [20]

The deliverable will present the sustainability impacts of the pilot, the process towards selecting the policies to be tested in the pilot and the impacts after their introduction, and finally the proposed policy response for the city. It presents the results of T4.3 , T4.4 and T4.5.

D4.4 : Set-up report: Padua pilot [12]

The deliverable will present the detailed specifications of the SPROUT pilot. It presents the results of T4.2.

D4.5 : Impact assessment and city-specific policy response: Padua pilot [20]

The deliverable will present the sustainability impacts of the pilot, the process towards selecting the policies to be tested in the pilot and the impacts after their introduction, and finally the proposed policy response for the city. It presents the results of T4.3 , T4.4 and T4.5.

D4.6 : Set-up report: Kalisz pilot [12]

The deliverable will present the detailed specifications of the SPROUT pilot. It presents the results of T4.2.

D4.7 : Impact assessment and city-specific policy response: Kalisz pilot [20]

The deliverable will present the sustainability impacts of the pilot, the process towards selecting the policies to be tested in the pilot and the impacts after their introduction, and finally the proposed policy response for the city. It presents the results of T4.3 , T4.4 and T4.5.

D4.8 : Set-up report: Budapest pilot [12]

The deliverable will present the detailed specifications of the SPROUT pilot. It presents the results of T4.2.

D4.9 : Impact assessment and city-specific policy response: Budapest pilot [20]

The deliverable will present the sustainability impacts of the pilot, the process towards selecting the policies to be tested in the pilot and the impacts after their introduction, and finally the proposed policy response for the city. It presents the results of T4.3 , T4.4 and T4.5.

D4.10 : Set-up report: Tel Aviv pilot [12]

The deliverable will present the detailed specifications of the SPROUT pilot. It presents the results of T4.2.

D4.11 : Impact assessment and city-specific policy response: Tel Aviv pilot [20]

The deliverable will present the sustainability impacts of the pilot, the process towards selecting the policies to be tested in the pilot and the impacts after their introduction, and finally the proposed policy response for the city. It presents the results of T4.3 , T4.4 and T4.5.

D4.12 : Set-up report: Ningbo pilot [12]

The deliverable will present the detailed specifications of the SPROUT pilot. It presents the results of T4.2.

D4.13 : Impact assessment and city-specific policy response: Ningbo pilot [20]

The deliverable will present the sustainability impacts of the pilot, the process towards selecting the policies to be tested in the pilot and the impacts after their introduction, and finally the proposed policy response for the city. It presents the results of T4.3 , T4.4 and T4.5.

D4.14 : Policy implementation messages from cross-pilot results [20]

The deliverable will present the key elements that explain differences and or commonalities among the pilot results in the different cities. It presents a summary an comparison of the results of T4.3 , T4.4 and T4.5.

Schedule of relevant Milestones

Milestone number¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS3	Pilots set-up	1 - ZLC	12	Submitted reports to the EC (D4.2, D4.4, D4.6, D4.8, D4.10, D4.12)
MS4	Pilots impacts & city-specific policies	1 - ZLC	20	Submitted reports to the EC (D4.3, D4.5, D4.7, D4.9, D4.11, D4.13)

Work package number ⁹	WP5	Lead beneficiary ¹⁰	5 - POLIS
Work package title	Formulating a city-led innovative policy response		
Start month	21	End month	26

Objectives

1. To validate the applicability of the pilot results to a wider network of cities with different cultural/behavioural/governance circumstances
 2. To develop an urban policy model to understand how policies impact the urban mobility environment
 3. To formulate a city-led innovative urban mobility policy response, that can be widely applicable to European cities
 4. To define the requirements that the proposed policy response will place on the cities’ policy making capacities.
- The results of the work package will be used to define the minimum data needs for the Urban mobility shared data space in T6.1; the indicators for Task 6.2 – Evidence-based early policy alert & action tracking.

Description of work and role of partners

WP5 - Formulating a city-led innovative policy response [Months: 21-26]
POLIS, ZLC, UPM, CErTH, VUB, WI, VALENCIA, VPF, NSCIIC, NBUT, BKK, BPKOZUT, CDPA, VIU, TLV, TECHNION, ILiM , KALISZ, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT
 Task 5.1 – Validation of the wider applicability of pilot results (M21-M22) – Participation: POLIS (Leader), MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC(MPLS).

This task will be the first step in moving from a number of policy measures which are specific to each pilot city, towards what SPROUT calls a ‘city-led policy response’, i.e. a response that is widely applicable (in terms of its contents and structure) to European cities. Therefore, in this Task the project team will use the 2nd layer project cities to validate the results of the pilots. This will be realised by:

- linking each 2nd layer city to one (at least) pilot city in terms of its interest in the new mobility solutions to be tested and its potential policy impacts;
- developing validation guidelines using the TIDE transferability methodology ;
- disaggregating the city-specific policies into policy measures and bundling of the ones that have strong commonalities
- assessing the transferability of the pilot city-specific measures to the 2nd layer cities;
- defining policy elements that might need to be added or revised, to ensure the wider applicability of the pilot results.

To carry out the transferability assessment, the 2nd layer cities will establish a local structure consisting of: (1) a process manager, who will locally run the activities and events, complete information required by SPROUT and aggregate local data and information; (2) a ‘Local Innovation Forum’ (LIF) including 10-15 local stakeholders, selected according to the requirements of the new mobility solution in focus and their knowledge/involvement on the respective local policies. SPROUT will provide to the LIFs: (1) process guidance in terms of deployment structure, instructions for the meetings, work planning, reporting templates; (2) technical guidance in the transferability assessment process, including the validation guidelines.

Task 5.2 – Urban policy system dynamics model (M21-M24) – Participation: CErTH (Leader), ZLC, VUB, WI, VPF, NSCIIC, NBUT, BPKozut, VIU, TECHNION, ILIM, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC(MPLS).

To better understand the interrelations between urban mobility operations, new mobility solutions and urban policies, the project team will develop an urban policy model using the system dynamics methodology . Using the model, the project team aims to comprehend how the various elements of an urban mobility system interact with each other, analyse how its structure may affect its spatio-temporal behaviour and gain insights into how effective potential policies could be.

Tasks 2.1 (Urban mobility transition inventory) & 2.3 (Urban mobility transition drivers) will contribute in defining the model variables, while Tasks 4.5 (Assessment of urban mobility policy responses) & 5.1 (Validation of the pilot results’ wider applicability) will verify the interrelations among drivers. Causal Loop Diagrams will be developed to show the qualitative relations among the elements of the system under study (conceptual model) and flow diagrams will reflect their interactions and theoretical behaviour over time. The model is foreseen to incorporate the following sub-models: (1) economic; (2) environmental; (3) social; (4) mobility; (5) urban policy. The first three sub-models correspond to three dimensions of sustainability, the fourth to the new mobility solutions, and the last one to the policy response. The model will allow understanding how policies impact the urban mobility environment and the urban stakeholders, taking into account the role of veto-players among the stakeholders.

To get a more thorough understanding of the effect of the policy in the urban environment, the Causal Loop Diagram will be developed into a quantitative system dynamics model with the help of appropriate system dynamics software (Anylogic etc.). Furthermore, data and information from the pilot cities will be used for the simulation of the model, and the results will be validated by the 2nd layer cities and the SPROUT Open Innovation Community.

T5.3: SPROUT city-led innovative policy response (M24-M26) – Participation: POLIS (Leader), ZLC, UPM, CERTH, VUB, WI, VALENCIA, NSCIIC, BKK, CDPA, VIU, TLV, KALISZ, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC(MPLS).

Successfully tackling the problems arising from the emerging urban mobility environment cannot be achieved with a business-as-usual approach. A new policy response is needed to harness the impacts of new mobility solutions in a way that makes them more attractive to the users and more sustainable for the society as a whole. SPROUT will address this challenge by delivering a policy response based on three pillars:

- better understanding
- better regulation
- better financing.

The activities to be undertaken for structuring the SPROUT policy response, will be the following:

- linking each of the validated policy measures in Task 5.1, to one of the three policy pillars (understanding, regulation, financing)
- enriching the policy measures taking into account the interrelations to wider urban mobility environmental factors, as identified from the policy modelling in Task 5.2
- bundling the policy measures into policy packages that can take advantage of their potential synergies
- linking the policy packages to the urban policy lifecycle, to facilitate their adoption and use by cities that fall in different stages of policy making.

Therefore, the SPROUT city-led innovative policy response embeds the requirements of the cities themselves in trying to address the policy impacts of new mobility solutions (Tasks 4.5, 5.1), thus is ‘city-led’, and provides a wider policy view by anticipating the interactions of policies with the urban environment, using the results of the ‘urban policy system dynamics model’ (Task 5.2).

Furthermore, the project will define the main requirements that the proposed policy response will place on the cities’ policy making capacities. So, not only will SPROUT provide the appropriate policy response, but the project will also suggest how such a response can be implemented in an efficient and effective way.

The policy response will undergo a two-stage validation process:

- in the first stage it will be validated by the 1st and 2nd layers of the project cities;
- after any required adaptations, it will enter the second stage, with its validation to be undertaken by the 3rd layer project cities and the SPROUT Open Innovation Community.

Participation per Partner

Partner number and short name	WP5 effort
1 - ZLC	10.50
2 - UPM	2.00
3 - CERTH	7.00
4 - VUB	3.00
5 - POLIS	7.00
6 - WI	2.00
7 - VALENCIA	0.50
8 - VPF	3.00
10 - NSCIIC	3.00
11 - NBUT	1.50
12 - BKK	1.50
13 - BPKOZUT	1.50

Partner number and short name	WP5 effort
14 - CDPA	1.50
15 - VIU	3.50
16 - TLV	1.50
17 - TECHNION	1.50
18 - ILiM	1.50
19 - KALISZ	1.50
21 - MoI	2.50
22 - MECH	2.50
23 - ARAD	2.50
24 - HTB	2.50
25 - IDFrance	2.50
26 - CMA	2.00
27 - AGENEAL	2.00
28 - WMCA	2.50
29 - GOT	2.50
Total	75.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D5.1	Validation of the pilot results' wider applicability	5 - POLIS	Report	Public	22
D5.2	Urban policy system dynamics model	3 - CERTH	Report	Public	24
D5.3	SPROUT city-led innovative policy response	5 - POLIS	Report	Public	26

Description of deliverables

D5.1 (D25) - "Validation of the pilot results' wider applicability". The deliverable will present the results of the validation of the applicability of the pilot city-specific policies to the validation cities. It presents the results of T5.1.

D5.2 (D26) - "Urban policy system dynamics model". The deliverable will present the interrelations among urban policies, new mobility solutions and urban mobility operations. It presents the results of T5.2.

D5.3 (D27) - "SPROUT city-led innovative policy response". The deliverable will present a city-led innovative policy response that is widely applicable to European cities. It presents the results of T5.3.

D5.1 : Validation of the pilot results' wider applicability [22]

The deliverable will present the results of the validation of the applicability of the pilot city-specific policies to the validation cities. It presents the results of T5.1.

D5.2 : Urban policy system dynamics model [24]

The deliverable will present the interrelations among urban policies, new mobility solutions and urban mobility operations. It presents the results of T5.2.

D5.3 : SPROUT city-led innovative policy response [26]

The deliverable will present a city-led innovative policy response that is widely applicable to European cities. It presents the results of T5.3.

Schedule of relevant Milestones

Milestone number¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS5	Validation of the applicability of the pilot city-specific policies	5 - POLIS	22	Submitted report to the EC (D5.1)
MS6	SPROUT city-led innovative policy response	5 - POLIS	26	Submitted report to the EC (D5.3)

Work package number ⁹	WP6	Lead beneficiary ¹⁰	6 - WI
Work package title	Building cities' policy making capacity		
Start month	21	End month	33

Objectives

1. To define a minimum set of data to drive evidence-based urban mobility policy making, customised to the data capabilities of both rich- and poor data environments
 2. To design an urban mobility shared data space for both passenger and freight transport, as a blueprint for setting up an ecosystem-based mechanism to provide urban mobility data in a harmonised way and populate it with data from the project's partner cities.
 3. To deliver a multi-granular (big & small) data-driven approach to provide descriptive & predictive analytics for scanning weak signals (early indicators) of emerging urban mobility changes.
 4. To develop an urban policy response toolbox, to help cities easily recognise appropriate tools for urban policy making
 5. To enhance cities' capacity in the policy design and decision-making processes of deploying innovative urban mobility solutions
 6. To assist cities in the policy packaging and coalition building process with targeted tools and trainings.
- The results of this work package will be used to develop future policy responses at the EU level (e.g. SUMP) in WP7.

Description of work and role of partners

WP6 - Building cities' policy making capacity [Months: 21-33]
WI, ZLC, UPM, CERTH, VUB, POLIS, VALENCIA, VPF, FGV, NSCIIC, NBUT, BKK, BPKOZUT, CDPA, VIU, TLV, TECHNION, ILiM, KALISZ, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT
 Task 6.1 – Urban mobility shared data space (M21-M29) – Participation: WI (Leader), ZLC, UPM, CERTH, VUB, POLIS, Valencia, FGV, NBUT, BKK, CDPA, TLV, KALISZ, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC(MPLS).

The success of policy interventions critically depends on a sound evidence base which is relevant to decision making. This task will establish a quantitative basis for evidence-based policy making in the 1st & 2nd layer cities, by:

- defining key performance indicators and a minimum set of data needed to drive urban mobility policy making in general, and make informed decisions about the implementation of innovative urban mobility solutions in particular, customised to the data capabilities of both rich- and poor data environments, as represented by the variety of the project cities;
- designing an urban mobility shared data space for both passenger and freight transport, as a blueprint for setting up an ecosystem-based mechanism to provide urban mobility data in a harmonised way. The shared data space will be populated with data from the project's 1st & 2nd layer cities, while the inclusion of additional cities (e.g. to 3rd layer cities) will be open.

Tasks 2.1 & 2.3 will contribute with the identification of data elements regarding the assessment of the current state and the transition drivers, while Task 5.3 will contribute with additional data elements that will stem from the need to monitor the implementation of the SPROUT city-led innovative policy response.

Task 6.2 – Evidence-based early policy alert & action tracking (M27-M31) – Participation: CERTH (Leader), ZLC, UPM, WI, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKozut, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, NSCIIC(NBCC), ZLC(MPLS).

CERTH will use the 'urban mobility data share' as data pool (Task 6.1), and will develop this further into a multi-granular (big & small) data-driven approach to provide descriptive & predictive analytics for:

- Scanning weak signals (early indicators) of emerging urban mobility changes. This will act as a triggering mechanism for cities to review their policies when changes in urban mobility are detected and apply corrective medium and long-term measures. Specifically, designed machine learning algorithms will provide outliers detection, aggregation and classification of concept drift data streams. This will provide the basis for clustering of various different mobility environment states and produce key performance indicators to be used as critical thresholds that will potentially determine any anomaly detection in the urban mobility.
- WI will track cities' progress towards the achievement of specific policy goals. Data and the key performance indicators will feed into an index and action tracker, which will cover aspects such as: transportation metrics (mode shares, average daily trips, average emissions/vehicle, %ZEVs, PT infrastructure, active mobility composition, infrastructure

availability for sustainable mobility, etc.). The action tracker will summarise aspects such as, urban mobility policies and plans (infrastructure investments, demand-side measures, good practice examples); commitments to attain sustainable and low carbon mobility and outcomes (e.g. air quality, traffic safety, travel times, CO2 emissions from urban transport) for partner cities.

Contribution from Task 5.3 will ensure that the indicators to be used for early policy alert and policy implementation tracking are aligned with the ‘SPROUT city-led innovative policy response’.

Task 6.3 – Urban policy toolbox (M29-M32) – Participation: WI (Leader), VUB, POLIS, Valencia, FGV, NBUT, BKK, CDPA, TLV, KALISZ, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC(MPLS).

This task will focus not on creating tools, but rather on building cities’ capacity on recognising the benefits and appropriate uses of tools that have either been developed as part of the project or were already available and have proven their value in the policy facilitating activities of SPROUT. As tools, we consider actual tools (e.g. the early policy alert & action tracking mechanism), approaches (e.g. locally used policy preparation approaches) and methods (e.g. for quantitative and qualitative analysis). The tools to be included in the toolbox will be assessed in view of their applicability and usability in relation to: 1) the innovation area of choice; 2) the required local capacity and skills; 3) the required resources (time and money); 4) their expected outcomes. The assessment will be conducted on the basis of a check list, and will be conducted by both the research and the city project partners. The outcome of the assessment will be transferred into a decision tree on how to use, combine and phase out the most useful and applicable tools in specific urban mobility environments and along the policy making lifecycle.

Task 6.4 – Building cities’ policy making capacity (M29-M33) – Participation: WI (Leader), Valencia, FGV, NBUT, BKK, CDPA, TLV, KALISZ, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC(MPLS).

Through this task, and using the SPROUT results, the project team will build policy making capacity at the city level, in relation to two themes.

First, in building capacity in deploying tools for providing evidence for urban mobility policy making, by delivering training to cities on the:

- setup and use of the ‘urban mobility shared data space’, through webinars (software license at disposal);
- use of descriptive and predictive analytics in urban mobility, through webinars;
- identification of key policy objectives and actors to inform policy design, through webinars;
- use of the SPROUT early policy alert & action tracking approach, through webinars and an online course (e-learning platform at disposal, see <http://www.nuacampus.org/elearning/>).

Secondly, this task will build city officials’ capacity in designing and implementing urban mobility policies, by providing training on: (1) urban policy design, (2) policy coalition building and (3) policy governance, through 2 workshops and an online course.

Both workshops will be held in the third project year. They will be provided to the 1st, 2nd and 3rd layers of the project cities. The e-learning course will be made available to other cities and other interested stakeholders as well.

- In the workshops, the city officials may choose one out of three topics as mentioned above. The 1st layer cities will then provide first-hand experience with the policy implementation processes in the pilots in a dedicated discussion group. A particular focus will be put on the mapping of potential synergies of policy objectives and the linkages to coalition building with a particular focus on veto-players; another focus will be on identifying and utilising synergies among passenger- and freight- related measures and among urban mobility and land-use measures. At the end of a workshop, the three groups will exchange their discussions results. The discussion groups will keep in touch through the Open Innovation Community platform (see T8.1).

Participation per Partner

Partner number and short name	WP6 effort
1 - ZLC	11.75
2 - UPM	3.00
3 - CERTH	14.00
4 - VUB	6.00
5 - POLIS	1.00
6 - WI	10.00

Partner number and short name	WP6 effort
7 - VALENCIA	1.50
8 - VPF	1.00
9 - FGV	1.00
10 - NSCIIC	2.00
11 - NBUT	2.00
12 - BKK	2.00
13 - BPKOZUT	0.50
14 - CDPA	2.00
15 - VIU	0.50
16 - TLV	2.00
17 - TECHNION	0.50
18 - ILiM	0.50
19 - KALISZ	2.00
21 - MoI	7.25
22 - MECH	6.75
23 - ARAD	7.25
24 - HTB	6.75
25 - IDFrance	7.25
26 - CMA	3.50
27 - AGENEAL	3.50
28 - WMCA	6.75
29 - GOT	6.75
Total	119.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D6.1	Urban mobility shared data space	6 - WI	Report	Public	29
D6.2	Evidence-based early policy alert & action tracking	3 - CERTH	Report	Public	31
D6.3	Urban policy toolbox	6 - WI	Report	Public	32
D6.4	eLearning course on early policy alert & action tracking	3 - CERTH	Websites, patents filling, etc.	Public	33

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D6.5	eLearning course on policy design, coalition & governance	6 - WI	Websites, patents filling, etc.	Public	33
D6.6	Webinars on SPROUT tools	3 - CERTH	Websites, patents filling, etc.	Public	33
D6.7	1st workshop on urban policy design, coalition building, governance, and policy packaging.	6 - WI	Websites, patents filling, etc.	Public	29
D6.8	2nd workshop on urban policy design, coalition building, governance, and policy packaging.	6 - WI	Websites, patents filling, etc.	Public	33

Description of deliverables

D6.1 (D28) - "Urban mobility shared data space ". The deliverable will present a minimum set of data needed to drive urban mobility policy making and the design of a shared data space to provide urban mobility data in a harmonised way. It presents the results of T6.1.

D6.2 (D29) - "Evidence-based early policy alert & action tracking ". The deliverable will present qualitative and quantitative data on progress and policy implementation that informs policy processes in partner cities. It presents the results of T6.2.

D6.3 (D30) - "Urban policy toolbox". The deliverable will summarise existing tools that can assist cities in the policy identification, design and implementation processes. It presents the results of T6.3.

D6.4 (D31) - "eLearning course on early policy alert & action tracking". The deliverable will present the database and action tracker and will facilitate the use and active engagement of city partners in them. It presents the partial results of T6.4.

D6.5 (D32) - "eLearning course on policy design, coalition & governance". The deliverable will present key aspects of the policy design and governance framework and will provide targeted advice and support to all partner cities. It presents the partial results of T6.4.

D6.6 (D33) - "Webinars on SPROUT tools". Webinars on the use of: the 'urban mobility shared data space'; descriptive and predictive analytics; and the 'SPROUT early policy alert & action tracking approach'. It presents the partial results of T6.4.

D6.7 (D34) - "Workshop on urban policy design, coalition building, governance, and policy packaging". A workshop on urban policy design, coalition building, governance, and policy packaging. It presents the partial results of T6.4.

D6.8 (D35) - "Workshop on urban policy design, coalition building, governance, and policy packaging". A workshop on urban policy design, coalition building, governance, and policy packaging. It presents the partial results of T6.4.

D6.1 : Urban mobility shared data space [29]

The deliverable will present a minimum set of data needed to drive urban mobility policy making and the design of a shared data space to provide urban mobility data in a harmonised way. It presents the results of T6.1.

D6.2 : Evidence-based early policy alert & action tracking [31]

The deliverable will present qualitative and quantitative data on progress and policy implementation that informs policy processes in partner cities. It presents the results of T6.2.

D6.3 : Urban policy toolbox [32]

The deliverable will summarise existing tools that can assist cities in the policy identification, design and implementation processes. It presents the results of T6.3.

D6.4 : eLearning course on early policy alert & action tracking [33]

The deliverable will present the database and action tracker and will facilitate the use and active engagement of city partners in them. It presents the partial results of T6.4.

D6.5 : eLearning course on policy design, coalition & governance [33]

The deliverable will present key aspects of the policy design and governance framework and will provide targeted advice and support to all partner cities. It presents the partial results of T6.4.

D6.6 : Webinars on SPROUT tools [33]

Webinars on the use of: the ‘urban mobility shared data space’; descriptive and predictive analytics; and the ‘SPROUT early policy alert & action tracking approach’. It presents the partial results of T6.4.

D6.7 : 1st workshop on urban policy design, coalition building, governance, and policy packaging. [29]

A workshop on urban policy design, coalition building, governance, and policy packaging. It presents the partial results of T6.4.

D6.8 : 2nd workshop on urban policy design, coalition building, governance, and policy packaging. [33]

A workshop on urban policy design, coalition building, governance, and policy packaging. It presents the partial results of T6.4.

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS7	Urban mobility shared data space	6 - WI	29	Submitted report to the EC (D6.1)
MS8	Training activities	3 - CERTH	33	Training workshop and E-learning webinars executed successfully in T6.4 (D6.4, D6.5, D6.6)

Work package number ⁹	WP7	Lead beneficiary ¹⁰	3 - CERTH
Work package title	Navigating future policy		
Start month	27	End month	34

Objectives

1. To customise and feed project results into ongoing & future EU policy initiatives
2. To deliver a proposed European strategy to navigate urban mobility policy through transition
3. To deliver a proposed agenda of international cooperation on urban mobility policy issues between the EU, China, and the US.

Description of work and role of partners

WP7 - Navigating future policy [Months: 27-34]
CERTH, ZLC, UPM, VUB, POLIS, WI, NSCIIC, NBUT
Task 7.1 – An adapted SUMP-based policy response (M27-M30) – Participation: CERTH (Leader), ZLC, UPM, VUB, POLIS WI.

Emerging mobility innovations, place multiple challenges to the current SUMP instruments. The project will provide a proposed policy response for adapting sustainable urban mobility planning, at two levels:

- first, focusing at the city level, by channelling the pilot results into the pilot city SUMPs, as indicated in the pilot-specific tables of section 1.3.2.3. To realise this, the pilot results will be translated into specific SUMP revision recommendations in each pilot city. Considering the focus of each pilot, these will be subsequently generalised in the form of Policy Briefs.
- Secondly, focusing at the implementation level of the EU’s SUMP initiative, proposing a revision of the SUMP Guidelines, to better integrate topics on emerging innovative mobility solutions, as indicated by DG MOVE . The project especially expects to contribute to the revision of the following Steps of the Guidelines :
 - ‘Step 3: Analyse the mobility situation and develop scenarios’, with the results of Task 3.4 (Narrative scenarios of SPROUT cities) and Task 6.1 (Urban mobility shared data space)
 - Step 6: Develop effective packages of measures’, with the addition of a new activity (Activity 7.5: consider the impacts of emerging mobility solutions) based on the results of Task 5.3 (SPROUT City-led innovative policy response)
 - Step 8: Build monitoring and assessment into the plan’ with the addition of a new activity (Activity 8.2: Identify emerging mobility changes) based on the results of Task 6.2 (Evidence-based early policy alert & action tracking).

Task 7.2 – Urban Agenda policy briefs (M27-M30) – Participation: WI (Leader), ZLC, CERTH, VUB, POLIS.

SPROUT will feed its results into the development of two Policy Briefs addressing respective actions defined by the Partnership for Urban Mobility :

- SPROUT Policy Brief 1: Extent of support and/or regulation to be provided by city authorities to new mobility services and the future evolution of the cities’ role
- SPROUT Policy Brief 2: Required regulatory and operational facilitators for the effective integration of new mobility solutions in the transport offer of cities

Task 7.3 – A European strategy to navigate urban mobility policy through transition (M29-M32) – Participation: CERTH (Leader), ZLC, UPM, POLIS WI.

The proposed city-led innovative policy response (Task 5.3) will form the basis for structuring a proposed European strategy to navigate urban mobility policy through transition. The strategy will be structured in the form of a draft roadmap (Inception Impact Assessment), according to the Better Regulation Guidelines , as a first required step to inform the political validation of the initiative. The draft roadmap will include:

- the problems the strategy aims to tackle
- the objectives and policy options
- a preliminary assessment of the expected impacts.

The Strategy will be validated by the Open Innovation Community on Urban Mobility Policy.

Task 7.4 – EU, US, China international cooperation agenda on urban mobility policy (M31-M34) – Participation: CERTH (Leader), ZLC, UPM, POLIS, WI, NSCIIC, NBUT, ZLC(MPLS), NSCIIC(NBCC).

Research and innovation are increasingly interlinked internationally. Furthermore, in the last interim evaluation of H2020, the importance of strengthening international cooperation in R&I. has been stressed and endorsed by the EC. Acknowledging this reality, the project will take advantage of having in its team Chinese and US organisations, in order to draw a proposed international cooperation agenda on urban mobility policy. To arrive to the formulation of the agenda, the project team will undertake the following activities:

- the commonalities and differences in terms of the challenges faced in urban mobility policies in the EU, the US and China, will be defined
- areas where further research will be required to address the common urban mobility challenges will be defined
- an agenda of common-interest themes and missions for joint research on urban mobility policy will be defined
- the existing and forthcoming research frameworks of the EU (H2020 & forthcoming FP9), the US (NSF), and China (Five-Year Plans in Transport Research) will be analysed to identify potential synergies
- recommendations for common events & information channels for promoting collaboration will be drawn
- international cooperation targets for the following three years will be established.

Participation per Partner

Partner number and short name	WP7 effort
1 - ZLC	6.00
2 - UPM	2.50
3 - CERTH	10.00
4 - VUB	3.00
5 - POLIS	2.00
6 - WI	5.50
10 - NSCIC	3.00
11 - NBUT	1.50
Total	33.50

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D7.1	SUMP-based policy response	3 - CERTH	Report	Public	30
D7.2	Urban Agenda policy briefs	6 - WI	Report	Public	30
D7.3	A European strategy to navigate urban mobility policy through transition	3 - CERTH	Report	Public	32
D7.4	EU, US, China international cooperation agenda on urban mobility policy	3 - CERTH	Report	Public	34

Description of deliverables

D7.1 (D36) - "SUMP-based policy response". The deliverable will present the proposed revision of the SUMP Guidelines of T7.1, to better integrate topics on emerging innovative mobility solutions.

D7.2 (D37) - "Urban Agenda policy briefs". The deliverable will present two policy briefs addressing respective actions defined by the Partnership for Urban Mobility, addressed in T7.2.

D7.3 (D38) - "A European strategy to navigate urban mobility policy through transition". The deliverable will present a proposed European strategy to navigate urban mobility policy through transition, in the form of a draft roadmap, created in T7.3.

D7.4 (D39) - "EU, US, China international cooperation agenda on urban mobility policy". The deliverable will present a proposed international cooperation agenda on urban mobility policy, created in T7.4.

D7.1 : SUMP-based policy response [30]

The deliverable will present the proposed revision of the SUMP Guidelines of T7.1, to better integrate topics on emerging innovative mobility solutions.

D7.2 : Urban Agenda policy briefs [30]

The deliverable will present two policy briefs addressing respective actions defined by the Partnership for Urban Mobility, addressed in T7.2.

D7.3 : A European strategy to navigate urban mobility policy through transition [32]

The deliverable will present a proposed European strategy to navigate urban mobility policy through transition, in the form of a draft roadmap, created in T7.3.

D7.4 : EU, US, China international cooperation agenda on urban mobility policy [34]

The deliverable will present a proposed international cooperation agenda on urban mobility policy, created in T7.4.

Schedule of relevant Milestones

Milestone number¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS9	European strategy on urban mobility policy	3 - CERTH	32	Submitted report to the EC (D7.3)

Work package number ⁹	WP8	Lead beneficiary ¹⁰	5 - POLIS
Work package title	Project outcomes' validation, transfer & exploitation		
Start month	1	End month	36

Objectives

1. To setup and manage an Open Innovation Community on Urban Mobility Policy, to (1) facilitate debate generation & consensus building and (2) validate the project results
2. To define a strategy for the dissemination and communication of project results
3. To ensure dissemination synergies by combining efforts with other relevant projects and networks
4. To transfer project results to European, Chinese and US cities
5. To draw feasible exploitation paths for the project outputs.

Description of work and role of partners

WP8 - Project outcomes' validation, transfer & exploitation [Months: 1-36]
POLIS, ZLC, UPM, CERTH, VUB, WI, VALENCIA, VPF, FGV, NSCIIC, NBUT, BKK, BPKOZUT, CDPA, VIU, TLV, TECHNION, ILiM, KALISZ, KALISZBIF, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT
 Task 8.1 – Open Innovation Community (OIC) on Urban Mobility Policy (M1-M36) – Participation: UPM (Leader), CERTH, VUB, POLIS WI.

This Task will undertake the setup and management of the SPROUT Open Innovation Community (OIC). The work will initiate with a targeted user needs assessment using structured interviews with those OIC members that have confirmed their active involvement (POLIS, EUROCITIES, EPF, EPOMM, ALICE, MIT CTL, University of California Davis, ECTRI, UN Habitat, State Department of Transportation Minnesota (USA), and SUSTRANS) to define in concrete terms what they expect from their participation in the OIC and more generally from SPROUT. This should ensure that the OIC offers tailored services and exploits the added value from internal and external knowledge stakeholders to the fullest. The emphasis will be on sourcing interesting knowledge from the community members as well as promoting different assets of SPROUT established in the different WPs. The project envisages an active involvement of the OIC through a series of activities – online and off line:

- Active involvement of the OIC in the project validation through discussions in the community hubs ('hubs' are online forums accessed through the SPROUT website, allowing experts to discuss and interact on specific questions or issues – see Task 8.4. At least each half year, 5 discussions will be initiated within the online community hubs and actively moderated by SPROUT partners. The hubs discussion should follow a process that reflects the Community of Practice methodology: relate to urgent issues from community members, scoping and problem definition, solutions brainstorm, feasibility check of solutions against community members context, conclusion and lessons learned. The SPROUT partners involved will conclude the hubs discussions with a summary text that can be shared within the community beyond the hubs, by means of a blog or news item.
- A share of the hubs discussions will be focusing on the validation of project results. These are in principle initiated by the SPROUT partner responsible for the deliverable that is put to scrutiny by the OIC members. The procedures will be quite similar. Outcome of the discussion will be added to the final deliverables, and the running time of the hubs activities will be shorter than 6 months.
- A specific ongoing hub discussion will be managed by one of the SPROUT research partners to facilitate academic and scientific outputs (presentations at peer reviewed conferences, journal publications etc.) preferably involving a deep cooperation between academic and scientific stakeholders within the SPROUT partnership as well as beyond.

Task 8.2 – Validation strategy (M4-M6) – Participation: WI (Leader), CERTH, POLIS.

The project has foreseen the use of three validation mechanisms: the 2nd layer project cities; the 3rd layer project cities; the Open Innovation Community on Urban Policy. In this Task, the validation strategy to be used will be defined, incorporating the:

- the links between specific project outputs and the corresponding validation mechanism.
- guidelines to be used for the validation activities.
- procedures and means to be used for the validation.

The validation strategy will take into account any specific support needs and knowledge capacity gaps of each validation group. The strategy will include a clear framework to define the relation between an OIC member and the project in terms of IPR, referencing of contributions, privacy etc.

Task 8.3 – Dissemination & communication (M1-M36) – Participation: POLIS (Leader), ZLC, UPM, CERTH, VUB, WI, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC(MPLS), NSCIIC(NBCC).

A dissemination & communication strategy will be developed, starting from the initial planning presented in the proposal and further enriching, detailing and updating this as needed. These will address the following questions: (1) who are the crucial stakeholders to be targeted? (2) how do we bring these stakeholders on board? (3) which are they messages to be used? (4) through which channels and by using which tools do we meet the information needs of the target audiences? (5) which is the time plan for the foreseen actions? (6) how do we monitor the progress and how do we assess the success of the dissemination strategy? Although the project dissemination and communication activities will share target groups, channels and means, dissemination will be mainly focused on disclosing project results to appropriate groups, while communication mainly on addressing issues such as the project's contribution to competitiveness, solving societal challenges and citizens' everyday lives. The dissemination strategy will be further detailed in a Dissemination Plan. The delivery of the dissemination & communication activities will engage all project partners in reaching out to their respective regions and professional networks, and will be continuous throughout the project.

Task 8.4 – Project identity & dissemination media (M1-M36) – Participation: POLIS (Leader), ZLC, UPM, CERTH, VUB, WI.

The dominant communication medium will not be paper-based but digital in order to facilitate quick and dynamic interactions within the interested stakeholders and to enable the integration of the project knowledge resources with the external co-operators. This will be achieved through the:

- development of the project's identity
- development of the project's website and the exploitation of social media mechanisms
- design & production of dissemination materials for target audiences.

The SPROUT website will serve as central communication and interaction gateway. It will:

- provide access to background information, blogs, photographs, podcasts and video reports, indicators etc. about all project activities
- serve as dispatching centre for social media channels managed by SPROUT (twitter, LinkedIn)
- host the facilities for the Open Innovation Community, being a) a 'people's' section that enables invited experts to be visible for fellow community members, and include detail on the level and areas of expertise and interest, b) a 'hubs' section where experts can meet in private online forums, dedicated to specific questions or issues, for this purpose, existing and performant forum abilities will be embedded in the website c) a consolidated results section where summaries of concluded discussions are stored as well as project results, d) SPROUT blog, where project internal and external OIC members can contribute.

The website and all its elements will be actively updated throughout the project and will be maintained according to the H2020 rules and guidelines.

A corporate identity for SPROUT will be created to ensure a common graphic line (project leaflet, website, social-media, presentation templates etc.) for all communications material produced by the consortium.

Dissemination material to be produced and used includes:

- project e-leaflets, presenting the project's main elements, to be distributed through the project partners' networks, and translated as necessary by partners for local use
- digital newsletters, sourced from the regularly updated news section on the project website,
- press releases on the project events
- roll-up posters to be used during project and wider community events
- articles on SPROUT's activities and results, to be published at the beginning, during and at the end of the project, in high impact scientific journals
- one final project publication (digital & printed).

Task 8.5 – Interaction with existing networks and EC activities (M1-M36) – Participation: POLIS (Leader), ZLC, UPM, CERTH, VUB, WI.

This Task will guide, realise and report on the project's interaction with relevant networks and with activities of the European Commission in the area of urban mobility. Synergies with existing initiatives will be created through exchanging information and results, organising common events and mutually promoting individual activities. The consortium will seek close interaction with the CIVITAS2020 community and the European Transport and Mobility Forum that is being established in the Mobility4EU project.

Task 8.6 – Transfer of project results to European, US & Chinese cities (M12-M36) – Participation: POLIS (Leader), ZLC, UPM, CERTH, VUB, WI.

SPROUT will package in appropriate themes and transfer its results to European, US & CN cities, by undertaking:

- three webinars, addressing the needs of local authorities and urban mobility innovation stakeholders. One webinar is to take place in each continent: Europe, USA, and China.
- two workshops outside the EU, one in the US (planned to be part of the TRB 2022 conference) and one in China (hosted by the Ningbo Supply Chain Innovation Institute China)
- the organisation of an OIC clinic for European cities at the CIVITAS forum conferences during the project’s lifetime, leading to three annual events where results are presented, knowledge is sourced and new issues for future discussions are gathered. For this purpose, SPROUT will cooperate with the CIVITAS 2020 CSA.

Following these events, the SPROUT partners will dedicate resources to bilaterally support cities interested in further implementing the project results locally.

Task 8.7 – Exploitation strategy & IPR (M1-M36) – Participation: POLIS (Leader), ZLC, UPM, CERTH, VUB, WI, Valencia, VPF, FGV, NSCIIC, NBUT, BKK, BPKuzot, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, KALISZBIF, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC(MPLS), NSCIIC(NBCC)..

To guarantee the transfer of project results beyond its life, an all-inclusive exploitation strategy will be established. The exploitation strategy will ensure that all results achieved will be exploited by the respective partners (respecting IPR issues) either by using them in further research/implementation activities or by developing & providing new products and/or services, or by using them in standardisation activities.

Participation per Partner

Partner number and short name	WP8 effort
1 - ZLC	5.50
2 - UPM	8.50
3 - CERTH	7.50
4 - VUB	4.50
5 - POLIS	8.00
6 - WI	8.00
7 - VALENCIA	1.00
8 - VPF	2.00
9 - FGV	1.00
10 - NSCIIC	2.00
11 - NBUT	1.00
12 - BKK	1.00
13 - BPKOZUT	1.00
14 - CDPA	1.00
15 - VIU	1.00
16 - TLV	1.00
17 - TECHNION	1.00
18 - ILiM	1.00
19 - KALISZ	1.00
20 - KALISZBIF	1.00
21 - MoI	1.00

Partner number and short name	WP8 effort
22 - MECH	1.00
23 - ARAD	1.00
24 - HTB	1.00
25 - IDFrance	1.00
26 - CMA	1.00
27 - AGENEAL	1.00
28 - WMCA	1.00
29 - GOT	1.00
Total	67.00

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D8.1	OIC setup	2 - UPM	Report	Public	2
D8.2	OIC setup and achievements - 1st year status	2 - UPM	Report	Public	13
D8.3	OIC setup and achievements - 2nd year status	2 - UPM	Report	Public	25
D8.4	OIC setup and achievements - Final status	2 - UPM	Report	Public	36
D8.5	Validation strategy	6 - WI	Report	Public	6
D8.6	Dissemination/ communication strategy and dissemination plan	5 - POLIS	Report	Public	2
D8.7	Dissemination/ communication strategy and dissemination plan - 1st year status	5 - POLIS	Report	Public	12
D8.8	Dissemination/ communication strategy and dissemination plan - 2nd year status	5 - POLIS	Report	Public	24
D8.9	Dissemination/ communication strategy and dissemination plan - final status	5 - POLIS	Report	Public	36
D8.10	SPROUT Website	5 - POLIS	Websites, patents filling, etc.	Public	3

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D8.11	Project identity	5 - POLIS	Websites, patents filling, etc.	Public	2
D8.12	Dissemination material	5 - POLIS	Websites, patents filling, etc.	Public	2
D8.13	SPROUT results brochure	5 - POLIS	Websites, patents filling, etc.	Public	35
D8.14	International transfer activities	5 - POLIS	Report	Public	36
D8.15	Exploitation strategy	5 - POLIS	Report	Public	12
D8.16	Exploitation strategy - 1st year status	5 - POLIS	Report	Public	24
D8.17	Exploitation strategy - 2nd year status	5 - POLIS	Report	Public	36

Description of deliverables

D8.1 (D40) - "OIC setup". The deliverable will present the official setup and kick-off meeting of the OIC, executed in T8.1.

D8.2 (D41) - "OIC setup and achievements - 1st year status". The deliverable will present the evolution and results of the OIC activities such as membership evolution and the results of the Community's interaction with the project, executed in T8.1.

D8.3 (D42) - "OIC setup and achievements - 2nd year status". The deliverable will present the evolution and results of the OIC activities such as membership evolution and the results of the Community's interaction with the project, executed in T8.1.

D8.4 (D43) - "OIC setup and achievements - Final status". The deliverable will present the final results of the OIC activities such as membership and the results of the Community's interaction with the project, executed in T8.1.

D8.5 (D44) - "Validation strategy". The deliverable will present the activities to be undertaken by the project validation mechanisms and the procedures to be followed. Related to T8.2.

D8.6 (D45) - "Dissemination/communication strategy and dissemination plan". The deliverable will present the project strategy to be used for having its results disseminated/communicated to the appropriate stakeholder groups. It presents the results of T8.3.

D8.7 (D46) - "Dissemination/communication strategy and dissemination plan - 1st year status". The deliverable will present the actual status of the dissemination and communication actions performed in the indicated period and the planning for the following period. It presents the results of T8.3.

D8.8 (D47) - "Dissemination/communication strategy and dissemination plan - 2nd year status". The deliverable will present the actual status of the dissemination and communication actions performed in the indicated period and the planning for the following period. It presents the results of T8.3.

D8.9 (D48) - "Dissemination/communication strategy and dissemination plan - final status". The deliverable will present the final status of the dissemination and communication actions performed in the indicated period and the planning for the following period. It presents the results of T8.3.

D8.10 (D49) - "SPROUT Website". A project website fully functional. This will be elaborated in T8.4.

D8.11 (D50) - "Project identity". The deliverable will consist of SPROUT's visual identity, ensuring a common graphic line for all communications material produced and initiatives undertaken by the consortium. This will be created in T8.4.

D8.12 (D51) - "Dissemination material". All types of dissemination material produced by the project. These will be created in T8.4.

D8.13 (D52) - "SPROUT results brochure". A final project publication (digital & printed). This will be created in T8.4.

D8.14 (D53) - "International transfer activities". The deliverable will present the activities undertaken for transferring project results to European, US & Chinese cities, and the results of these activities. It will present the results of T8.5 and T8.6.

D8.15 (D54) - "Exploitation strategy". The deliverable will present the strategy for the exploitation of the project results by the project partners. It presents the results of T8.7.

D8.16 (D55) - "Exploitation strategy - 1st year status". The deliverable will present the exploitation actions performed by the project partners in the specific period. It presents the results of T8.7.

D8.17 (D56) - "Exploitation strategy - 2nd year status". The deliverable will present the exploitation actions performed by the project partners in the specific period. It presents the final results of T8.7.

D8.1 : OIC setup [2]

The deliverable will present the official setup and kick-off meeting of the OIC, executed in T8.1

D8.2 : OIC setup and achievements - 1st year status [13]

The deliverable will present the evolution and results of the OIC activities such as membership evolution and the results of the Community's interaction with the project, executed in T8.1

D8.3 : OIC setup and achievements - 2nd year status [25]

The deliverable will present the evolution and results of the OIC activities such as membership evolution and the results of the Community's interaction with the project, executed in T8.1

D8.4 : OIC setup and achievements - Final status [36]

The deliverable will present the final results of the OIC activities such as membership and the results of the Community's interaction with the project , executed in T8.1

D8.5 : Validation strategy [6]

The deliverable will present the activities to be undertaken by the project validation mechanisms and the procedures to be followed. Related to T8.2.

D8.6 : Dissemination/communication strategy and dissemination plan [2]

The deliverable will present the project strategy to be used for having its results disseminated/communicated to the appropriate stakeholder groups. It presents the results of T8.3.

D8.7 : Dissemination/communication strategy and dissemination plan - 1st year status [12]

The deliverable will present the actual status of the dissemination and communication actions perform in the indicated period and the planning for the following period. It presents the results of T8.3.

D8.8 : Dissemination/communication strategy and dissemination plan - 2nd year status [24]

The deliverable will present the actual status of the dissemination and communication actions perform in the indicated period and the planning for the following period. It presents the results of T8.3.

D8.9 : Dissemination/communication strategy and dissemination plan - final status [36]

The deliverable will present the final status of the dissemination and communication actions perform in the indicated period and the planning for the following period. It presents the results of T8.3.

D8.10 : SPROUT Website [3]

A project website fully functional. This will be elaborated in T8.4.

D8.11 : Project identity [2]

The deliverable will consist of SPROUT's visual identity, ensuring a common graphic line for all communications material produced and initiatives undertaken by the consortium. This will be created in T8.4.

D8.12 : Dissemination material [2]

All types of dissemination material produced by the project. These will be created in T8.4.

D8.13 : SPROUT results brochure [35]

A final project publication (digital & printed). This will be created in T8.4.

D8.14 : International transfer activities [36]

The deliverable will present the activities undertaken for transferring project results to European, US & Chinese cities, and the results of these activities. It will present the results of T8.5 and T8.6.

D8.15 : Exploitation strategy [12]

The deliverable will present the strategy for the exploitation of the project results by the project partners. It presents the results of T8.7.

D8.16 : Exploitation strategy - 1st year status [24]

The deliverable will present the exploitation actions performed by the project partners in the specific period. It presents the results of T8.7.

D8.17 : Exploitation strategy - 2nd year status [36]

The deliverable will present the exploitation actions performed by the project partners in the specific period. It presents the final results of T8.7.

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS10	Open Innovation Community initial set-up	2 - UPM	2	Submitted report to the EC (D8.1). Reviews at M13 (D8.2), M24 (D8.3), and M36 (D8.4)
MS11	Dissemination & Communication strategy and dissemination plan	5 - POLIS	2	Dissemination plan submitted to the EC (D8.6). Reviews at M12 (D8.7), M24 (D8.8), M36 (D8.9).
MS12	Exploitation strategy	5 - POLIS	12	Exploitation strategy submitted to the EC (D8.15). Reviews at M24 (D8.16), M36 (D8.17)
MS13	SPROUT website	5 - POLIS	3	Public access to a fully functional website (D8.10)

Work package number ⁹	WP9	Lead beneficiary ¹⁰	1 - ZLC
Work package title	Project management		
Start month	1	End month	36

Objectives

1. To ensure the effective administration of the project activities according to the rules and regulations of the EU, and according to sound project management and coordination practices
2. To ensure that all project outcomes are of high quality, meet their objectives and are delivered according to the agreed time- and resource-planning
3. To ensure that all potential risks are identified at an early stage, and appropriate actions for their mitigation/avoidance are implemented
4. To ensure an effective interface to the European Commission and to achieve smooth communications among the partners and with external entities.

Description of work and role of partners

WP9 - Project management [Months: 1-36]

ZLC, UPM, CERTH, VUB, POLIS, WI, VALENCIA, VPF, NSCIIC, NBUT, BKK, CDPA, VIU, TLV, TECHNION, ILiM, KALISZ, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT
 Task 9.1 – Administrative and financial management (M1-M36) – Participation: ZLC.

This Task will undertake the monitoring, control and execution of all administrative and financial aspects of the project, guaranteeing the adherence of the project work to the schedule, resources and plan. More specifically, the following work items are included in this Task:

- developing a Project Handbook, defining the main rules, conventions and approaches to be used by the partners for administration tasks, project management, deliverable preparation & assessment, communication and inter-project coordination.
- ensuring the consistency between project work plan and financial guidelines
- preparing and agreeing on the contract agreement, so that it is signed by all partners
- creating suitable Forms for financial reporting based on the templates provided by the EU
- collecting the regular financial reports and audit certificates
- producing, compiling, monitoring and analysing periodical reports and management/final reports for the European Commission
- ensuring the Consortium payments in accordance with budget consumption
- informing the EC and the Consortium on the prospective changes of project finances
- dealing with legal issues that may occur i.e. contracts, contract amendments etc.
- executing all payments of the project
- collecting and safeguarding the necessary documents and in general making sure that the project execution is done according to EU rules and practices
- undertaking the liaison with all partners regarding their administrative and financial obligations and checking all relevant material (e.g. invoices) that are produced during the project's life cycle
- ensuring the continuous and effective operation of the Project Management Office
- ensuring an effective & efficient IPR management process in compliance with EC guidelines
- managing the processes of project reviews and audits.

Task 9.2 – Technical coordination, risk and quality control & management (M1-M36) – Participation: CERTH (Leader), ZLC, UPM, VUB, POLIS, WI.

This Task involves the technical/scientific guidance, monitoring and control of all project outcomes so that these are of high quality and meet their objectives. It also involves identifying and assessing potential risks and designing mitigation/avoidance strategies. More specifically, the following work items are included in this Task:

- provision of guidance on the scientific aspects of the project work
- supervision of all technical activities of the different work packages to ensure consistency and scientific quality
- technical/scientific meetings planning, execution & reporting
- planning and execution of internal & external reviews of the project outcomes before their final submission to the EC
- overall project quality assessment

- risk analysis & management, based on the FERMA standard (risk analysis, risk evaluation, risk reporting, risk treatment, residual risk reporting)
- preparation of six-monthly Risk & Quality Assessment Reports
- preparation of the project's Final Report.

Task 9.3 – Ethics requirements and data management policy (M1-M36) – Participation: ZLC (Leader), CERTH, VUB.

In this task, the ethics requirements, the data management and data protection policies will be defined in accordance with the current EU data protection regulations (General Data Protection Regulation), the European Code of Conduct for Research Integrity and national regulations in the SPROUT partner countries. The ethics requirements will ensure compliance with the above mentioned regulations, aiming at identifying potential ethical issues in the project and in providing ethical guidelines to be followed to ensure that the research is conducted at the highest level of integrity, quality and transparency. The data management plan will describe the data management life cycle for the data to be collected, processed and generated in SPROUT; information on the handling of research data during & after the end of the project; what data will be collected, processed and/or generated; which methodology & standards will be applied; whether data will be shared/made open access and; how data will be curated & preserved (including after the end of the project). The plan will evolve during the lifetime of the project in order to present the status of the project's reflections on data management and whenever significant changes arise, such as for example new data, changes in consortium policies (e.g. new innovation potential, decision to file for a patent), or changes in consortium composition and external factors (e.g. new consortium members joining or old members leaving).

Task 9.4 – SPROUT’s overall impact assessment (M35-M36) – Participation: ZLC (Leader), UPM, CERTH, VUB, Valencia, VPF, NSCIIC, NBUT, BKK, CDPA, VIU, TLV, TECHNION, ILIM, KALISZ, MoI, MECH, ARAD, HTB, IDFrance, CMA, AGENEAL, WMCA, GOT, ZLC(MPLS), NSCIIC(NBCC).

In this task, an overall assessment of SPROUT’s outputs will be performed, by employing a broad participatory approach involving external stakeholders as assessors of the extent to which the project has achieved its foreseen impacts, i.e.:

- to produce new, practice-based knowledge on how to navigate urban mobility policy through transition, taking into account legacy systems & the need to integrate new solutions that are at different levels of maturity
- to provide added value inputs and contribute to evidence-based policy making at local, regional, national and EU levels
- to support effectively mobility policies and a viable transformation path towards sustainable mobility.

The targeted pilot impacts will be used (among others) for assessing the overall impact of the project.

Participation per Partner

Partner number and short name	WP9 effort
1 - ZLC	12.50
2 - UPM	3.00
3 - CERTH	10.00
4 - VUB	2.50
5 - POLIS	2.00
6 - WI	2.00
7 - VALENCIA	0.50
8 - VPF	0.50
10 - NSCIIC	1.00
11 - NBUT	0.50
12 - BKK	0.50
14 - CDPA	0.50
15 - VIU	0.50
16 - TLV	0.50

Partner number and short name	WP9 effort
17 - TECHNION	0.50
18 - ILiM	0.50
19 - KALISZ	0.50
21 - MoI	0.50
22 - MECH	0.50
23 - ARAD	0.50
24 - HTB	0.50
25 - IDFrance	0.50
26 - CMA	0.50
27 - AGENEAL	0.50
28 - WMCA	0.50
29 - GOT	0.50
Total	42.50

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D9.1	Project Management Plan	1 - ZLC	Report	Public	2
D9.2	Project Management Plan - 1st reporting period status	1 - ZLC	Report	Public	18
D9.3	Project Management Plan - 2nd reporting period status	1 - ZLC	Report	Public	36
D9.4	Data Management Plan (DMP)	1 - ZLC	ORDP: Open Research Data Pilot	Public	6
D9.5	Risk & Quality Assessment Report	3 - CERTH	Report	Public	6
D9.6	Project final report	3 - CERTH	Report	Public	36
D9.7	SPROUT's impact assessment	1 - ZLC	Report	Public	36

Description of deliverables

D9.1 (D57) - "Project Management Plan". The deliverable will include the main rules, conventions and approaches to be used by the partners for inter-project coordination, besides from a Gantt chart and a Work Breakdown Structure (WBS), as well as a schedule per task, responsible partner related subtasks, related deliverables, and dependencies on other tasks. It presents the results of T9.1 and 9.2.

D9.2 (D58) - "Project Management Plan - 1st reporting period status". This deliverable is a revision of D9.1a. It presents the results of T9.1 and 9.2.

D9.3 (D59) - "Project Management Plan - 2nd reporting period status". This deliverable is a revision of D9.1a and b. It presents the results of T9.1 and 9.2.

D9.4 (D60) - "Data Management Plan (DMP)". The deliverable will cover ethical and data management issues over the project duration. As SPROUT will take part in the Pilot on Open Research Data a Data Management Plan (DMP) will be prepared to ensure a good data management. It is managed under T9.3.

D9.5 (D61) - "Data Management Plan (DMP) - 1st year status". This deliverable is a revision of D9.2a. It is managed under T9.3.

D9.6 (D62) - "Data Management Plan (DMP) - 2nd year status". This deliverable is a revision of D9.2b. It is managed under T9.3.

D9.7 (D63) - "Data Management Plan (DMP) - Final status". This deliverable is a revision of D9.2c. It is managed under T9.3.

D9.8 (D64) - "Risk & Quality Assessment Report". The deliverable will report on the quality of the project's results and any risks foreseen/addressed. It is addresses in T9.2.

D9.9 (D65) - "Risk & Quality Assessment Report - 1st year status". The deliverable will report on the quality of the project's results and any risks foreseen/addressed. It is addresses in T9.2.

D9.10 (D66) - "Risk & Quality Assessment Report - 2nd year status". The deliverable will report on the quality of the project's results and any risks foreseen/addressed. It is addresses in T9.2.

D9.11 (D67) - "Risk & Quality Assessment Report - Final status". The deliverable will report on the quality of the project's results and any risks foreseen/addressed. It is addresses in T9.2.

D9.12 (D68) - "Project final report". The deliverable will present the final project results in a concise way. It is managed in T9.2.

D9.13 (D69) - "SPROUT's impact assessment". The deliverable will present an overall assessment of the project outputs. It is managed in T9.4.

D9.1 : Project Management Plan [2]

The deliverable will include the main rules, conventions and approaches to be used by the partners for inter-project coordination, besides from a Gantt chart and a Work Breakdown Structure (WBS), as well as a schedule per task, responsible partner related subtasks, related deliverables, and dependencies on other tasks. It presents the results of T9.1 and 9.2.

D9.2 : Project Management Plan - 1st reporting period status [18]

This deliverable is a revision of D9.1. It presents the results of T9.1 and 9.2.

D9.3 : Project Management Plan - 2nd reporting period status [36]

This deliverable is a revision of D9.2. It presents the results of T9.1 and 9.2.

D9.4 : Data Management Plan (DMP) [6]

The deliverable will cover ethical and data management issues over the project duration. As SPROUT will take part in the Pilot on Open Research Data a Data Management Plan (DMP) will be prepared to ensure a good data management. It is managed under T9.3.

D9.5 : Risk & Quality Assessment Report [6]

The deliverable will report on the quality of the project's results and any risks foreseen/addressed. It is addresses in T9.2.

D9.6 : Project final report [36]

The deliverable will present the final project results in a concise way. It is managed in T9.2.

D9.7 : SPROUT's impact assessment [36]

The deliverable will present an overall assessment of the project outputs. It is managed in T9.4.

Schedule of relevant Milestones

Milestone number¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS14	Data Management Plan	1 - ZLC	6	DMP submitted to the EC (D9.4). Reviews at M12 (D9.6), M24 (D9.6), M36 (D9.7)
MS15	Risk and quality control & management procedures implemented	3 - CERTH	6	Compliance to D9.8, Reviews at M12 (D9.9), M24 (D9.10), M36 (D9.11)
MS16	Final report	3 - CERTH	36	Project final report submitted to the EC (D9.12)

1.3.4. WT4 List of milestones

Milestone number ¹⁸	Milestone title	WP number ⁹	Lead beneficiary	Due Date (in months) ¹⁷	Means of verification
MS1	City profiles and transition drivers (1st & 2nd layer cities)	WP2	4 - VUB	5	Submitted reports to the EC (D2.1, D2.2 and D2.3)
MS2	SPROUT future mobility scenarios	WP3	4 - VUB	5	Submitted reports to the EC (D2.1, D2.2 and D2.3)
MS3	Pilots set-up	WP4	1 - ZLC	12	Submitted reports to the EC (D4.2, D4.4, D4.6, D4.8, D4.10, D4.12)
MS4	Pilots impacts & city-specific policies	WP4	1 - ZLC	20	Submitted reports to the EC (D4.3, D4.5, D4.7, D4.9, D4.11, D4.13)
MS5	Validation of the applicability of the pilot city-specific policies	WP5	5 - POLIS	22	Submitted report to the EC (D5.1)
MS6	SPROUT city-led innovative policy response	WP5	5 - POLIS	26	Submitted report to the EC (D5.3)
MS7	Urban mobility shared data space	WP6	6 - WI	29	Submitted report to the EC (D6.1)
MS8	Training activities	WP6	3 - CERTH	33	Training workshop and E-learning webinars executed successfully in T6.4 (D6.4, D6.5, D6.6)
MS9	European strategy on urban mobility policy	WP7	3 - CERTH	32	Submitted report to the EC (D7.3)
MS10	Open Innovation Community initial set-up	WP8	2 - UPM	2	Submitted report to the EC (D8.1). Reviews at M13 (D8.2), M24 (D8.3), and M36 (D8.4)
MS11	Dissemination & Communication strategy and dissemination plan	WP8	5 - POLIS	2	Dissemination plan submitted to the EC (D8.6). Reviews at M12 (D8.7), M24 (D8.8), M36 (D8.9).
MS12	Exploitation strategy	WP8	5 - POLIS	12	Exploitation strategy submitted to the EC (D8.15). Reviews at M24 (D8.16), M36 (D8.17)
MS13	SPROUT website	WP8	5 - POLIS	3	Public access to a fully functional website (D8.10)
MS14	Data Management Plan	WP9	1 - ZLC	6	DMP submitted to the EC (D9.4). Reviews at M12 (D9.6), M24 (D9.6), M36 (D9.7)

Milestone number¹⁸	Milestone title	WP number⁹	Lead beneficiary	Due Date (in months)¹⁷	Means of verification
MS15	Risk and quality control & management procedures implemented	WP9	3 - CERTH	6	Compliance to D9.8, Reviews at M12 (D9.9), M24 (D9.10), M36 (D9.11)
MS16	Final report	WP9	3 - CERTH	36	Project final report submitted to the EC (D9.12)

1.3.5. WT5 Critical Implementation risks and mitigation actions

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
1	Budget is not spent efficiently or contributors do not deliver according to the plan (L: Low; I: High)	WP9	Preventive actions: (i) Work progress will be monitored through a close follow-up by the coordinator and the review meetings with the work package leaders; (ii) Deviations from the work plan and budget will be identified on short term through the work in Task 8.1. Corrective actions: (i) Compliance will be followed up through technical coordination, risk & quality control & management; (ii) The Consortium Agreement will provide tools to react in a timely manner and redistribute work and/or budget.
2	Stakeholders will not reveal information due to IPR issues (L: Low; I: High)	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP9	Preventive actions: All considerations should regard precompetitive developments and data confidentiality will be taken into consideration.
3	No adequate data quantity/ quality for the Urban Mobility shared Data Space (L: Medium; I: High)	WP6	Preventive actions: SPROUT has already undertaken a survey of readily available data in each one of the project cities. Corrective actions: Engage the 3rd layer cities as data providers
4	Stakeholder network does not represent all relevant stakeholders (L: Low; I: Medium)	WP2, WP3, WP4, WP5, WP6	Preventive actions: A large number of cities has already indicated their interest through LoS in the project and their capability to bring on board all required stakeholders. Corrective actions: Additional stakeholders will be identified through a stakeholder analysis in T2.3 for each pilot city and engaged if required
5	Lack of interest of stakeholders to participate in Local Innovation Forums, difficulty to achieve a critical mass of participants (L: Medium; I: Medium)	WP2, WP3, WP4	Preventive actions: SPROUT will deploy a proactive communication strategy to all relevant stakeholders and use existing networks & contacts to quickly identify key players and to engage them. Corrective actions: All city partners have strong local knowledge & contacts to further exploit if needed
6	Lack of (or change in) interest of city authorities in the project (L: Low; I: High)	WP4, WP5	Preventive actions: All city partners have already signed an internal letter of commitment in which they state their willingness to engage in and promote stakeholder-involvement. Corrective actions: The project will reassess its communication strategy and revise messages & activities
7	Transferability towards 2nd layer cities fails (L: Medium; I: High)	WP5	Preventive actions: SPROUT will build upon the transferability methodology developed and deployed successfully in the TIDE project. Corrective actions: 3rd layer cities will be contacted to substitute current 2nd layer cities. Several of these already showed interest in participating as partners.
8	Key staff becomes unavailable; e.g. project manager, WP-leaders (e.g.	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	Preventive actions: (i) Key staff will be assisted by team-members to ensure continuity and redundancy; (ii) A project-wide system for project

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
	because of sickness, job change) (L: Medium; I: Medium)		documentation and document control will be established to ensure already generated knowledge is not lost. Corrective actions: All lead partners have several experienced project managers with capacity to replace unavailable staff.
9	Communication flows are not fluent considering the complex network of partners, 2nd and 3rd layer cities and OIC which could but in danger the quality of the work executed	WP1, WP2, WP3, WP4, WP5, WP6, WP7, WP8, WP9	Preventive actions: The proposed organisational project management and decision-making structure is adapted to optimise the communication flows and ensure that each of the involved groups have a single contact point.

1.3.6. WT6 Summary of project effort in person-months

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total Person/Months per Participant
1 - ZLC		3.50	5	20	10.50	11.75	6	5.50	12.50	74.75
2 - UPM		3	2	0	2	3	2.50	8.50	3	24
3 - CERTH		1.75	9	14.50	7	14	10	7.50	10	73.75
4 - VUB		6	13	10	3	6	3	4.50	2.50	48
5 - POLIS		1	1	0	7	1	2	8	2	22
6 - WI		1	3.50	0	2	10	5.50	8	2	32
7 - VALENCIA		0.50	1.75	2	0.50	1.50	0	1	0.50	7.75
8 - VPF		0.50	1.75	12	3	1	0	2	0.50	20.75
9 - FGV		0.50	1.75	6	0	1	0	1	0	10.25
10 - NSCIIC		1	3.50	14.50	3	2	3	2	1	30
11 - NBUT		0.50	1.75	7.25	1.50	2	1.50	1	0.50	16
12 - BKK		0.50	1.75	10	1.50	2	0	1	0.50	17.25
13 - BPKOZUT		0.50	1.75	10	1.50	0.50	0	1	0	15.25
14 - CDPA		0.50	1.75	16	1.50	2	0	1	0.50	23.25
15 - VIU		0.50	1.75	15	3.50	0.50	0	1	0.50	22.75
16 - TLV		0.50	1.75	8	1.50	2	0	1	0.50	15.25
17 - TECHNION		0.50	1.75	12	1.50	0.50	0	1	0.50	17.75
18 - ILiM		0.50	3	10	1.50	0.50	0	1	0.50	17
19 - KALISZ		0.50	1.75	8	1.50	2	0	1	0.50	15.25
20 - KALISZBIF		0.50	0.50	2	0	0	0	1	0	4
21 - MoI		1.50	0	0	2.50	7.25	0	1	0.50	12.75
22 - MECH		0.50	0	0	2.50	6.75	0	1	0.50	11.25
23 - ARAD		1.50	0	0	2.50	7.25	0	1	0.50	12.75

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total Person/Months per Participant
24 - HTB		0.50	0	0	2.50	6.75	0	1	0.50	11.25
25 - IDFrance		1.50	0	0	2.50	7.25	0	1	0.50	12.75
26 - CMA		0.50	0	0	2	3.50	0	1	0.50	7.50
27 - AGENEAL		0.50	0	0	2	3.50	0	1	0.50	7.50
28 - WMCA		0.50	0	0	2.50	6.75	0	1	0.50	11.25
29 - GOT		0.50	0	0	2.50	6.75	0	1	0.50	11.25
Total Person/Months		31.25	59.75	177.25	75	119	33.50	67	42.50	605.25

1.3.7. WT7 Tentative schedule of project reviews

Review number ¹⁹	Tentative timing	Planned venue of review	Comments, if any
RV1	18	Brussels (TBC)	
RV2	36	Brussels	

1. Project number

The project number has been assigned by the Commission as the unique identifier for your project. It cannot be changed. The project number **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

2. Project acronym

Use the project acronym as given in the submitted proposal. It can generally not be changed. The same acronym **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

3. Project title

Use the title (preferably no longer than 200 characters) as indicated in the submitted proposal. Minor corrections are possible if agreed during the preparation of the grant agreement.

4. Starting date

Unless a specific (fixed) starting date is duly justified and agreed upon during the preparation of the Grant Agreement, the project will start on the first day of the month following the entry into force of the Grant Agreement (NB : entry into force = signature by the Commission). Please note that if a fixed starting date is used, you will be required to provide a written justification.

5. Duration

Insert the duration of the project in full months.

6. Call (part) identifier

The Call (part) identifier is the reference number given in the call or part of the call you were addressing, as indicated in the publication of the call in the Official Journal of the European Union. You have to use the identifier given by the Commission in the letter inviting to prepare the grant agreement.

7. Abstract

8. Project Entry Month

The month at which the participant joined the consortium, month 1 marking the start date of the project, and all other start dates being relative to this start date.

9. Work Package number

Work package number: WP1, WP2, WP3, ..., WPn

10. Lead beneficiary

This must be one of the beneficiaries in the grant (not a third party) - Number of the beneficiary leading the work in this work package

11. Person-months per work package

The total number of person-months allocated to each work package.

12. Start month

Relative start date for the work in the specific work packages, month 1 marking the start date of the project, and all other start dates being relative to this start date.

13. End month

Relative end date, month 1 marking the start date of the project, and all end dates being relative to this start date.

14. Deliverable number

Deliverable numbers: D1 - Dn

15. Type

Please indicate the type of the deliverable using one of the following codes:

R	Document, report
DEM	Demonstrator, pilot, prototype
DEC	Websites, patent filings, videos, etc.
OTHER	
ETHICS	Ethics requirement
ORDP	Open Research Data Pilot
DATA	data sets, microdata, etc.

16. Dissemination level

Please indicate the dissemination level using one of the following codes:

- PU Public
- CO Confidential, only for members of the consortium (including the Commission Services)
- EU-RES Classified Information: RESTREINT UE (Commission Decision 2005/444/EC)
- EU-CON Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC)
- EU-SEC Classified Information: SECRET UE (Commission Decision 2005/444/EC)

17. Delivery date for Deliverable

Month in which the deliverables will be available, month 1 marking the start date of the project, and all delivery dates being relative to this start date.

18. Milestone number

Milestone number: MS1, MS2, ..., MSn

19. Review number

Review number: RV1, RV2, ..., RVn

20. Installation Number

Number progressively the installations of a same infrastructure. An installation is a part of an infrastructure that could be used independently from the rest.

21. Installation country

Code of the country where the installation is located or IO if the access provider (the beneficiary or linked third party) is an international organization, an ERIC or a similar legal entity.

22. Type of access

- VA if virtual access,
- TA-uc if trans-national access with access costs declared on the basis of unit cost,
- TA-ac if trans-national access with access costs declared as actual costs, and
- TA-cb if trans-national access with access costs declared as a combination of actual costs and costs on the basis of unit cost.

23. Access costs

Cost of the access provided under the project. For virtual access fill only the second column. For trans-national access fill one of the two columns or both according to the way access costs are declared. Trans-national access costs on the basis of unit cost will result from the unit cost by the quantity of access to be provided.

DoA Part B

Title of the proposal: *Sustainable Policy RespOnse to Urban mobility Transition*

Acronym: *SPROUT*

Topic: *LC-MG-1-3-2018: Harnessing and understanding the impacts of changes in urban mobility on policy making by city-led innovation for sustainable urban mobility*

Type of action: *RIA – Research and Innovation Action*



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1 | Excellence

1.1 Objectives

1.1.1 Urban mobility challenges & requirements for addressing them

Globally, 54% of the world's population was residing in urban areas in 2014 and this share is expected to increase to 66% by 2050. Europe is the third most urbanised region in the world (following Northern America and Latin America & the Caribbean), with its urban population expected to increase from 73% in 2014 to over 80% in 2050¹. As the world continues to urbanise, ***sustainable development challenges will be increasingly concentrated in cities***. Air pollution, road congestion, travelling costs, accidents and noise pollution are considered as the important urban problems by a strong majority of Europeans. At the same time less than a quarter of them believe that the urban traffic situation will improve in the future and the majority considers that the city authorities are mainly responsible for improving this², therefore pressing for effective local policies. Furthermore, an ***increasing 'urban mobility gap'*** can be observed, between Europe's few advanced cities and the majority trailing behind. The EU's policy response to address urban transport problems goes a long way, from the Green Paper 'Towards a new culture for urban mobility'³ in 2007, to the White Paper 'Roadmap to a Single European Transport Area'⁴ in 2011, to the Urban Mobility Package⁵ in 2013, the 'Urban Agenda for the EU'⁶, and the 'European Strategy for Low-Emission Mobility'⁷ in 2016. However, ***although policy initiatives have evolved*** considerably since 2007, ***user needs and perceptions keep changing at a faster pace***, and thereby they continuously bring new fundamental shifts in urban transport. Today, transport users require even higher service personalisation, are increasingly more interested in using services than ownership of vehicles, and are willing to share private information (through social media) in return for more efficient and environmentally sustainable transport. The recent financial crisis has also played a role in that, having created a supply-side push from people seeking work opportunities and a demand-side pull from consumers seeking cheaper alternative transportation services. This has accelerated the ***emergence of the collaborative economy***, unlocking the value of existing resources and avoiding the need for additional capital expenditure⁸. At the same time, ***new business models, enabled by digital technologies, are changing the landscape*** of ***urban transport services*** for both passengers and goods. For example: (1) it has taken only a few years for intermediaries for 'hire car with driver' services such as Uber to get established in cities around Europe, blurring the lines between intermediaries and transport service providers⁹; (2) dockless bike sharing systems are flooding European cities and this trend is going to intensify as global players such as Ofo, Mobike, oBike and LimeBike are expanding into Europe; (3) last-mile delivery is experiencing a wide spectrum of new business models either focusing on a specific part of an urban area for delivering everyday goods in a very short time span (e.g. Deliveroo's or Delivery Hero's hyper-local logistics services), or on integrating the city dweller in the delivery process (e.g. PigyBee's, UberEats' or DHL MyWays' crowd delivery services), or using spare public transport capacity for cargo delivery (cargo hitching). The changing urban mobility environment places a considerable challenge for urban policy making as ***little is known about changing user needs. Also, the new business models do not fit clearly within the existing national, local and sectoral rules, their policy impacts, environmental, social or economic benefits are still unclear***. Cities, rather than national governments, are more likely to lead change and innovation in the transport system, as they have more regulatory freedom to deal with innovative transport providers, are better aware of the city-specific innovation aspects, and can at the same time stimulate urban mobility innovation and ensure the delivery of social benefits. However, one of the hardest questions to answer when looking at the future is ***how change is to be organised and paid for without***

¹ United Nations (2015) *World Urbanization Prospects: The 2014 Revision*

² EC (2013) *Attitudes of Europeans Towards Urban Mobility*, Special Eurobarometer Study 406

³ EC (2007) *Towards a new culture for urban mobility*, COM(2007) 551

⁴ EC (2011) *Roadmap to a Single European Transport Area*, COM(2011) 144

⁵ EC (2013) *Together Towards Competitive and Resource-Efficient Urban Mobility*, COM(2013) 913

⁶ EC (2017) *Report from the Commission to the Council on the Urban Agenda for the EU*, COM(2017) 657

⁷ EC (2016) *A European Strategy for Low-Emission Mobility*, COM(2016) 501

⁸ EC (2016) *European Agenda for the Collaborative Economy - Supporting Analysis*, SWD(2016) 184

⁹ EC (2016) *Study on passenger transport by taxi, hire car with driver and ridesharing in the EU*, MOVE/D3/SER/2015-564/SI2.715085

spending extra public money. Furthermore, until now, policy responses were undertaken at the Member State level (with different regulatory approaches) focusing on issues such as market access, employment and taxation, while leaving the equally important policy challenges at the local/urban level widely unaddressed. This became evident for example in Amsterdam when the city authority ordered dockless bike sharing companies to remove their bikes from the city by November 3 2017, saying it needs time to develop regulations, or in Paris when Mayor Anne Hidalgo summoned the operators to a November 16 2017 meeting to explain how they will handle abandoned and damaged cycles¹⁰. Implementing an effective urban mobility policy becomes *even more challenging in the case of urban freight*, as *accessing data is problematic*. Little ongoing public data collection about urban freight operations occurs¹¹; to a large extent due to the proprietary (commercially sensitive) nature of freight data and the required involvement of a large number of economic actors in a fragmented industry. Furthermore, there are still no standards in Europe that would unify the way of gathering the data collected, nor a common understanding of the minimum data requirements that consider the maturity of the city in urban transport terms¹². As a consequence, urban freight policy is too often based on insufficiently detailed analysis and repetition of regulatory initiatives regardless of local characteristics and dynamics¹³. Although data problems are less intense in passenger mobility, the data collection has its limitations: it shows how people are using transport now, but not how they would use it in the future. Furthermore, it is increasingly recognised that *urban planners and policy-makers lack an effective approach to anticipate future transformations*¹⁴. Also, *understanding behaviour is a critical requirement* of any attempt to foresee the impacts of change in a complex environment such as the urban transportation one, and to respond through policy. This requirement becomes even more critical in urban freight transport where, (a) instead of a primary decision maker, as in the case of passenger transport, multiple decision makers influence the transport decisions, and (b) behavioural research is in its infancy¹⁵. However, given the increasing availability of sensors and IoT applications in cities, one might face in the following years the paradox of the present problem being reversed to one of excess of data¹⁶. This will bring the *urgent need for building local capacity* to surface on issues such as (big) data manipulation/mining and data interpretation/forecasting.

Also, one must not forget that passenger and freight transport do not take place in isolation. Their *interaction in an urban setting is a topic that has not received considerable attention so far*¹⁷. Although it is recognised that to reach sustainable urban transport, integrated transport planning is a prerequisite, freight is rarely explicitly included as a component of this integration¹⁸ and the respective sustainability opportunities remain unexploited. Looking at the very nature of the emerging urban mobility solutions, it becomes clear that *previously tested and implemented policy responses*¹⁹ employing access restrictions, congestion charging or infrastructure provision, *are not adequate to address the changes underway*. *What is required therefore, is a new, city-led innovative policy response* that considers all previously described limitations and shortcomings, and embeds the following requirements (RE²⁰):

¹⁰ MATLACK, C. et al (2017) Bike-Sharing Upstarts Are Flooding Europe With Cheap Cycles, *Bloomberg Business Week*, Nov. 10

¹¹ EC (2017) *Indicators and Data Collection Methods on Urban Freight Distribution*, Non-binding guidance documents on urban logistics, no 6/6

¹² KIBA-JANIAK, M. (2017) Urban Freight Transport in City Strategic Planning, *Research in Transportation Business & Management*, 24, pp. 4-16

¹³ VAN DUIN, J. and QUAKE, H. (2007) City logistics: A chaos between research and policy making? A review, in C. Brebbia (Ed.), *Urban Transport and the Environment in the 21st Century*, pp. 135-146

¹⁴ RATCLIFFE, J. and KRAWCZYK, E. (2011) Imagineering city futures: The use of Prospective through Scenarios in Urban Planning, *Futures*, 43 (7), pp. 642-653

¹⁵ HOLGUIN-VERAS, J. et al (2017) Urban Freight Policymaking: The Role of Qualitative and Quantitative Research, *Transport Policy*, 56, pp. 75-85

¹⁶ LAGORIO, A. et al (2016) Research in urban logistics: a systematic literature review, *International Journal of Physical Distribution & Logistics Management*, 46 (10), pp. 908-931

¹⁷ CUI, J. et al (2015) Planning for Urban Freight Transport: An Overview, *Transport Reviews*, 35 (5), pp. 583-598

¹⁸ BROWNE, M. et al (2007) *Literature Review WM9: Part I - Urban Freight Transport*, Green Logistics Project

¹⁹ ANDERSON, S. et al (2005) Urban logistics - How can it meet Policy Makers' Sustainability Objectives? *Journal of Transport Geography*, 13 (1), pp. 71-81

²⁰ RE = requirements to be embedded in a new, city-led urban mobility policy response

- Addresses all stages of the policy lifecycle, from understanding urban mobility, through harnessing impacts, to building local capacity for the future (RE1);
- Includes the needs of both passenger and freight urban mobility systems (RE2);
- Reconciles the needs of multiple stakeholders and generates new value out of apparent conflicts of interest (RE3);
- Harmonises urban policy data requirements, considering both data poor and data rich urban mobility settings (RE4);
- Recognises the interactions among the various policies in an urban area, e.g. mobility, land use, vulnerable users' protection (RE5);
- Integrates quantitative (e.g. big data) solutions providing insight into the functioning of urban mobility systems, with qualitative approaches enabling to anticipate impending transformations (RE6).

Delivering such a policy response is at the heart of SPROUT.

1.1.2 Project aim and objectives

To address the challenges/requirements outlined in the previous section and to reach the expected impacts of LC-MG-1-3-2018, SPROUT aims to ***produce new and practice-based knowledge & tools to navigate urban mobility policy through transition***, and to use this to ***contribute to an evidence-based policy making at local/regional, national & EU levels***. To achieve its aim, the project will pursue the following detailed project objectives (PO²¹) with the corresponding key challenges, tangible outputs and achievement indicators:

(PO1) Understand the transition in European urban mobility, by quantifying the current status, and defining the transition drivers to the future.

Key challenges: A lack of understanding of changes underway in the urban transportation environment (especially freight); Problematic and unstandardized access to data on urban freight operations.

Tangible outputs: Quantified assessment of the current state of the urban mobility environment and definition of parameters driving its transition to the future involving stakeholders (WP2).

Achievement indicators: Results validated by the project's 15 (1st & 2nd layer) cities and 2 city networks (POLIS, Civitas).

(PO2) Foresee and determine the impact of urban mobility drivers on urban policy.

Key challenges: Unknown impacts of the new technologies, business models and user needs, on urban transport and sustainability.

Tangible outputs: Stakeholder co-created future urban mobility scenarios for 6 pilot cities and 2 time-horizons (2025, 2030). Analysis of impacts of future urban mobility scenarios in case the current policies remain unchanged (WP3).

Achievement indicators: Narrative and graphical city-specific future scenarios are validated by the project's 6 pilot cities.

(PO3) Formulate a city-led innovative policy response, that is widely applicable to European cities, to navigate urban mobility in transition:

Key challenges: Sustainable development challenges are increasingly concentrated in cities; The impacts of emerging transport solutions are unclear and therefore not being addressed (or are inadequately addressed) by the current urban policy instruments; The traditional regulatory role of cities is not adequate anymore.

Tangible outputs: 6 city pilots (WP3); Evaluation reports of the 6 city pilots with focus on the impact on economic, environmental & social sustainability as well as stakeholder support (WP4); Recommendations of 6 pilot-verified, urban policy responses to specific emerging new mobility solutions (WP4); the 'SPROUT city-led innovative policy response', widely applicable to European cities, addressing the issues of better understanding, better regulation and better financing (WP5).

Achievement indicators: 6 validated pilot impact assessment results. City-specific policy responses, tested by the project's 6 pilot cities. 'SPROUT city-led innovative policy response', validated by the project's 40 (1st,

²¹ PO = Project Objectives

2nd & 3rd layer) cities, 2 city networks (POLIS, Civitas). and the Open Innovation Community.

(PO4) Provide tools to contribute to an evidence-based policy making and enhance local policy making capacity.

Key challenges: Urban policy data requirements are not harmonised. Previous definitions of data requirements did not consider the actual capabilities of data-poor and data-rich cities; User needs & transport solutions changing at a faster pace than policy initiatives, therefore a data-driven approach is required to anticipate impending urban mobility transformations; Need for building local policy making capacity in deploying new mobility solutions to close the urban mobility gap between European cities.

Tangible outputs: Proposal for a minimum set of data to drive an evidence-based urban mobility policy making (WP6); Urban mobility shared data space for both passenger and freight transport (WP6); Big & small data-driven approach for scanning weak signals of emerging urban trends (WP6); Urban policy toolbox for building cities' capacity on recognising the appropriate uses of additional tools not produced by the project; Capacity building workshops, webinars and courses in deploying tools and in designing and implementing urban mobility policies, to be delivered to cities (WP6).

Achievement indicators: Policy support tools, validated by the project's 15 (1st & 2nd layer) cities. Capacity building and training activities provided to the project's 37 (1st, 2nd & 3rd layer) cities.

(PO5) Navigate future policy by channelling project results into future EU policy initiatives.

Key challenges: Future policies should be informed at an early stage of the impacts of emerging transport solutions; Emerging mobility innovations place multiple challenges on the SUMP instruments; a European strategy to navigate urban mobility policy through transition is required; As R&I are increasingly interlinked internationally, cooperation with third countries in R&I can strengthen the impact of EU urban mobility policies.

Tangible outputs: An adapted SUMP-based policy response (WP7); Urban Agenda policy briefs (WP7); A European strategy to navigate urban mobility policy through transition (WP7); An agenda of international cooperation on urban mobility policy issues between the EU, China, and the US (WP7).

Achievement indicators: Proposal for revised SUMP Guidelines validated by the Open Innovation Community; Draft Roadmap for 'A European strategy to navigate urban mobility policy through transition' accepted by the EC's EU, US, China international cooperation agenda on urban mobility policy, validated by the Open Innovation Community.

Table 1: SPROUT objectives and related measurable results

1.2 Relation to the work programme

Both SPROUT's objectives and content are fully in line with the challenges and scope of the H2020 topic 'LC-MG-1-3-2018' as shown below²².

1. ***“Research is necessary to improve the understanding of the impacts of new urban mobility solutions on policy making”***. SPROUT has used the experience of its project member cities as a major source for identifying a set of emerging urban transport solutions (at different levels of maturity), with unclear policy impacts. By using these as the basis of its pilot scenarios the project will provide a better understanding of their impacts on policy making.
2. ***“Proposals will produce new, practice-based knowledge on how to navigate urban mobility policy through transition”***. SPROUT will deliver a city-led innovative policy response co-created with city stakeholders: first at the individual pilot city level (WP4) and then at the European level (WP5), thereby providing answers to the open questions about how policymakers should react and how SUMPs and other sectorial policies that affect urban mobility, should respond and adapt.
3. ***“Passenger transport and freight transport, and urban and peri-urban areas, should be covered”***. SPROUT incorporates a balanced mix of pilots (Figure 5), covering passenger, freight, and combined passenger & freight transport. This balanced mix is reflected also in the geographical focus of the pilots, including hyper-local, urban, and peri-urban areas.

²² In bold italic characters are the exact parts from the call text

4. ***“City-led proposals should address one or more of the following:… the specific challenges in areas undergoing rapid economic change; new operating & business models in collective public & private transport; implications for and interaction with urban planning and design including inputs for developing SUMP’s”.*** SPROUT is a city-led project, as it employs a 3-layer cities’ engagement throughout its work, guiding and contributing to its work and validating its outputs. It incorporates as part of its pilots’ mobility solutions and respective policy response requirements that have emerged from the real necessities of the participating cities.. Moreover, SPROUT addresses as part of its pilots: challenges in areas undergoing rapid economic change (Valencia, Padua, Ningbo); new operating business models (Valencia, Padua, Kalisz, Budapest, Tel Aviv, Ningbo); interactions with urban planning & design (Valencia, Padua, Budapest, Tel Aviv, Ningbo); and inputs for developing/revising SUMP’s (Valencia, Padua, Kalisz, Budapest, Tel Aviv, Ningbo).
5. ***“Special attention should be paid to the needs of vulnerable groups and users with different cultural backgrounds taking into account gender issues”.*** SPROUT pays special attention to the needs of vulnerable groups and users with different cultural backgrounds taking into account gender issues and embeds those special needs into its proposed city-led policy response. Figure 5 shows the focus of the special user groups for each pilot that will be tested in SPROUT.
6. ***“Proposals should incorporate new data-driven planning approaches”.*** SPROUT embeds a data-driven approach that integrates data sources and data sense-making tools to support urban mobility policy making with adequate evidence, and ultimately enhance cities’ knowledge and policy making capacity.
7. ***“The actions will also deliver at least three validated test cases (small pilot projects with quantified objectives in which public stakeholders and economic actors participate) that take into account different political and socio-economic contexts”.*** SPROUT has setup six pilot projects, reflecting different political and socio-economic contexts. Quantified objectives have been setup for each pilot and public and economic actors have been enrolled either as projects partners or through Letters of Support²³. Further stakeholders and economic actors are to be involved through the creation of an Open Innovation Community related to urban mobility policies (WP8), the initial members of which have already been established²⁴.
8. ***“The active participation of a small number of representatives from authorities of small and medium-sized cities in proposals should be ensured”.*** The size of the SPROUT pilot cities ranges from 100,000 to 8 million covering small, medium-sized, and large cities. In addition, SPROUT ensures the active participation of numerous representatives from authorities of small and medium-sized cities through the 3-layer structure of cities’ involvement approach and the creation of an Open Innovation Community (OIC) gathering together stakeholders that are related to urban mobility policies.
9. ***“The results of the actions will feed into future EU initiatives”.*** SPROUT will provide a direct contribution to Sustainable Urban Mobility Planning and to the Urban Agenda for the EU. The specific contributions of SPROUT have been identified in WP7. To facilitate this contribution, project results will be translated into a form that can easily be channelled into existing and future EU initiatives, while information exchange mechanisms will be established at the beginning of the project with the respective policy working groups & fora.
10. ***“In line with the Union’s strategy for international cooperation in research and innovation international cooperation is encouraged, especially with the USA, China and India”.*** SPROUT has established cooperation mechanisms with city stakeholders from both China and the USA. In the first case, a pilot based in Ningbo (China) has been included in the project, while in the latter, Minnesota is a validation city. City stakeholders have joined the project team as project partners and representatives from US entities have agreed to be part of the OIC. Besides the knowledge to be gained with sharing pilot results between the EU and Chinese cities, SPROUT will provide an agenda for international cooperation on urban mobility policy issues between the EU, China, and the USA (WP7).

²³ Letters of Support are provided in Annex I

²⁴ Letter of Support are provided in Annex II

1.3 Concept and methodology

1.3.1 Concept

The currently available knowledge does not provide a clear understanding of the changes taking place in urban mobility and therefore current policies are not adequate to harness their impacts for ensuring a sustainable urban environment for the future. To address those shortcomings, SPROUT has gathered a multidisciplinary team comprised of cities, city networks, research organisations, and urban mobility stakeholders from Europe, China and the USA, to work collaboratively following a conceptual approach structured around five pillars and three facilitators (Figure 1).

SPROUT’s concept pillars are the following:

- **Understand** the transition taking place in urban mobility and the interaction among drivers and impacts.
- **Foresee** the impacts of emerging transport solutions on sustainability and policy in the future
- **Harness** the impacts of the changing urban mobility environment, through a city-led innovative policy response.
- **Build capacity** for the cities to identify and deploy innovative urban mobility solutions in the future
- **Navigate future policy** at local, regional, national and EU level, by enriching them with the project outputs.

SPROUT’s concept facilitators include:

- A **3-layer cities’ engagement** to contribute to the project as real-life test beds, validators, disseminators, and trainees of the project results.
- An **international cooperation structure** incorporating project partners from China and the USA for a two-way knowledge exchange.
- A **crowd-sourced participatory innovation approach**, involving urban mobility policy makers, economic operators, and researchers in the form of an **Open Innovation Community on Urban Mobility Policy**.

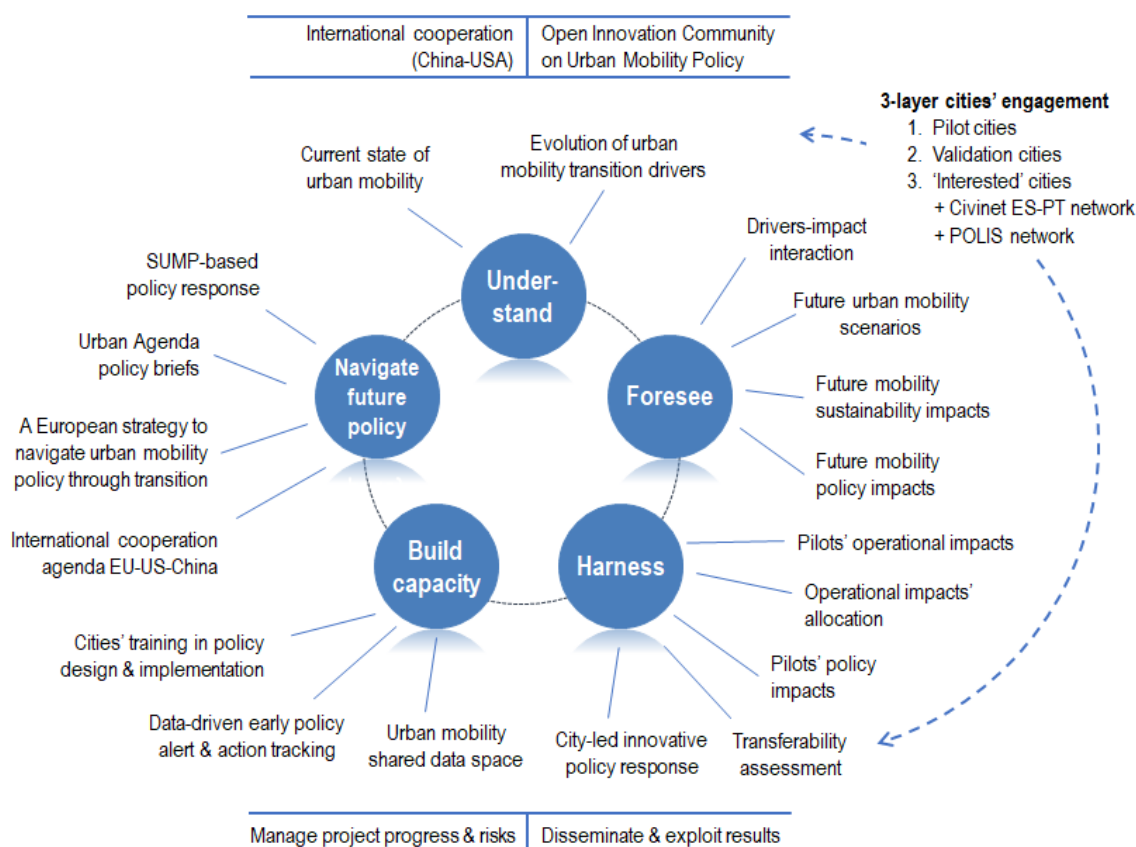


Figure 1: Project concept

The employment of the three SPROUT concept facilitators (the 3-layer cities' engagement, the OIC and the international cooperation structure), will ensure that the large knowledge base of projects and initiatives on which the project's approach has been structured, will serve as a central all-encompassing mechanism throughout its duration, as it will continuously feed the project work with knowledge and requirements from new projects and ideas as these become available.

More specifically, SPROUT's foresees that specific results from previous projects will serve as a starting base of its work in various WPs. These are presented in Table 8.

1.3.2 Methodology

1.3.2.1 Overall project methodology

SPROUT's overall project methodology is depicted in Figure 2. The upper part of the Figure shows the main components of the project work and their logical sequence towards building the project's added value. The lower part presents the main outputs of each work component (arrow start-point) and the subsequent stages these contribute to (arrow end-points). Also, the main outputs of SPROUT that are to be exploited (dotted arrows ending at exploitation phase) are shown. These will ensure that the positive impacts of the project continue even after its completion (and the project's value does not decrease after its end).

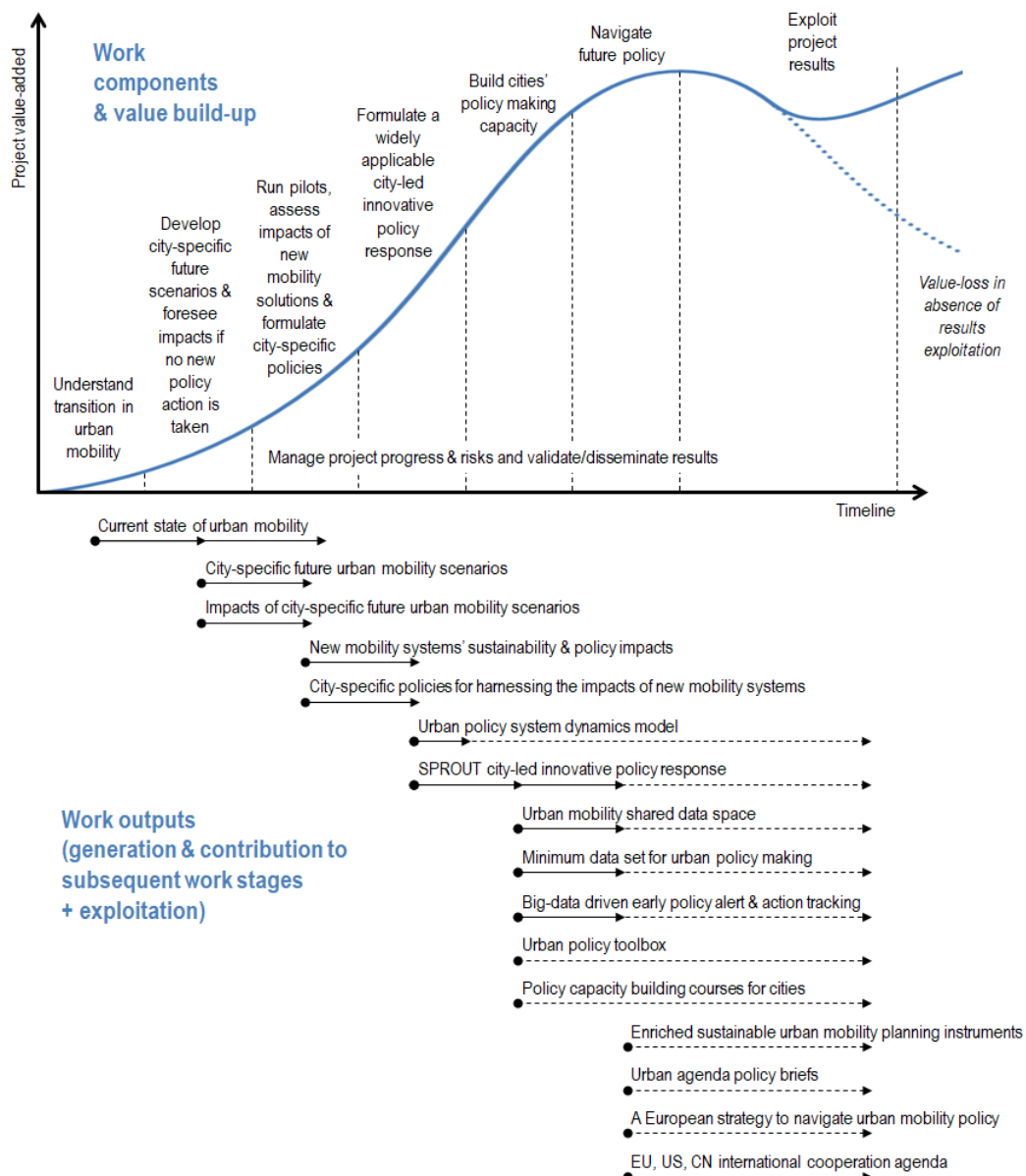


Figure 2: Overall project methodology

Each work component is linked to one of the project's conceptual pillars as identified in section 1.3.1. The questions to be answered by each work component and the specific theories, methodologies and tools to be employed are presented in Table 2.

Pillars of project concept	Work Components	Questions to be addressed	Theories, methods, tools to be employed
① <i>Understand</i>	Understanding transition in urban mobility (WP2)	What is the current state of urban mobility? What are the transition drivers? How do these evolve? Who are the stakeholders to be involved?	Desktop research, Benchmarking, Environmental technology and innovation scanning, Expert interviews, Media analysis, Focus group, WBCSD SMP Tool, Stakeholder analysis,
② <i>Foresee</i>	Determining the impacts of emerging urban mobility environments (WP3)	How is the urban mobility environment expected to evolve in the future? Which are their expected sustainability ²⁵ & policy impacts of this evolution, if the existing urban policies remain unchanged?	Participatory scenario planning, Driver interaction analysis, Cross-impact balance analysis, Consequence analysis, Scenario building workshops Narrative scenarios, Instant graphics, Storytelling
③ <i>Harness</i>	Pilots' setup, running & testing (WP4) Formulating a city-led innovative policy response (WP5)	Which are the detailed actions for the pilots to start? How are the pilot impacts going to be assessed? Which are the sustainability impacts of the emerging urban transport solutions tested in each pilot city? How are impacts in the pilot cities allocated among stakeholders? Which are the impacts on urban policy? Which are the policies required to harness the impacts of emerging urban mobility solutions in each pilot city? What should be the policy response at a European level, to the emerging urban mobility environment? How can urban mobility innovators overcome regulatory obstacles? How can better understanding, better regulation & better funding be achieved?	FESTA, Impact assessment, Economic & Socio-economic CBA, Policy analysis, Multi-Actor Multi-Criteria Analysis (MAMCA), Smart Freight Logistics Emissions Framework, CIVITAS Tools Inventory TIDE transferability methodology, Behavioural analysis, System dynamics modelling, Veto players theory, Local Innovation Fora, Policy packaging, Innovation deals
④ <i>Build capacity</i>	Building cities' policy making capacity (WP6)	How can cities' capacity to deploy innovative urban mobility solutions be enhanced? Which are the approaches & tools required? How can a data-driven approach be structured to	Weak signal scanning, Big data analysis, Webinars, Capacity building workshops, Veto players theory, Courses

²⁵ Throughout this document, the terms 'sustainability impacts' is used to describe the economic, environmental and social impacts

Pillars of project concept	Work Components	Questions to be addressed	Theories, methods, tools to be employed	
		enhance cities' policy making capacity?		
5	<i>Navigate future policy</i>	Navigating future policy (WP7)	How can project experiences enrich EU policies and cooperation agendas?	Policy scanning & analysis, Road mapping, Policy briefs
0		Project outcomes validation, transfer & exploitation (WP8)	How do we ensure that project outcomes are valuable to urban stakeholders, innovative enough and that they can be effectively transferred to other city settings?	Crowdsourced innovation, Open Innovation Community
		Project management (WP9)	How do we ensure that the project progresses as planned and risks are managed effectively?	Project management tools, Quality assurance, FERMA Standard
		Ethics (WP1)	How do we ensure that the ethics issues are managed effectively and according to EC rules and laws?	Project management tools, Assignment of Ethics Officer, Data Protection Officer

Table 2: Work component characteristics

1.3.2.2 City-led innovative policy response

SPROUT will provide a city-led innovative policy response that will be capable of harnessing the impacts of new mobility solutions in a way that makes them more attractive to the users and more sustainable for the society as a whole. To deliver such an approach, the project will first develop 6 city specific policies for harnessing the impacts of new mobility systems, one for each pilot city. The 2nd layer cities will assess the transferability of those policies in a wider spectrum of cities, will enrich them and will validate them. Finally, employing policy modelling and policy packaging, these will be translated into a widely applicable policy response, the SPROUT policy response (Figure 3).

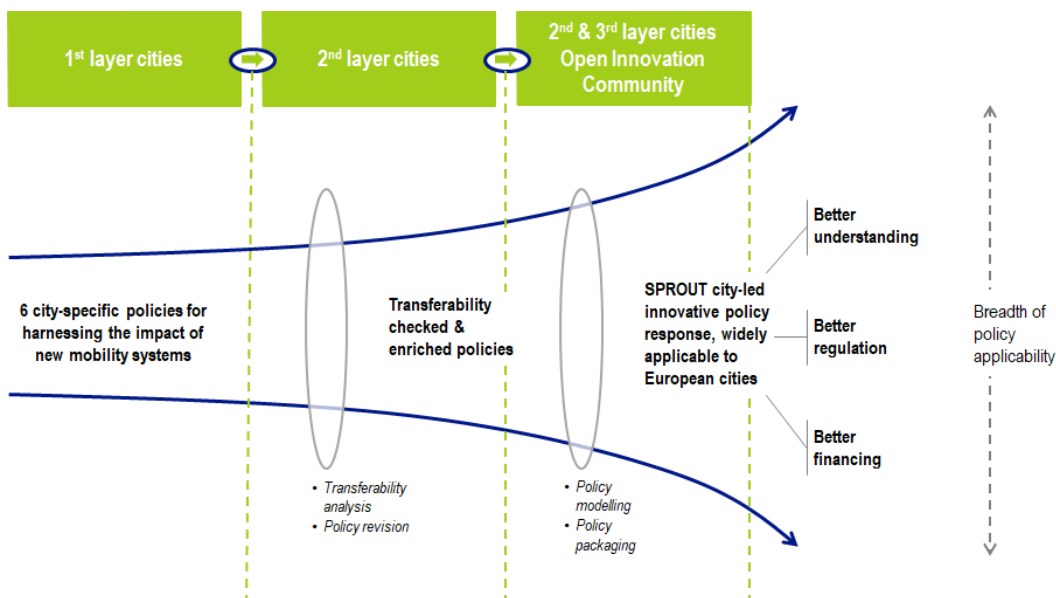


Figure 3: SPROUT policy formulation approach

The SPROUT city-led innovative policy response will be structured in *three pillars*:

1. **Better understanding**, characterised by:

- (a) The employment of quantitative approaches and tools that take full advantage of the opportunities of data analysis and interpretation in both data-rich and data-poor environments and bring insight not only into the current situation but most importantly into the early signs of changes that occur in the urban mobility environment.
- (b) The employment of qualitative approaches that fill the gaps of quantitative analysis, focusing on understanding the behaviour of urban mobility actors and building consensus among them on the two-way interrelation between impacts and policies.

2. **Better regulation**, characterised by:

- (a) A shift of the regulatory balance more towards incentives and less towards compliance. With compliance/restrictive measures being maintained only their adaptation can make them effective in the new mobility systems' environment.
- (b) Innovative urban mobility governance and planning approaches, based on the new evolving role of cities from regulators of urban mobility to facilitators of urban mobility innovation.
- (c) The use of new approaches for identifying and addressing regulatory barriers for innovative urban mobility initiatives that have only a recent and limited, or even no access, to the market with the potential of wide applicability (e.g. innovation deals²⁶).

3. **Better financing**, characterised by:

- (a) The employment of differentiated funding approaches according to the level of innovation and resultant risks of urban mobility pilot projects, and the requirements of emerging from an innovative pilot case to a less-innovative service when it enters the upscaling phase.
- (b) The use of innovative financing tools, such as green bonds (with two project cities/regions already having relevant experience: Gothenburg and Île-de-France).

1.3.2.3 *The roles of the 3-layer cities and the Open Innovation Community*

SPROUT will employ a 3-layer cities' engagement approach. The 1st layer cities are the ones where the project use cases (pilots) will run, the sustainability & policy impacts of innovative/emerging transport solutions will be assessed, and city-specific policy responses to harness these impacts will be tested and assessed. The **1st layer cities** include: **Valencia (Spain), Padova (Italy), Kalisz (Poland), Budapest (Hungary), Tel Aviv (Israel), and Ningbo (China)**. The project will involve key stakeholders from pilot cities in preparing and implementing the pilots. Relevant stakeholders will be identified through a stakeholder analysis in T2.3 for each pilot city. They will co-create and validate the urban mobility scenarios in each pilot city in WP3 and will be involved in the evaluation of the pilots in WP4 through the multi-actor multi-criteria analysis (MAMCA)²⁷ methodology that helps to explore the synergies and conflicts among stakeholders in terms of their support for future policy options. The **2nd layer** includes additional cities that will be used for validating the transferability of the policy results specific to the pilot cities and contributing to their transformation into what SPROUT calls a 'city-led policy response', i.e. a response that is widely applicable (in terms of its contents and structure) to European cities. For this to be achieved, each of the 9 2nd layer cities has been linked to at least one pilot city in terms of its interest in the new mobility solutions to be tested and its potential policy impacts, as shown in *Table 3*.

Pilot (1st layer) cities	New mobility solution to be tested	Validation (2nd layer) cities
Valencia, Spain	Intermodal urban passenger/freight node for collective public & private transport	Hertogenbosch, the Netherlands
Municipality of Padua, Italy	Self-driving pods for cargo-hitching (integrated passenger/freight planning)	Ioannina, Greece Gothenburg, Sweden
Kalisz, Poland	IoT in urban logistics (real time dynamic management of parking / unloading operations including planning and booking)	Arad, Romania Mechelen, Belgium Ile-de-France, France
Budapest Hungary	Shared passengers' mobility (new dockless bike-sharing and car-sharing systems)	Hertogenbosch, the Netherlands Arad, Romania

²⁶ EC (2016) *Better regulations for innovation-driven investment at EU level*, Commission Staff Working Document

²⁷ MACHARIS, C. et al (2010) The Multi-Actor Multi-Criteria Analysis (MAMCA) application in the Flemish long-term decision making process on mobility and logistics, *Transport Policy*, 17 (5), pp. 303-311

Tel Aviv, Israel	Data driven urban mobility planning and traffic management strategies to prioritise non-motorized transport modes and vulnerable road users	Birmingham, UK Minneapolis, USA Almada, Portugal Birmingham, UK
Ningbo, China	Hyper-local on-demand logistics	Almada, Portugal

Table 3: Links between the SPROUT validation and pilot cities

Furthermore, a 3rd layer of cities has already been established (through Letters of Support²⁸) interested in receiving the project outputs, training on the project tools, and willing to strengthen the project's dissemination activities. The 3rd layer members are shown in Table 4, while the possibility for additional cities to join this group will be kept open throughout the duration of the project.

1. Aarhus, Denmark	14. Malmö, Sweden
2. Athienou, Cyprus	15. Manchester, UK
3. Avila, Spain	16. Minden, Germany
4. Bielefeld, Germany	17. Noord-Brabant, The Netherlands
5. Braga, Portugal	18. Olsztyn, Poland
6. Brussels, Belgium	19. Palencia, Spain
7. Cascais, Portugal	20. Poznan, Poland
8. Copenhagen, Denmark	21. Riga, Latvia
9. Gelderland, The Netherlands	22. Szeged, Hungary
10. Haifa, Israel	23. Thessaloniki, Greece
11. Igoumenitsa, Greece	24. Torres Vedras, Portugal
12. Lancashire, UK	25. Zaragoza, Spain
13. l'Hospitalet de Llobregat, Spain	

Table 4: The SPROUT 3rd layer cities

Furthermore, to ensure the applicability of the project outcomes, **SPROUT will follow a crowdsourced innovation model** to be carried out through the setup and use of an **Open Innovation Community (OIC) on Urban Mobility Policy**. The Community will be formally set up at the beginning of the project and will: (1) facilitate a debate generation and consensus building; and (2) validate the project results. The added-value of the SPROUT OIC (in relation to other urban stakeholder platforms) stems from: (i) its explicit focus on urban policy issues and the policy requirements of emerging mobility solutions; (ii) the incorporation of international members, bringing together relevant experiences and insight from the EU, the US and China; (iii) its dual operating mode, virtual (on-line meetings) and event-based (CIVITAS Conference Solution Clinics) enabling a flexible and effective way of addressing emerging urban mobility challenges. Stakeholders will principally be expert communities, local practitioners and policy-makers in the transport and related fields. Focus will also be put on accessing and involving innovators from the private side (e.g. through the EIP-Smart Cities and Communities New Mobility Services Initiative, various start-up prize nominees and winners, (e.g. FrontierCities etc.). Also, networks and associations of these groups will be involved, given their inherent expertise and multiplier capacity. The **initial membership of the Community is already in place**²⁹, including the: POLIS Network; EUROCITIES; European Passenger Federation (EPF); European Platform on Mobility Management (EPOMM); European Technology Platform in Logistics (ALICE); MIT-Center for Transportation and Logistics (USA); University of California Davis (USA); European Conference of Transport Research Institutes (ECTRI); United Nations Human Settlements Programme (UN Habitat); and SUSTRANS Sustainable Transport Charity (UK). SPROUT will engage in an ongoing activity of reaching out to new Community members, and procedures will be put in place to identify, contact and formally engage them. The Community will expand over time and will be supported by a functional online forum. As noted earlier, the 2nd and 3rd layer cities and the Open Innovation Community will assume validator and contributor roles during the project. These roles in relation to specific project

²⁸ These are included in Annex I

²⁹ Letters of Support are included in Annex II

outputs of the project are presented in *Table 5*. The validation mechanisms will be further detailed in terms of guidelines and procedures to be followed, in Task 8.2 (Validation Strategy), while the contribution mechanisms will be further analysed as part of the specific WPs to which the contribution is directed. The contribution of 1st layer cities is not included in the Table, as it occurs in almost all tasks of the project and can therefore be found in detail in the WP descriptions.

Entity	Role	Project output	Mechanism
2 nd layer cities	Contributors	Current state of urban mobility in the SPROUT cities (D2.2)	Data provision for assessing the current state KPIs
2 nd layer cities	Contributors	Urban mobility transition drivers in the SPROUT cities (D2.3)	Structured interview/focus group discussion with city stakeholders
2 nd layer cities	Validators	Validation of the pilot results' wider applicability (D5.1)	Discussions in Local Innovation Fora meetings (10-15 stakeholders). SPROUT will provide: 1) process guidance in terms of deployment structure, instructions for the meetings, reporting templates; (2) validation guidelines.
2 nd layer cities & OIC	Validators	Urban policy system dynamics model (D5.2)	Focus group discussion during project meetings
2 nd & 3 rd layer cities & OIC	Validators	SPROUT city-led innovative policy response (D5.3)	Focus group discussion during project meetings
2 nd layer cities	Validators	Urban mobility shared data space (D6.1)	Focus group discussion on the design of the data space, during project meetings
2 nd layer cities	Contributors	Big/small data-driven, early policy alert & action tracking (D6.2)	Data provision to test the (big & small) data-driven approach to provide descriptive & predictive analytics
2 nd layer cities	Contributors	Exploitation strategy (D8.15)	Definition of the city's plans for exploiting the project results
OIC	Validators	A European strategy to navigate urban mobility policy through transition (D7.3)	Focus group discussions
2 nd layer cities	Contributors	SPROUT's overall impact assessment (D9.7)	Assess the overall impact of the project to the cities' needs & objectives

Table 5: Project outputs to be validated, respective validators and validation mechanism

1.3.2.4 Data-driven methodology

To achieve its objectives, **SPROUT embeds a data-driven approach, that integrates data sources and data sense-making tools to support urban mobility policy making** with adequate evidence, and ultimately **enhance the knowledge and policy making capacity of cities** (Figure 4).

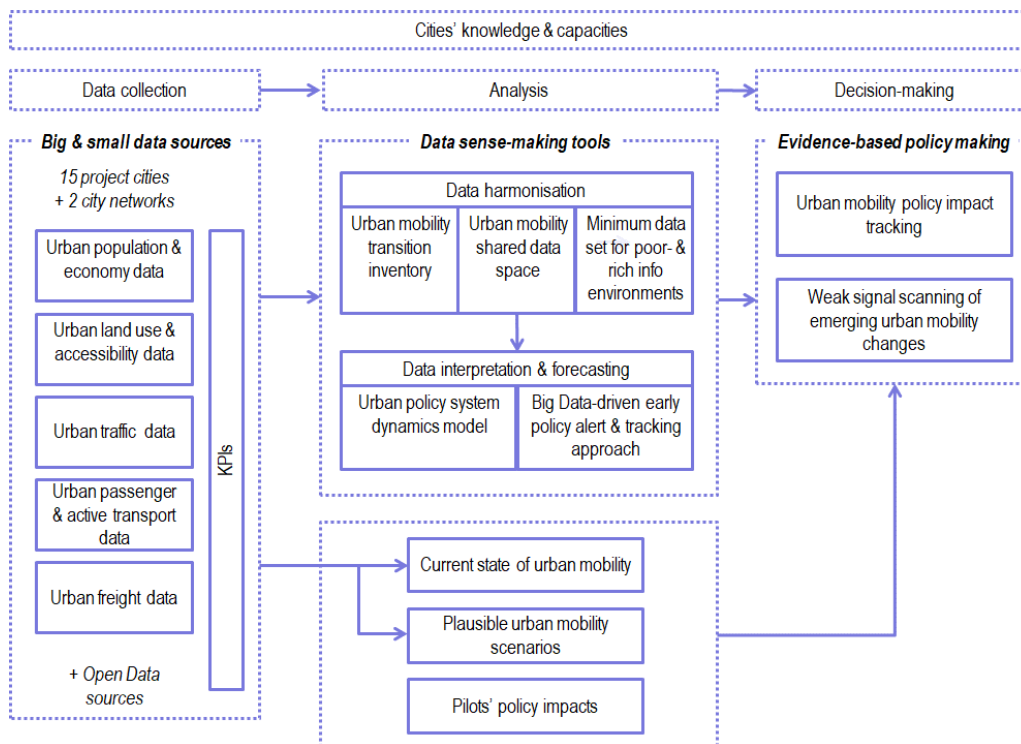


Figure 4: The project's data-driven approach

As already indicated in the previous sections, data availability is currently a major shortcoming for the vast majority of urban mobility environments, especially where urban freight is concerned. A number of previous initiatives have identified various data sets whose availability could support urban policy making³⁰. SPROUT is aware of those initiatives and will build on them. However, SPROUT chooses to follow a more realistic approach, advocating that, *although efforts for more and more accurate data should certainly continue, urban mobility should at the same time focus on extracting the best insight taking into account the capabilities of the cities themselves*. For this reason, the project team has already *undertaken a survey of readily available data in each one of the project cities*, the results of which are shown in Table 6. The data groups shown include the following data elements:

- **Urban population & economy** includes data such as: Average monthly income of residents; City government annual revenues from transport related charges; City government annual operational costs related to city transport; Vehicle ownership rate (car, bicycle).
- **Urban land use & accessibility** includes data such as: Land use shares (residential, recreational, commercial, etc.); Population density; Spatial distribution of land uses; Land use for mobility applications (roads, stations, railways etc.); Accessibility to key services (work, education, shopping).
- **Urban traffic**, includes data such as: Traffic volume/day (road traffic; cars & trucks); Average speed of public transport vehicles; Average speed of road traffic; Delays in road traffic and in public transport compared to free flow travel; Accidents due to urban traffic (casualties, damages, cost); Environmental (CO₂, PM, CO, NO_x) emissions in the urban area; Total energy use by urban passenger and freight transport; Noise emissions in the urban area.
- **Urban passenger & active transport**, includes data such as: Number of trips per day per person; Average trip length per person; Average travel time per person/day; Vehicle occupancy for private cars; Average commute time to work/school; Length of bicycle paths and lanes; Number of passengers travelling by public transport/day (each mode); Number of cycling trips/day; Number of walking trips/day; Number of car-sharing users per year; Number of bike sharing users per year; Security on public transport (number

³⁰ EC (2017) Indicators and Data Collection Methods on Urban Freight Distribution, Non-binding guidance documents on urban logistics, no 6/6. EC (2013) Study on Harmonised Collection of European Data and Statistics in the Field of Urban Transport and Mobility.

of crimes committed); Vehicle occupancy for public transport vehicles; Public transport fares; Public transport reliability; Number of car parking spaces; Public car parking occupancy rates; Number of parking violations per year; Level of accessibility of public transport stops and stations.

- **Urban freight transport**, includes data such as: Commercial establishments per category (shops, restaurants, supermarkets, etc.) & size; Employees per commercial establishment type; Freight vehicle traffic volumes; Freight vehicle fleet per capacity category; Number of freight trips in the urban area; Number of service trips in the urban area; Number of deliveries & pickups of urban freight vehicles; Average mileage & distance of deliveries; Cargo volumes delivered/picked in the urban area; Load factor of urban freight vehicles; Time utilisation rate of urban freight vehicles; Freight vehicle parking spaces & capacity; Freight vehicle parking occupancy rates; Freight vehicle parking violations; Own account vs third-party freight transport.

	Va	Bu	Pa	Ka	Ta	Ni	Io	Me	Ar	He	If	Al	Wm	Go	Mi
Urban population & economy	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Urban land use & accessibility	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Urban traffic	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Urban passenger & active transport	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Urban freight transport		●	●	●	●	●	●	●	●	●	●	●	●	●	●

Va:Valencia; Bu:Budapest; Pa:Padua; Ka:Kalisz; Ta:Tel Aviv; Ni:Ningbo; Io:Ioannina; Me:Mechelen; Ar:Arad; He:Hertogenbosch; If:Ile-de-France; Al-Almada; Wm-West Midlands; Go-Gothenburg; Mi:Minneapolis

● high; ● moderate; ● low; ● very low

Table 6: Current data availability in the SPROUT cities

From the analysis it becomes clear that: (1) SPROUT provides a **wide spectrum of information-rich to information-poor environments**, capable of ensuring that the project results are relevant to a wide spectrum of data environments; (2) **urban freight is the area where major data gaps currently exist**. The datasets will be assessed towards five dimensions: completeness, timeliness, validity, consistency and integrity, allowing for obtaining indicators about the quality of the datasets. These indicators will be benchmarked towards well-established datasets, even from other domains if not available for the transport domain. In addition, relevant experts will be consulted in order to validate the results of this analysis and translate them into useful insights for the transport domain with regards to the usefulness of the datasets as well as potential ways to improve their completeness, timeliness, validity, consistency and integrity.

Furthermore, to accommodate for the opinions/perceptions of all users that will be involved in the project, appropriate data analysis techniques will be employed that will aggregate them fairly. This representation will take into account rules of majority, without dismissing minority opinions and more importantly, users with special needs. To achieve such variability and representativeness, the opinions of the users will be standardized to a format that is easily analysed, and then machine learning and artificial intelligence algorithms (for example preference learning) will be deployed to infer real and fair representation of users' needs.

SPROUT will adopt **a realistic viewpoint on data availability** by: (1) increasing to a certain extent the currently available data through focused data gathering and interpretation exercises; (2) considering the additional data-capture opportunities that emerging transport solutions provide; (3) responding to the need for an effective policy response, considering the current & potentially expanded data capabilities of the European cities. Furthermore, SPROUT will explore the opportunities that arise from using existing open data sources related to urban mobility, such as the EU Urban data platform³¹, EUROSTAT's data on functional urban areas³², and the European Environmental Agency's Data Dashboard³³. Data will be analysed using the project's data sense-making tools to achieve:

- **Data harmonisation**, by: (1) defining the elements that reflect the current state of urban mobility, its expected future state, and the transition from the first to the second (Urban Mobility Transition Inventory – Task 2.2-2.3); (2) designing an urban mobility shared data space for both passenger and freight transport as a blueprint for setting up an ecosystem-based mechanism to provide urban mobility data in a harmonised manner (Task 6.1); (3) defining a minimum set of data needed to drive urban mobility policy making, customised to the data capabilities of both rich- and poor data environments (Task 6.1).
- **Data interpretation & forecasting**, by: (1) better interpreting the interactions between urban mobility policies and their sustainability impacts (Urban policy system dynamics model – Task 5.2); (2) forecasting the need for policy revisions at an early stage (Big- & Small-Data driven early policy alert – Task 6.2).

Relevant data and input for the project's tasks will also be obtained through a continuous involvement of the local city stakeholders in numerous events and training activities. The respective activities have been defined in terms of their type, objectives, location, participants, and timing are presented in detail in Annex I.

1.3.2.5 SPROUT Technology Readiness Levels (TRLs)

SPROUT incorporates technological and innovation components that cover a wide range of TRLs, “current” and “to be” after the project's completion. These are presented in *Table 7*.

Technological/innovation components	Current TRL	Comment	Final TRL
New transport solutions tested in the SPROUT pilots	3-6	Technological developments within the pilots are not used as the ultimate goal of the project, but rather as a means for assessing the sustainability impacts of new mobility solutions and harnessing their impacts through appropriate policies. Therefore, SPROUT has chosen its pilots so that they cover transport solutions which are at different levels of maturity.	7
Urban mobility shared data space	2	Previous approaches in defining and harmonising the elements of an urban mobility shared dataspace were focused almost exclusively on passenger mobility leaving urban freight widely unaddressed. Furthermore, these did not consider the data capabilities of the cities that will have to populate them with data. SPROUT will design an urban mobility shared data space for both passenger and freight transport, as a blueprint for setting up an ecosystem-based mechanism to provide urban mobility data in a harmonised way, while defining a minimum set of data to drive evidence-based urban mobility policy making, customised to the data capabilities of both rich- and poor data environments.	6
Big-data driven early policy alert & action	5	Although big-data analysis has been employed in relation to passenger transport, its application in urban freight is at its infancy. SPROUT will deliver a multi-granular (big & small) data-driven	6

³¹ <http://urban.jrc.ec.europa.eu>

³² https://ec.europa.eu/eurostat/cache/metadata/en/urb_esms.htm

³³ <https://www.eea.europa.eu/data-and-maps/dashboards>

tracking		approach to provide descriptive & predictive analytics for scanning weak signals (early indicators) of emerging urban mobility changes. This will be a triggering mechanism for cities to review their policies when changes in urban mobility are detected and apply corrective medium and long-term measures.	
SPROUT city-led innovative policy response	2	Existing policy responses do not address the impacts of new mobility systems. Furthermore, are city-specific and not widely applicable.	7

Table 7: Start and final TRLs of SPROUT components

1.3.2.6 Links to related research and innovation activities

SPROUT will use and leverage results from previous & ongoing activities. A summary of the main R&I activities linked to the work to be undertaken in SPROUT, is provided in Table 8.

Project / Initiative	Description	Contribution to SPROUT
NOVELOG (H2020 project) ³⁴	NOVELOG, coordinated by CERTH, delivered web-based tools for: understanding the current & future urban freight transport environment, for identifying appropriate measures and for assessing the impacts of city logistics measures. The project also demonstrated in 12 European cities, a wide spectrum of city logistics measures & assessing their impacts.	The results of the Novelog pilots will contribute mainly to the formulation of alternative policy responses for the SPROUT cities (Task 4.4) and to the development of the ‘Urban policy system dynamics model’ (Task 5.2). The design of the Novelog tools will mainly contribute to the design of the ‘Urban mobility shared data space’ (Task 6.1).
AEOLIX (H2020 project) ³⁵	AEOLIX will establish a cloud-based collaborative logistics ecosystem for configuring and managing (logistics-related) information pipelines. This digital business ecosystem will create visibility across the supply chain, enabling more sustainable and efficient transport of goods across Europe.	The results of the Aeolix collaborative logistics ecosystem will contribute mainly to the design of the ‘Urban mobility shared data space’ (Task 6.1).
SUMPs-Up ³⁶ and SUITS ³⁷ (H2020)	Under SUMPs-Up, a new SUMP guideline 2.0 is being developed, with contributions (“Topic guide” and “Practitioner briefing”) from other projects such as SUITS (WI is part of editorial board).	SPROUT will build on and contribute to the SUMP guidelines 2.0 by creating a SUMP-based policy response (Task 7.1)
SOLUTIONS ³⁸ (FP7)	The SOLUTIONS project (WI coordination) has spearheaded exchanges between cities in Europe, Asia, Africa, and Latin America to ensure innovative and green mobility solutions benefit from only the very best technical knowledge and experience, and can be utilised on a truly global scale.	SOLUTIONS project methods and networks will strengthen the transfer of SPROUT project results to European US and Chinese cities (Task 8.6).
NISTO ³⁹ (Interreg IVb)	In the NISTO project, VUB developed an online toolkit to evaluate the impact of small-scale urban mobility interventions on sustainability and the stakeholders.	The sustainability assessment used in NISTO based on 16 criteria under the three pillars of sustainability will be used to assess the impact of the urban

³⁴ <http://novelog.eu/>

³⁵ <http://aeolix.eu/>

³⁶ <http://sumps-up.eu/>

³⁷ <http://www.suits-project.eu/>

³⁸ <http://www.urban-mobility-solutions.eu/>

³⁹ <http://www.nisto-project.eu/home.html>

<p>Mobility4EU⁴⁰ (H2020)</p>	<p>The Mobility4EU project is developing a vision and action plan for mobility and transport in the EU in 2030 based on a participative scenario building approach led by VUB and the evaluation of the scenarios with stakeholders through the multi-actor multi-criteria analysis. The project will also set up the European Transport and Mobility Forum to represent transport users' interests.</p>	<p>mobility scenarios in Task 3.2 & 4.3. The trends affecting mobility will be used as a starting point in Task 1.1 for the analysis of drivers; participative scenarios will build upon the scenarios developed in Mobility4EU (Task 3.1 & Task 3.4). Links will be established to the European Transport and Mobility Forum in Task 87.5.</p>
<p>CityLab⁴¹ (H2020)</p>	<p>The project tested several city logistics solutions and VUB appraised their feasibility and stakeholder support.</p>	<p>The multi-actor multi-criteria analysis applied in the project for the assessment of stakeholder preferences will be used in WP3 to appraise the future policy options in the pilot cities (Task 4.4)</p>
<p>CIVITAS SATELLITE⁴²</p>	<p>CIVITAS SATELLITE, the current CSA for the CIVITAS community, harnesses research and innovation outputs from CIVITAS 2020 projects, with a specific focus currently on 'game changers' in urban mobility.</p>	<p>CIVITAS website, tool inventor to support SPROUT communication. thematic groups and advisory groups to feed the OIC. (WP498)</p>
<p>TIDE⁴³</p>	<p>TIDE was a FP7 project on Transport Innovation Deployment, capturing local contexts to better understand opportunities for transfer of urban mobility innovation</p>	<p>TIDE transferability methodology and impact assessment methodology (WP454 and WP465).</p>
<p>SELIS⁴⁴</p>	<p>SELIS is aimed at delivering a 'platform for pan-European logistics in a wide spectrum of logistics perspectives and creating a unifying operational and strategic business innovation agenda for pan European Green Logistics.</p>	<p>SELIS Living Lab methodology (developed by ZLC) will be applied in WP4 to manage the pilots.</p>

Table 8: SPROUT's relation to previous & ongoing initiatives

⁴⁰ <https://www.mobility4eu.eu/>

⁴¹ <http://www.citylab-project.eu/>

⁴² <https://ec.europa.eu/inea/en/horizon-2020/projects/H2020-Transport/Urban-Mobility/CIVITAS-SATELLITE>

⁴³ https://cordis.europa.eu/project/rcn/104889_en.html

⁴⁴ <https://www.selisproject.eu/>

1.3.2.7 The SPROUT Use Cases (Pilots)

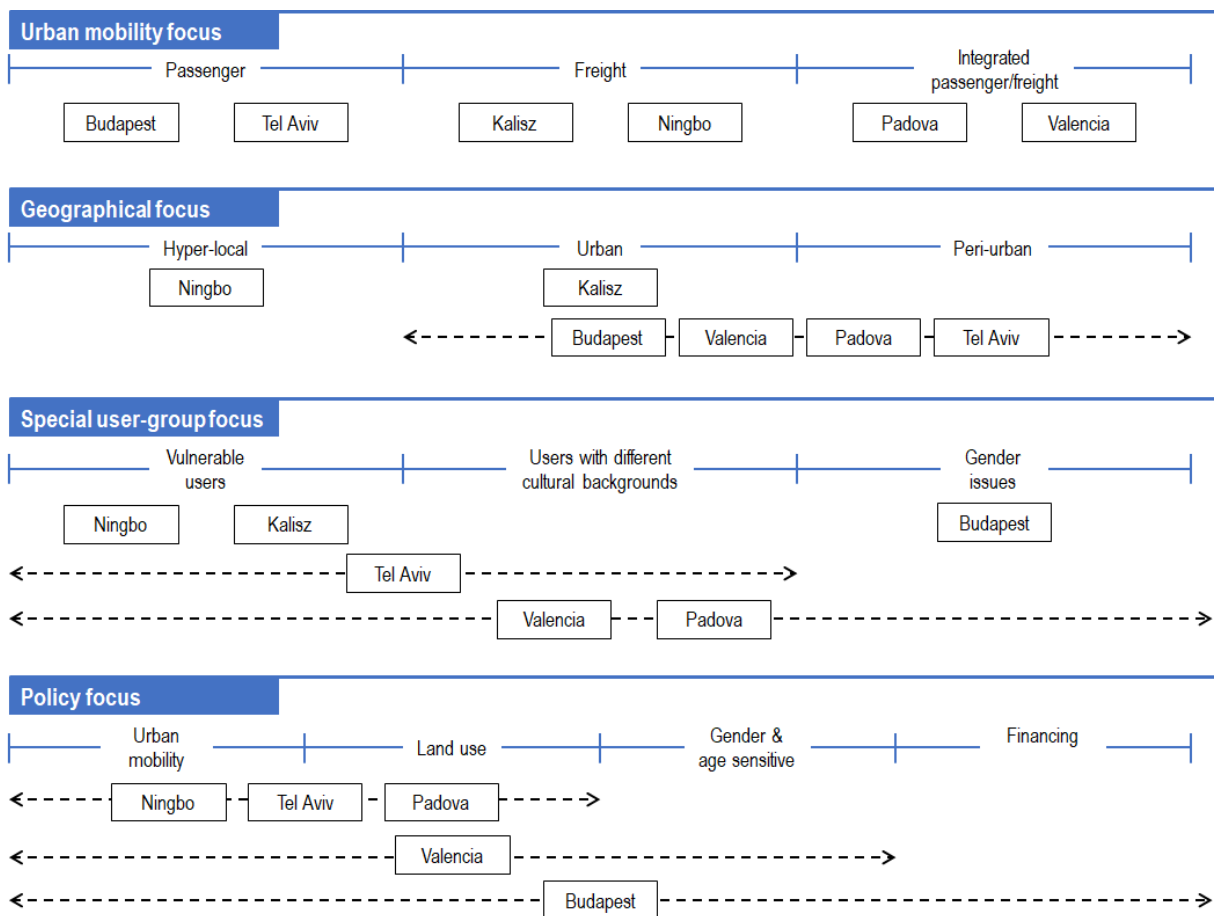


Figure 5: SPROUT pilots' focus & complementarity

SPROUT will use a number of pilots, to gain insight into the policy impacts of emerging transport solutions. The pilots were selected in order to cover a wide spectrum of new mobility solutions, city sizes, contextual conditions, and user group needs. The focus areas covered by the pilots are depicted in while descriptions of the pilots are presented in the tables that follow.

Pilot city 1:	Valencia, Spain	Population	787,808
Urban mobility solution in focus			
Intermodal urban passenger/freight node for collective public & private transport			
Main factors indicating a change is currently in progress in the city's urban mobility environment			
<p>The city of Valencia is fostering a change on citizen's mobility behaviours, by focusing on mobility policies towards more environmental transport modes. For example, the city's cycle network has been extended by more than 75% in the previous years, to a total length of 145 km in 2018, while also improving the interconnection between the cycle lanes of different areas and developing a cycling ring in the city centre. Furthermore, new business models have been tested to improve the use of bikes, in particular, Valencia counts on a public bike sharing system created in 2010 with 275 stations and 2,750 bikes. Thanks to this experience, other neighbouring towns have also implemented public bikes systems. These measures have led to an increase in bicycle use of over 15% in the last year and a 2.7% decrease in total traffic in the city.</p> <p>New business models for urban freight transport have been also tested to improve the last mile distribution using tricycles. Nowadays, there are several companies that have been implemented this kind of last mile distribution that can save around 2 tonnes of CO2 per year and tricycle according to the pilot experiences.</p>			

<p>In 2011, the regional government of Valencia established a new legal framework that aims to improve the mobility of the citizens of Valencia, as well as their quality of life, by promoting sustainable urban mobility planning and management. The City Hall of Valencia approved in 2013 the Urban Mobility Plan of Valencia to encourage the use of walking, bicycle and public transport. As a follow-up, the city of Valencia is strongly interested in continuing to introduce new transport services and/or blending them using new business models, in order to reduce CO2 emissions, noise and congestion in the city for both, passenger and freight transport.</p>
<p>Main impacts which are currently unclear and therefore are not being addressed (or are inadequately addressed) by the current urban policy elements/instruments</p>
<p>The following impacts remain unclear: (i) the impact of increased intermodality between bikes and public transport means on the urban mobility system; (ii) the impact of co-locating sustainable passenger/active transport and freight transport collective activities in the same nodal point; (iii) the impact of different city authority roles (regulator vs facilitator) on the successful deployment of collective public & private transport solutions.</p>
<p>Pilot components</p>
<p>Design of an advanced intermodal transport node for both passenger and freight The objective is to improve the integration between bikes and public transport means as well as the integration between passenger and last-mile freight transport through the co-location of new advanced services. This will allow passengers to connect to several sustainable urban transport modes in an easier way, avoiding the use of private car and fostering the use of more environmentally friendly transport solutions such as bicycles, train and buses.</p> <p>Pilot set-up, implementation and information gathering The pilot advanced intermodal node will be located adjacent to a train/tram/metro/bus station and will serve to test specific solutions for improving the last-mile distribution and fostering the intermodality between train and bikes, using innovative systems such as intelligent secure bike parking and intelligent self-service package lockers.</p> <p>Assessment, policy recommendations and deployment plan The quantitative and qualitative information gathered during the pilot will be analysed to assess the operational feasibility of the new services, their contribution to the increase of the use of sustainable urban mobility alternatives and improve the user experience, the economic sustainability of the solutions and the socio-economic and environmental impact. This detailed analysis will be the basis for the development of regulatory and/or policy recommendations to support the development of these advanced intermodal nodes, as well as a detailed deployment plan to create a network of urban intermodal nodes with advanced services analysing its impact. The response to the proposed policies and deployment plan will be done through interviews (field work) and/or testing specific policies to evaluate the response.</p>
<p>Final outputs of the pilot</p> <ul style="list-style-type: none"> - Design of an advanced concept of intermodal urban transport nodes integrating bikes (and other green transport options), public transport means (train, tramway, metro, bus) and last mile freight distribution through the co-location of new advanced complementary services. - Detailed assessment of the new intermodal urban transport node (feasibility and impact of the new services proposed and tested) - Policy recommendations to support the development of the advanced intermodal urban nodes, analysis of policy response and prioritisation. - Definition of a deployment plan to create a network of urban intermodal nodes with advanced services. (Including feasibility and impact analysis).
<p>Pilot results to be mainstreamed into urban policy instruments</p>
<p>The following pilot outputs will be mainstreamed into future revisions/upgrades of Valencia's SUMP:</p> <ul style="list-style-type: none"> - Design of advanced urban intermodal transport nodes integrating complementary services - Policy recommendations to support the development of the advanced intermodal urban nodes - Deployment plan to create a network of urban intermodal nodes

Organisations to be involved in the pilot and main responsibilities
<p>Valencia City Hall: (i) provision of support during data collection; (ii) in charge of public engagement; (iii) in charge to validate the new regulatory framework (and contributor)</p> <p>Ferrocarrils de la Generalitat Valenciana – FGV (administrator and manager of the regional rail network, tram and metro services): (i) contribution to the design of the advanced concept of urban intermodal node; (ii) pilot implementer (the pilot advanced intermodal node will be setup in one of the train/tram/metro stations directly managed by FGV); (iii) main contributor to pilot information gathering; (iv) contributor to results’ assessment and deployment plan</p> <p>Fundación Valenciaport – FVP: (i) coordinator of the overall pilot activities; (ii) coordination and main contributor to the design of the advanced concept of urban intermodal node; (iii) in charge of assessing the pilot results and impacts; (iv) main contributor to the formulation of new regulatory framework (policy recommendations); (v) in charge of developing the deployment plan</p>

Pilot city 2:	Population
Kalisz, Poland	101,625

Urban mobility solution in focus
IoT-enabled urban logistics (real time dynamic management of parking/unloading operations including planning and booking)
Main factors indicating a change is currently in progress in the city’s urban mobility environment
<p>There is a growing recognition among the city stakeholders for the need of new transport solutions for cargo distribution. Goods distribution in the urban area is increasing heavily, strongly contributing to the increase of the overall traffic in the city centre. Goods deliveries require unloading spaces that are convenient enough to unload the cargo fast while at the same time do not cause additional disturbance during unloading.</p> <p>The city of Kalisz is becoming increasingly convinced that it cannot continue without managing deliveries as part of the overall urban planning process, using emerging transport technologies as a key facilitator.</p>
Main impacts which are currently unclear and therefore are not being addressed (or are inadequately addressed) by the current urban policy elements/instruments
<p>Currently the city’s Sustainable Urban Mobility Plan does not address freight transport. Therefore, the following impacts remain unclear: (i) the impact of introducing urban freight operations, on urban mobility planning; (ii) the impact of introducing an IoT-enabled truck parking/unloading system into the city’s urban transport system; (iii) the impact of blending the IoT-enabled system with the existing conventional loading/unloading system; (iv) embedding an IoT-enabled truck parking/unloading system into a data-driven urban mobility planning setting; (v) the impact of introducing reward-based policies (e.g. enhanced access rights) for transport companies/drivers that deploy the system in an efficient way for the city’s operation (e.g. arriving and departing at/from the parking place at the allocated time, notifying the city authority in case of deviations for reallocating the parking place in real-time, etc.)</p>
Pilot components
Identification of optimal loading space locations & pilot setup
<p>Based on the logistics characteristics of the city centre (pilot area, business activities, goods movements, etc.) the exact loading/unloading space locations will be defined and the technological infrastructure (sensors, integration with IoT network) will be set up. The City of Kalisz has already worked on the implementation of the sensors network in the city.</p>
IoT-enabled freight vehicle loading/unloading space management
<p>The IT application for real-time and dynamic management of loading/unloading spaces (planning, booking, payment, execution) will be developed and introduced, along with a mobile application providing access to truck drivers. New operational and business models will be employed to support the system’s effective management and utilisation. The system will embed an incentive & reward scheme, encouraging potential users to use the solution efficiently while at the same time promoting its wider acceptance. The reward scheme will be aligned with the city’s goals on urban mobility.</p>

Final outputs of the pilot			
<ul style="list-style-type: none"> - Data sources deployment plan based on existing and new data sources (including parking utilisation & urban delivery data) - IoT based, demand management tools, to improve real-time management of truck loading/unloading operations in the city centre - Assessment of the policy impacts of IoT-enabled, real-time, truck unloading/loading management - New regulatory & policy framework expanding the current SUMP, by introducing urban freight transport operations and incorporating the incentive & reward system for efficient truck loading/unloading. 			
Pilot results to be mainstreamed into urban policy instruments			
<p>The following pilot outputs will be mainstreamed into the Kalisz SUMP (attached to the ‘Low emission economy Strategy’ of the city):</p> <ul style="list-style-type: none"> - new data capture & collection techniques and truck loading/unloading demand management tools to support urban mobility policy justification - incentive & reward system for efficient truck loading/unloading in the urban area - urban freight transport priorities and policy goals. 			
Organisations to be involved in the pilot and main responsibilities			
<p>City of Kalisz (owner and manager of the parking space): (i) provision of support during data collection; (ii) main contributor to scenario assessment; (iii) provision of support regarding pilot testing activities; (iv) in charge of public engagement; (v) in charge of the delivery of the new regulatory framework ILIM: (i) coordinator of the overall pilot activities; (ii) in charge of data sources deployment plan; (iii) in charge of developing the IoT-enabled parking management solution; (iv) in charge of assessing the pilot impacts</p>			
Pilot city 3:	Budapest, Hungary	Population	1,779,361
Urban mobility solution in focus			
Shared passengers mobility (new dockless bike-sharing and car-sharing systems)			
Main factors indicating a change is currently in progress in the city’s urban mobility environment			
<p>The city of Budapest is experiencing a number of changes in its urban mobility environment. New transport services using new business models are being introduced, as for example new car-sharing services, dock-less bike sharing systems and cargo bike delivery services, which appeared in 2017-2018, while a living-lab test of a Mobility-as-a-Service is currently under preparation. Furthermore, emerging transport technologies are being implemented, such as the Automated Fare Collection (AFC) system, the new EV charging infrastructure system, the procurement of more electric vehicles for public transport, while electric powered personal and freight vehicles are becoming more popular. At the same time, user needs are evolving, with participatory planning initiatives showing that people need more space for walking and cycling and less space for cars in the city, while their requirements for better services, increased safety (development of an integrated transport safety database), and more connections, are becoming stronger. Finally, new institutional and financing structures (regulation of parking & taxi services, regulation of sightseeing vehicles and tourist buses, new financing structures for sharing-based mobility solutions and a new time-based fare system in public transport) have already been or are being implemented.</p>			
Main impacts which are currently unclear and therefore are not being addressed (or are inadequately addressed) by the current urban policy elements/instruments			
<p>The following impacts remain unclear: (i) the impact of changing user needs on the current urban mobility environment; (ii) the impact of introducing car-sharing, bike-sharing and MaaS services, on the city’s urban mobility transport system and its regulatory/governance environment; (iii) the impact of different city authority’s roles (regulator vs facilitator) on the successful deployment of shared passenger mobility.</p>			

Pilot components			
An integrated impact monitoring framework for shared mobility services			
<p>The pilot will carry out a monitoring campaign to examine the impact of new shared mobility solutions (carsharing, bike-sharing, scooter sharing, personal EVs) that have recently emerged or currently being introduced, and assess their operational feasibility and sustainability. This will include an inventory of current and future data sources (e.g. vehicle and passenger kilometres, occupancy rate, spatial distribution of trips etc.), distribution of responsibilities in terms of data provision, data processing and analysis methodology (e.g. how to identify modal shift to shared modes), and ways to communicate this data to stakeholders (in textual and visual form) that can impact future policies (public and private actors). Based on the short-term campaign a framework will be developed to monitor these impacts in the long term to provide input for policy making. Specific attention will be paid to how new, emerging services can be incorporated into this framework.</p>			
Final outputs of the pilot			
<ul style="list-style-type: none"> - Assessment of the operational and policy impacts of shared passenger mobility (free-floating car- and dockless bike-sharing) in the city - Policy recommendations to harness the impacts of shared passenger mobility through a coordinated data collection and communication framework - Recommendation for improving the current urban mobility and land use planning & regulatory framework, by embedding the requirements of shared/cooperative passenger mobility business models - Revised car-sharing strategy (originally developed in 2014, and requiring a revision due to changes in the urban environment). 			
Pilot results to be mainstreamed into urban policy instruments			
<p>The following pilot outputs will be mainstreamed into a revised version of Budapest's SUMP:</p> <ul style="list-style-type: none"> - pilot's operational and policy impacts to be fed into 'Budapest 2030 - Long-Term Urban Development Concept' and the 'Budapest Smart City Concept' - recommendation for improving the current urban mobility planning & regulatory framework, to be fed into the Balázs Mór Plan (SUMP) and into the city's car-sharing and tourist and sightseeing bus concept. 			
Organisations to be involved in the pilot and main responsibilities			
<p>Municipality of the City of Budapest: (i) provision of support during data collection; (ii) in charge of public engagement; (iii) in charge of the delivery of the new regulatory framework BKK Centre for Budapest Transport: (i) coordinator of the overall pilot activities; (ii) in charge of the pilot assessment results Budapest District Governments: contribution to the formulation of new regulatory framework Road Operator (Budapest Közút): provision of support regarding pilot testing activities</p>			
Pilot city 4:	City of Padua, Italy	Population	210,000
Urban mobility solution in focus			
Self-driving pods for cargo-hitching (integrated passenger/freight planning)			
Main factors indicating a change is currently in progress in the city's urban mobility environment			
<p>Padua is going through a rapid economic change, showed in the last decade a central role of private cars (representing currently some 51% of overall urban mobility and 74% for the metropolitan area) and changing user needs, particularly due to the skyrocketing development of home deliveries. Negative impacts (congestion, pollution, safety, etc.) are in place, which should be addressed by innovative and effective policies. Even though the constant increase of the sustainable mobility share is promising (49% for the city center, 26% for the metropolitan area), the Municipality of Padua is developing the new SUMP which already includes a rather exhaustive analysis framework leading to the definition of main bottom-line urban planning goals,</p>			

including:

- Fostering the use of more environmental-friendly transport modes;
- Reducing the role of road transport;
- Decreasing of the road accidents
- Improving the quality of public space, namely accessibility
- Improving the effectiveness and efficiency of urban logistics and freight transport.

Main factors driving the change of future urban mobility include innovative emerging technologies (e.g. advanced smart transportation system based on swarms of electric modular self-driving pods) and disruptive business models (cargo hitching) as they are connected to policy-making (forthcoming SUMP). SPROUT will develop policy tools and regulatory framework requirements focusing on the deployment of cutting-edge emerging technologies - both for urban passenger and freight transport - leading to the deployment of business models based on cargo hitching. Policy requirements will be produced, while a small-scale pilot action will be implemented to support the development of an innovative policy framework.

Main impacts which are currently unclear and therefore are not being addressed (or are inadequately addressed) by the current urban policy elements/instruments

The current policy framework on mobility dates to 2010. Since that, several initiatives have assessed and introduced to be tested, that were not foreseen in the past SUMP. This is particularly evident for a set of innovative urban mobility, such as the cargo-hitching and the self-driving pods. Therefore, the medium/long-term impacts of the identified emerging technologies and cargo hitching business models are still to be properly assessed and are not currently addressed by existing urban policy tools. Other critical issues can be identified within the existing policy framework, which conversely represent key goals of the forthcoming SUMP.

- Strong focus on innovation of urban transport, using ITS/big data and autonomous vehicles, both for passenger and freight;
- Developing e-mobility to reduce emissions, fossil fuel consumption and mitigating climate change;
- Improving the overall efficiency and effectiveness of urban mobility, both for passenger and freight;
- Improving energy and environmental sustainability;
- Improving safety;
- Improving socio-economic urban sustainability.

The under-development new regulatory framework/SUMP – which is based on the principle of sustainability – has the strategic goal of outlining the vision and future scenarios of the urban mobility for the coming decade by identifying and implementing a harmonized and coherent range of policies and measures of sustainable urban mobility.

Pilot components

The role of innovation in urban logistics is particularly highlighted within the range of significant policies to be developed by the forthcoming SUMP. A number of urban areas and routes (see below) are envisaged for testing last-mile logistics. Innovative vehicles based on cutting-edge technologies will be deployed and tested within SPROUT to carry both passengers and freight. The cargo hitching concept will be applied to an advanced smart transportation system – called “Next” - based on swarms of (electric) modular self-driving pods. Each module can join and detach with other modules on standard city roads. When joined, a bus-like vehicle is created by modules. The modules can move autonomously on regular roads, join themselves and detach even when in motion. Modules carrying passengers and goods are combined on the basis of estimated flows, which are calculated in real-time by algorithms considering different final destinations by users and freight.

Pilot activities will consist of the following:

Identifying requirements and tools for data collection and analysis supporting the regulatory framework leading to local mobility plans, with a view to selected innovative emerging technologies and disruptive business models;

Identifying opportunities for the selected emerging technologies and disruptive business models. Policy implications of identified solutions will be assessed as they lead to the new regulatory framework. A first stage small-scale pilot will be developed, which will focus on the following specific activities:

<p>Test-drive of the autonomous electric modules in selected areas; Testing and optimizing modularity; Proceedings for authorizing the test of the service Selecting the suitable urban routes for testing the service for passenger and freight; Identifying requirements of recharging points in tested areas; Running ad hoc services on selected routes. For passengers, the service will support intermodality by connecting the surroundings park and ride facilities to the historical city centre. For freight, the service will connect the Padua freight village (Interporto di Padova) to specific urban areas. Assessing overall combined impacts of proposed policy solutions and tools at local level on the requirements of the new regulatory framework leading to the forthcoming SUMP; Using the results of logistics solutions and mobility tools deployment to produce an integrated and coordinated regulatory framework, which will include various policy options in a unified and harmonized framework; Performing capacity-building initiatives focusing on innovative mobility solutions.</p> <p>-</p>		
<p>Final outputs of the pilot</p>		
<p>- Project activities will produce new, practice-based knowledge about urban mobility policy and contribute to policy-making at local level by fostering the development and adoption of planning decisions and policy initiatives. The activities will be jointly performed by VIU and the Municipality of Padua and will produce relevant knowledge and policy implications to support the development of the forthcoming SUMP, which is clearly a significant step ahead with respect to the current policy scenario. Moreover, by dealing with innovative and cutting-edge mobility and logistics solutions (cargo hitching and emerging technologies), novel concepts and approaches will be addressed, thoroughly discussed and assessed.</p>		
<p>Pilot results to be mainstreamed into urban policy instruments</p>		
<p>- Padua is going to develop the new SUMP. A rather urgent need is felt by local stakeholders to get both added-value knowledge and a better understanding of policy implications of cutting-edge solutions to support the policy-making process leading to the new SUMP. The new regulatory framework should include various policy options - ranging from more strategic and traditional ones to those dealing with innovative initiatives - in a harmonized and unified manner. In SPROUT, pilot results coming out from the deployment of selected emerging technologies (“Next”) in the field of cargo hitching will be used to shape the policy design in the forthcoming SUMP as it relates to the strategic objectives of fostering innovation.</p>		
<p>Organisations to be involved in the pilot and main responsibilities</p>		
<p>Municipality of Padua (public body in charge of the mobility planning & policy): (i) Test-drive of the autonomous electric pods in selected areas; (ii) proceedings for authorizing the test of the service (iii) in charge of promoting the test of the service to the users; (iv) running ad hoc services on selected routes; (v) in charge of mainstreaming the pilot results into the new regulatory framework</p> <p>Venice International University: (i) scientific coordinator of the overall pilot activities; (ii) data collection in charge of developing the cargo-hitching concept applied to the self-driving pods; (iii) cargo-hitching service design; (iv) monitoring of the tests; (v) in charge of assessing the pilot impacts. (vi) support to the Municipality of Padua in mainstreaming the pilot’s results into the new regulatory framework.</p>		
<p>Pilot city 5:</p>	<p>Tel Aviv, Israel</p>	<p>Population</p> <p>438,820</p>
<p>Urban mobility solution in focus</p>		
<p>Data driven urban mobility planning and traffic management strategies to prioritize non-motorized transport modes and vulnerable road users</p>		
<p>Main factors indicating a change is currently in progress in the city’s urban mobility environment</p>		

<p>The city of Tel Aviv undergoes tremendous transport changes during the construction of its new public transport system, on top of the new car-sharing service that was launched in summer 2017. The city plans to revolutionize major arteries in order to integrate additional LRT lines, besides other traffic and public transport changes throughout the city. As a result, new priorities in the allocation of the public space will be required, mainly regarding the prioritisation of non-motorized transport modes. The city has already begun to explore the opportunities of using new information sources that would serve as a basis for deep understanding of travel habits and mobility needs. Insights gained by advanced data analysis will be valuable in setting the grounds for designing major arteries as mobility managed roads.</p>
<p>Main impacts which are currently unclear and therefore are not being addressed (or are inadequately addressed) by the current urban policy elements/instruments</p>
<p>A great deal of uncertainty is associated with: (i) the impact of the new public transport services on mobility patterns; (ii) the impact of the re-allocation of public space in specific arteries, while specifically addressing the needs of vulnerable road users; (iii) the impact of embedding integrated quantitative/qualitative methodologies/algorithms/tools into a data-driven urban mobility planning setting.</p>
<p>Pilot components</p>
<p>New information sources New information sources for understanding travel patterns in various transport modes and collecting the respective data will be explored. BlueTooth (BT) detectors, installed in over 90 intersections in Tel Aviv, will be the main source for understanding travel behaviour in private vehicles. These devices provide information about individual journeys. Data regarding the use of the new car sharing service in Tel Aviv, AutoTel, will be supplied by the operator of the service. Counts of passengers embarking and disembarking from buses will be obtained from buses equipped with counters at the doors. Data regarding walking and biking using private bikes are not collected in Tel Aviv Yafo at the moment, as there is no accurate and cheap technology for monitoring these transport modes. However, the Tel-O-Fun bike sharing service is very popular in Tel Aviv and data regarding loaning and returning bikes at the various stations is available.</p> <p>Analysis of current travel behaviour patterns Transforming the raw data collected into travel behaviour patterns require several data analysis techniques. The most challenging one is associated with BT-based trajectory data of private vehicles. Discovering travel patterns within trajectory data repository is a challenge stemming from the scale, complexity and sensitivity of mobility data. Unsupervised machine learning tools, particularly clustering methods such as K-means and hierarchical clustering, are commonly used in trajectory analysis. The type of available data source is a fundamental factor in planning and performing the various stages of analysis (data cleaning and completion, proximity definition, etc.). Much of the existing research in this area relies on GPS and cellular data and less attention has been paid to BT-based mobility pattern recognition. By integrating expert knowledge into Sequence Alignment Methods (SAM)⁴⁵, different algorithms will be tested and the most appropriate will be and applied to identify recurrent travel pattern.</p> <p>Planning public sphere re-allocation The pilot will examine different scenarios of allocating the public sphere and the road-cross section. The scenarios will present different planning approaches empathising the trade-off between the transport system capacity (objective measure) and the liveability measure (subjective) that will also address safety aspects (level of separation between different road user's) and vulnerable road user's needs. The public sphere re-allocation will be tackled in a hierarchical manner, composed of three levels:</p> <ul style="list-style-type: none"> - Strategic level: Planning road cross-section and the most appropriate mobility management measures in order to prioritise non-motorised road users and specifically vulnerable populations, while balancing between capacity and liveability. - Tactical level: Planning level of separation between different road users and other public sphere components, while applying the planning principles defined in the strategic level. Aspects concerning vulnerable road users will include their needs as individuals as well as interaction with other road users. - Operational level: Planning and applying traffic management strategies, particularly at intersections,

⁴⁵ DELAFONTAINE, M. et al (2012), Analysing Spatiotemporal Sequences in Bluetooth Tracking Data, *Applied Geography*, 34, pp. 659-668

<p>supporting priorities among transport modes and vulnerable road users. Implementing the reallocation of the public sphere will be based on the use of: (1) Visual Analytics (VA) tools for the simulation of the movement of transport modes and road users; (2) image processing algorithms for the identification and prioritisation of vulnerable users</p>
<p>Final outputs of the pilot</p> <ul style="list-style-type: none"> - Data analyses techniques from multiple sources to understand road users' travel habits, mobility needs and to recognise trajectory travel patterns - Data sources deployment plan based on existing and new data sources, aiming to obtain the best possible information regarding passengers' travel habits and mobility needs - Existing and predicted travel patterns and travel demand based on pattern-recognition and other data mining techniques - Visualization of data analysis results to support decision-making processes by city officials - Assessment of the policy impacts of data driven urban mobility planning & traffic management strategies - Policy recommendations to harness the impacts of data-driven urban mobility planning and traffic management strategies to prioritize non-motorized transport modes and vulnerable road users - Guidelines for planning public sphere re-allocation and priority regime - Recommended new traffic arrangements and urban planning solutions for the main arteries of the urban network.
<p>Pilot results to be mainstreamed into urban policy instruments</p> <p>The following pilot outputs will be mainstreamed into Tel Aviv's Strategic Plan (being the urban policy instrument equivalent to SUMP):</p> <ul style="list-style-type: none"> - new data analysis techniques and data visualisation tool to support urban mobility policy justification - guidelines for planning public sphere re-allocation and priority regime with emphasis on vulnerable road user's needs - resultant new priorities and urban mobility policy goals.
<p>Organisations to be involved in the pilot and main responsibilities</p> <p>Municipality of Tel Aviv Yafo: (i) coordinator of the overall pilot activities; (ii) in charge of assessing the pilot impacts; (iii) in charge of planning the public sphere re-allocation; (iv) in charge of public engagement Technion: (i) in charge of new information sources; (ii) in charge of advanced data analysis; (iii) in charge of data visualisation and data-driven decision-making support</p>

Pilot city 6:	Ningbo, China	Population	8,005,000
Urban mobility solution in focus			
Hyper-local on-demand logistics			
Main factors indicating a change is currently in progress in the city's urban mobility environment			
<p>A number of changes are happening in the main Chinese cities, among which the city of Ningbo. User needs are changing, as a result of: the increasing urbanisation (currently at 56%, aimed at 60% by 2020 by the Chinese government) leaving strong potential for the development of logistics services in urban environments and the underlying consumer habits, as urban populations: (a) tend to be more technology-savvy and use ICT in their daily purchases; (b) tend to consume a larger share of goods requiring daily deliveries, e.g. fruits & vegetables; (c) place a higher value on speedy delivery than non-urban ones; (d) are more conscious on environmental-friendly & ethical purchasing issues.</p> <p>Furthermore, new transport services using new business models are introduced, such as the hyper-local logistics, which is experiencing strong growth in China and is attracting considerable investment interest. Hyper-local logistics involves the on-demand delivery of a wide spectrum of every-day needed products (e.g. food, groceries, bakery, laundry, etc.) in a small geographical area (3-7 km radius), on demand and</p>			

<p>with very short lead times (e.g. 15-30 minutes). For example, New Dada, a joint venture partly-owned of China's largest e-commerce company JD.com Inc., provides hyper-local logistics services to Chinese shoppers in the popular but fiercely competitive online grocery market. Providers, such as Eleme and Meituan, offer instant delivery (within 1-2 hours) for prepared-food and fresh products to consumers. Wal-Mart has shifted its China strategy in 2016 when it sold its own online platform Yihaodian in exchange for a USD 50m stake in New Dada. Cainiao (a subsidiary of Alibaba) uses an app named Guoguo (meaning parcels in Chinese) allowing shipping companies and consumers to exchange information more easily. Using this app, delivery staff could take returns or receive sending parcels from nearby consumers while they are out delivering, get everything from fresh foods to large appliances within two-hours of placing an order. SHBJ, an Alibaba backed-up Beijing-based start-up, is offering hyper-local meal delivery in a 3km radius in 30 cities and is planning to enter new product markets in the near future. To add to the innovativeness of hyper-local logistics, in most cases their implementation besides own employees also involve crowd-sourced deliveries and local pick-up stations (e.g. New Dada, Cainiao, RenrenKuaidi, etc.). Hyper local orders reach tens of thousands per day in Ningbo.</p>
<p>Main impacts which are currently unclear and therefore are not being addressed (or are inadequately addressed) by the current urban policy elements/instruments</p>
<p>The following impacts remain unclear: (i) the impact of hyper-local logistics on the city's urban mobility transport system and its regulatory/governance environment; (ii) the impact of integrating hyper-local on-demand logistics systems in the SULPs to complement urban freight transport policy and help meet sustainability goals; (iii) the impact of different city authority's roles (regulator vs facilitator) on the successful deployment of the hyper-local on-demand logistics.</p>
<p>Pilot components</p>
<p>Integrated management of urban logistics resources, including vehicles, couriers etc. The transportation of hyper-local deliveries is being made by bicycles, motorbikes, and scooters, or by other means, such as city dwellers. This is quite different from typical urban freight being delivered by vans and trucks. An integrated management system of urban logistics resources will be set in place, to ensure that the emerging transport solutions and the traditional ones do not remain as two parallel 'worlds' that would stress the urban area's transport capacity and ultimately lead to delivery inefficiencies and increased environmental burden for city centre residents.</p> <p>Optimised delivery scheduling and network design for daily urban logistic services. Optimised scheduling for delivery couriers and the network design for urban local services are vital to enable instant delivery. The pilot will first collect operational data of urban delivery parcels and design mathematical models and algorithm that provide optimal scheduling and network design solutions, in a hyper-local, on-demand, multi-actor scenario.</p>
<p>Final outputs of the pilot</p>
<ul style="list-style-type: none"> - Assessment of the operational and policy impacts of hyper-local on-demand logistics - Policy recommendations to harness the impacts of hyper-local on-demand logistics services - A test version of a Sustainable Urban Logistics Plan incorporating the policy recommendations and focusing on the: (a) integrated management of urban logistics resource, including warehouses/storage/transshipment points, vehicles, couriers etc.; (b) optimised delivery scheduling and network design for daily urban logistic services - Policy recommendations to address the needs of low-education users of hyper-local logistics systems, being vulnerable to the rapid economic change.
<p>Pilot results to be mainstreamed into urban policy instruments</p>
<p>The following pilot outputs will be mainstreamed into policy instruments:</p> <ul style="list-style-type: none"> - The test version of the Sustainable Urban Logistics Plan will be used to revise the existing SUMP and urban planning policies. - The recommendations for low-education users will be fed to the city's social and training policies for addressing the needs of vulnerable users.
<p>Organisations to be involved in the pilot and main responsibilities</p>
<p>Ningbo Municipal Commission of Commerce: (i) main contributor to pilot results' assessment; (ii)</p>

provision of support regarding pilot testing activities; (iii) in charge of public engagement; (iv) in charge of the delivery of the new regulatory framework

Ningbo Supply Chain Innovation Institute China: (i) coordinator of the overall pilot activities; (ii) in charge of devising solutions for vehicle routing and service scheduling for hyper-local logistic; (iii) in charge of formulating policy proposals

Ningbo University of Technology: in charge of assessing the pilot impacts

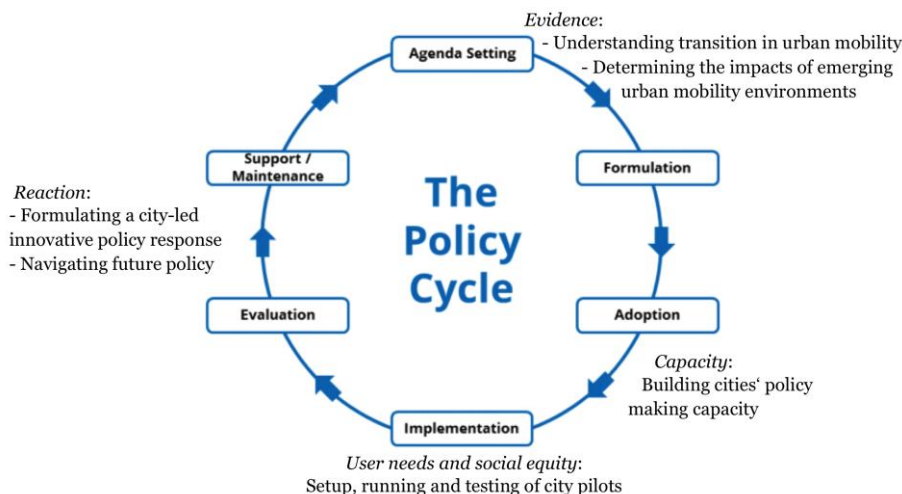
Private logistics operators (New Dada or YunDa): (i) in charge of the collection of operational data during the pilot testing activities; (ii) provision of support regarding pilot testing activities; (iii) contributor to pilot results' assessment

Looking at the above case study (pilot) descriptions, it becomes clear that the breadth of issues (challenges) having led to the Project Objectives (see Table 1) are reflected in the SPROUT pilots, as all case studies and the corresponding mobility solutions:

- reflect mobility environments currently under transition
- cover a wide spectrum of data-rich to data-poor environments (see Table 6)
- share the issue of unstandardized data on urban freight operations (except from the pure ‘passenger’ focused ones)
- are emerging ones, reflecting different levels of innovation and user requirements
- reflect different urban mobility, geographical, special user group & policy requirements (see Figure 5)
- have been selected by the SPROUT cities, based on their belief that their impact in terms of sustainability is unclear and that they require more effective policies than the ones currently employed.

1.4 Ambition

1.4.1 Progress beyond the state of the art



The most significant barriers to adequate policy response to emerging innovative mobility solutions are as follows: (1) the **lack of evidence** on the impact of urban mobility innovations in cities; (2) the **lack of capacity** at the local authorities to understand technological and financial implications of innovations and integrate evidence into decision-making;

Figure 6: SPROUT ambition along the policy cycle

(3) innovations do not necessarily answer the **needs of the users** or just a small number and type of users; (4) policy making at local level is often **reactive** rather than proactive; and (5) **social equity** is rarely considered in new transport innovations. The ambition of SPROUT is to guide cities along the policy cycle (Figure). Furthermore, the ambition of SPROUT is to go beyond the state of the art in understanding and responding to the impacts of new mobility innovations on policy making, as follows:

1. Although there is a common belief that urban mobility is in transition, defining what this transition really means and what is its expected impact remains unclear. SPROUT will define the drivers of urban mobility transition and the stakeholders affected per impact area, will deliver city-specific future urban

mobility scenarios for two time-horizons, and will assess the adequacy and identify the shortcomings of the existing policy framework to effectively harness the impacts of emerging mobility solutions.

2. Currently, little public data collection about urban freight operations occurs, while there are still no standards in Europe that would unify the way of gathering the data collected, nor a common understanding of the minimum data requirements that consider the maturity of the city in urban transportation terms. SPROUT will define a minimum set of data to drive evidence-based urban mobility policy making, customised to the data capabilities of both rich- and poor data environments. Moreover, the project will design an urban mobility shared data space for both passenger and freight transport, as a blueprint for setting up an ecosystem-based mechanism to provide urban mobility data in a harmonised way and populate it with data from the project's partner cities.
3. It is increasingly recognised that urban planners and policy-makers lack an effective approach to anticipate future transformations of the urban mobility environment. SPROUT will deliver a multi-granular (big & small) data-driven approach to provide descriptive & predictive analytics for scanning weak signals (early indicators) of emerging urban mobility changes. This will act as a triggering mechanism for cities to review their policies when changes in urban mobility are detected and apply corrective medium and long-term measures.
4. Many previous EC-funded and other projects that focused on new mobility solutions mainly concentrated on testing the technological feasibility of specific solutions both in the freight and the personal mobility sectors. The impacts have usually been assessed in isolation, considering only specific environmental, economic or social effects often only measured in a closely defined test area (e.g. RESOLVE⁴⁶, CityLab⁴⁷, PORT-Cities⁴⁸). SPROUT will offer currently missing evidence on the sustainability and policy impacts of a number of urban mobility innovations based on an overarching evaluation, monitoring, and data collection framework and new data sources (e.g. big data, crowdsourcing) to enable evidence-based policy making.
5. The lack of capacity at the local authorities to understand technological and financial implications of innovations and integrate evidence into decision-making is also a major barrier to innovation in urban mobility. SPROUT will build new knowledge & offer training covering various policy making stages, focusing on data interpretation, data source harmonisation, and on the improvement, understanding and acceptability of alternative data sources (big data, crowdsourcing). Training will also be provided on the business & financial aspects of implementing innovative solutions, balancing economic feasibility with environmental/social sustainability. Furthermore, SPROUT will also deliver an Urban Policy Toolbox to be used for building cities' capacity on recognising the benefits and appropriate uses of tools that have either been developed as part of the project or were already available and have proven their value in the policy facilitating activities of SPROUT. The Toolbox will be formulated into a decision tree on how to use, combine and phase out the most useful and applicable tools in specific urban mobility environments and along the policy making lifecycle.
6. The CityLab⁴⁹ project has found that stakeholder involvement is key to transferability and implementation of innovative urban measures. Although previous efforts have tried to promote stakeholder involvement at different stages in the planning process (e.g. STRAIGHTSOL, CITYLAB), SPROUT will go beyond these efforts by systematically involving stakeholders in all stages of the planning process through co-creation and participatory evaluation. SPROUT's approach will facilitate the involvement of all relevant stakeholders in the implementation of innovative solutions and in devising policy responses. The impact of each tested mobility innovation will be assessed while alternative policy responses will be selected through stakeholder-based evaluations. The test cases will be detailed through a co-creation process involving end-users & citizens through the Open Innovation Community in order to design solutions that correspond to the users' expectations and anticipated requirements.
7. To date, there has been little evidence of the overall, city-level impact of the new mobility solutions in terms of their sustainability. Therefore, local governments are reluctant to disrupt their policy framework and current ways of working to accommodate these new solutions. In addition, there has been little

⁴⁶ <http://www.resolve-project.eu/>

⁴⁷ <http://www.citylab-project.eu/>

⁴⁸ https://cordis.europa.eu/project/rcn/204150_en.html

⁴⁹ <http://www.citylab-project.eu/>

research carried out about how emerging innovative transport solutions can be supported by policy making in order to leverage a positive impact on economic, social and environmental sustainability. While possible positive impacts have been demonstrated at the local level, the transferability of innovative solutions has often been hindered by the differences in policy, regulatory and cultural factors. While previous projects investigated transferability of innovative solutions to other cities, the new solutions were to be transferred to the current locked-in regulatory and policy framework rather than offering efficient policy responses i.e. the adaptation of current policies and the creation of new policies to accommodate innovations. SPROUT will provide solid evidence for the impact of innovative mobility solutions at the city level by developing scenarios that consider the possible development of the main drivers of urban mobility, the current policy framework, the wide range of stakeholders that can affect the adoption of a solution and develop appropriate policy responses that take into account both external drivers and internal factors (e.g. policy and regulatory framework).

8. The TIDE⁵⁰ project has pointed out that a policy framework that can easily accommodate a measure is an essential factor for implementation and transferability to another city. How to develop such a framework and how to anticipate innovations rather than following them was, however, not addressed. The SPROUT concept will cover the whole process of the emergence, proliferation and implementation of new mobility solutions from understanding and foreseeing impact through harnessing impacts, capacity building, and finally influencing policy. Potential policy pathways will be proposed for different types of emerging innovations that can be adapted to the local circumstances to anticipate the need for policy & regulatory changes. SPROUT will offer a methodology to formulate city-led innovative policy response by analysing the underlying urban policy model to understand how policies impact the urban mobility environment through a systems dynamics model and by looking beyond urban mobility, at factors that drive urban mobility from other domains (e.g. technology, digitalisation, societal changes etc.) by creating plausible and possible urban mobility scenarios.
9. Social equity is rarely considered in new transport innovations, which may benefit the younger, more affluent population groups living in high-density urban areas. Free-floating car sharing and ride-sourcing (e.g. UBER) for example, has been shown to attract specific, more affluent groups of the population. Therefore, it is a concern for local authorities to design policies that support innovations but do not disadvantage specific population groups. In SPROUT, the evaluation and monitoring of the test cases will put emphasis on the social impact and involvement of disadvantaged groups in co-creating & implementing the solution (digitally illiterate, elderly, low-income).

1.4.2 Innovation potential

SPROUT represents a significant potential for innovation in urban mobility, as it will:

1. Incorporate new data-driven approaches to monitor their impact of new policies by developing a unique shared mobility dataspace. Analytics of the data will provide a dynamic way to react to changes in the mobility environment.
2. Encourage innovation through the rigorous evaluation of new urban mobility solutions. SPROUT will integrate a set of tools for the evaluation of innovative mobility projects that take into account the environmental, social and economic perspectives as well as the preferences of all stakeholders. The evaluation of the impacts of the tested innovations will provide evidence for the barriers and drivers of the implementation of those and similar solutions.
3. Ensure transferability through a 3-layer approach to multiply the local impact of the test cases (1st layer) through the engagement of 2nd layer cities, directly learning from the test cases, and wider community of city authorities (3rd layer) for learning & future application of SPROUT results.

⁵⁰ <http://www.tide-project.eu/>

2 | Impact

2.1 Expected impacts

2.1.1 Contribution to the impacts expected in the work programme

Impact 1: SPROUT will ‘produce new, practice-based knowledge on how to navigate urban mobility policy through transition, taking into account legacy systems and the need to integrate new solutions that are at different levels of maturity.’ *Corresponding project objectives: PO1, PO3.*

Cities all over Europe and worldwide are well aware that there is a need for and multiple benefits connected to a transition towards sustainable mobility. At the same time, urban mobility policy has to reflect the daily needs of local companies and residents. Therefore, it is of paramount importance to ensure cities can react on new trends; it is a precondition for cities to pursue sustainable transport.

The project will produce new practice-based knowledge on: (i) the current state of urban mobility and the parameters driving its transition to the future; (ii) how cities react to different innovation foci; (iii) the influence of current urban mobility policies and their inadequacy to address the emerging transport solutions; (iv) the impact of urban mobility policies on different stakeholders and user groups; (v) the barriers, drivers and specific steps to create new policies in anticipation of new business models.

This new knowledge will be co-created with the strong engagement of 15 European and international cities (1st & 2nd layer) of which, 6 will serve as city pilots to acquire first-hand experience and develop practice-based knowledge on urban mobility transition, and 9 cities will validate and expand the knowledge produced. The variety and complementarity of 1st and 2nd layer cities and action types involved, will ensure that the new knowledge produced will address the differences in the: maturity stages of new mobility solutions; degree of embeddedness of solutions to existing systems; governance systems; city sizes; data-rich and data-poor environments. Barriers, drivers and specific steps to create new policies in anticipation of new business models, will be defined. The key indicators (co-defined with the cities) to be used for measuring the ‘new knowledge production’ impact, the respective target values and the impact assessment mechanisms are shown in *Table 9*.

Impact assessment indicators	Impact targets	Impact assessment mechanisms
- level of contribution to the existing knowledge of the current state of urban mobility	- 4 in qualitative scale of 1-5	- survey of the 1 st & 2 nd layer cities
- level of contribution to the existing knowledge of cause/effect relationships between drivers & expected impacts of change	- 4 in qualitative scale of 1-5	- survey of the Open Innovation Community members
- level of contribution to the existing knowledge of the cities’ reaction to different innovation foci	- 4 in qualitative scale of 1-5	- survey of the 1 st & 2 nd layer cities
- level of contribution to the existing knowledge of the level of (in)adequacy of existing urban mobility policies to address the emerging transport solutions	- 4 in qualitative scale of 1-5	- survey of the 1 st & 2 nd layer cities
- no. of policy drivers & barriers identified for the implementation of new mobility solutions	- 20 & 20	- survey of the 1 st & 2 nd layer cities
- no. of stakeholder groups identified that are affected by the urban mobility transition drivers	- 60	- survey of the 1 st & 2 nd layer cities
- no. of small- and medium-sized cities involved in the knowledge production process (30).	- 31	- survey of the 1 st , 2 nd and 3 rd layer cities

Table 9: ‘New knowledge production’ impact assessment indicators

Impact 2: SPROUT will ‘provide added value inputs and contribute to evidence-based policy making at local, regional, national and EU levels’ *Corresponding project objectives: PO2, PO3, PO5.*

SPROUT addresses policy making at every level. The project will provide added value inputs and contribute to evidence-based policy making in the form of: (i) narrative city-specific future scenarios; (ii) city-demonstrated and assessed sustainability and policy impacts of a wide-range of new mobility solutions; (iii) city-specific policies for harnessing the impact of new mobility systems; (iv) a city-led innovative policy response, widely applicable to European cities; (v) a European strategy (roadmap) to navigate urban mobility policy through transition (roadmap); (vi) further ‘Topic guides’ and ‘Practitioner briefings’ of the SUMP 2.0 guidelines; (vii) policy briefs addressing respective actions defined by the Partnership for Urban Mobility; (viii) an international cooperation agenda on urban mobility policy for the EU, the USA and China.

The project’s contribution to evidence-based policy making will be achieved through the demonstration and impact assessment of 6 new urban mobility solutions and the development of city-specific policies for harnessing the impact of new mobility systems. Impacts to be assessed and considered in policy drafting will include, environmental (including spatial), social (including impact on vulnerable population groups, users with different cultural backgrounds and of different gender) and economic (including impact on areas with rapid economic change) sustainability. City-specific policies will be translated into a policy response widely applicable to European cities with contributions/validation by 9 validation cities, by additional 25 3rd layer cities and by the project’s Open Innovation Community. The added value of additional policy contributions (European strategy, SUMP Guidelines, policy briefs, international cooperation agenda) will be ensured by the Open Innovation Community and the project’s international partners. The key indicators to be used for measuring the ‘evidence-based policy making’ impact of the project, the respective target values and the impact assessment mechanisms are shown in *Table 10*. These have been co-defined with the project cities.

Impact assessment indicators	Impact targets	Impact assessment mechanisms
- no. of items identified for the 1 st & 2 nd layer cities (KPIs, drivers) from the Urban mobility transition inventory	- 80	- survey of the 1 st & 2 nd layer cities reported in Deliverable D2.2 & D2.3
- no. of stakeholders participating in co-creation activities for the future mobility scenarios	- 120	- Local workshop/ meeting participants’ lists
- no. of scenarios created for policy impacts of emerging transport solutions	- 12	- Local workshop minutes
- no. of stakeholders participating in co-creation activities for the pilot cases	- 120	- Local workshop/ meeting participants’ lists
- no. of stakeholders participating in the participatory impact evaluation of the test cases	- 60	- Local workshop/ meeting participants’ lists
- no. of proposed city- specific policy responses accepted by city authorities	- 6 pilot cities	- City Authorities’ verification
- no. of SUMP/existing local regulations for which a modification process is formally initiated based on the SPROUT results	- 10	- City Authorities’ verification
- level of applicability of the SPROUT city-led innovative policy response, to a wide spectrum of European cities	- 4 in qualitative scale of 1-5	- survey of the 1st, 2nd and 3rd layer cities and of the Open Innovation Community members
- level of effectiveness of the ‘European strategy’ to navigate urban mobility policy through transition	- 4 in qualitative scale of 1-5	- survey of the Open Innovation Community members - preliminary accepted by the EC
- level of effectiveness of the proposed SUMP Guidelines’ revisions	- 4 in qualitative scale of 1-5	- survey of the Open Innovation Community members

- level of effectiveness of Policy Briefs in addressing respective actions defined by the Partnership for Urban Mobility;	- 4 in qualitative scale of 1-5	- survey of the Open Innovation Community members
- level of applicability of the International cooperation agenda on urban mobility policy for the EU, the USA and China	- 4 in qualitative scale of 1-5	- survey of the Open Innovation Community members
- no. of new policies/regulations related to new mobility solutions initiated 3 years after the project's end	- 60	- follow-up survey to City Authorities
- no. of persons from different cultural backgrounds & vulnerable groups expected (according to the cities) to have access to the new urban mobility solutions/services implemented through improved policy making 3 years after the project	- 350,000	- follow-up survey to City Authorities

Table 10: 'Evidence-based policy making' impact assessment indicators

Impact 3: SPROUT will 'support effectively mobility policies' and 'a viable transformation path towards sustainable mobility'. Corresponding project objectives: PO4, PO5.

SPROUT will support effectively mobility policies and a viable transformation path towards sustainable mobility, by providing tools to enhance cities' policy making capacity and will implement specific actions to foster learning across the consortium and the wider stakeholder community in order to improve the effectiveness of policy making all over Europe and at the European level. More specifically, it will ensure a high impact on 'Effectively supporting mobility policies' through the: (i) Urban Mobility Shared Dataspace, being the quantitative basis for evidence-based policy making (see Impact 2); (ii) evidence-based Early Policy Alert & Action Tracking Approach; (iii) Urban Policy Toolbox; (iv) capacity-building activities in deploying tools for providing evidence for policy making and in designing and implementing urban mobility policies. The key indicators to be used for measuring the 'effectively supporting mobility policies' impact of the project, the respective target values and the impact assessment mechanisms are shown in Table 11. These have been co-defined with the project cities.

Impact assessment indicators	Impact targets	Impact assessment mechanisms
- no. of cities contributing to the Urban Mobility Shared Dataspace	- 10	- Urban mobility data sets provided
- no. of cities adopting the SPROUT big-data analytics approach	- 6 cities	- survey of the 1 st & 2 nd layer cities
- no. of cities officially expressing their interest to explore the introduction of the SPROUT big-data analytics approach	- 10 cities	- survey of the 1 st , 2 nd & 3 rd layer cities
- level of effectiveness of the Urban Policy Toolbox in supporting mobility policies	- 4 in qualitative scale of 1-5	- survey of the 1 st & 2 nd layer cities
- level of effectiveness of the capacity-building activities in designing and implementing urban mobility policies	- 4 in qualitative scale of 1-5	- survey of the 1 st & 2 nd layer cities

Table 11: 'Effectively supporting mobility policies' impact assessment indicators

2.1.2 Further substantial impacts; future framework conditions

The activities of the SPROUT pilot cities focus on different aspects of sustainable mobility, such as intermodal nodes, urban logistics, shared mobility and traffic management. As such, these activities deliver on all dimensions of sustainable transport, i.e. liveability, access (with special attention to vulnerable groups), climate change mitigation, air quality, access, congestion reduction and other socio-economic benefits. These impacts will be multiplied through the further roll out of policies in the validation and 3rd

layer cities, as well as through the dissemination and exploitation activities. At the level of the individual pilot cities, the indicators shown in *Table 12*, with the corresponding target values and assessment methods, as set by the cities, will be used.

Further impact assessment indicators	Impact targets	Impact assessment mechanisms
<i>Economic impact</i>		
- Delivery time reduction	- 20%, Kalisz	- Pilot measurements
- Road congestion reduction due to shorter distance driven by cargo vehicles	- 10%, Kalisz	- Pilot measurements
- Cost reduction of hyper-local logistics	- 20%, Ningbo	- Pilot measurements
<i>Environmental impact</i>		
- Reduction in CO ₂ emissions from local transport	- 2%, Valencia	- Pilot measurements
- Reduction of traditional fuel consumption	- 3% Padua	- Pilot measurements
- Reduction of CO ₂	- 4% , Padua	- Pilot measurements
- Environmental quality improvement (NO ₂ emissions)	- 9%, Padua	- Pilot measurements
<i>Social impact</i>		
- Quality of public space & road user experience improvement	- Qualitative, Tel Aviv	- Pilot survey
- Growth of safety of traffic users and pedestrians & growth of attractiveness of urban areas	- Qualitative, Kalisz	- Pilot survey
<i>Operational impact</i>		
- Increase of multimodal trips linking cycling & public transport	- 15%, Valencia	- Pilot measurements
- Proportion of cargo deliveries using the tested infrastructure	- 30%, Kalisz	- Pilot measurements
- Urban logistics service level improvement	- 20%, Ningbo	- Pilot measurements
-	-	-
-	-	-
- Reduced total crossing time of pedestrians at signalized crosswalks	- 12%, Tel Aviv	- Pilot measurements
- Increase in the modal share of shared mobility solutions	- 10%, Budapest	- Pilot measurements
- E-mobility: recharging points	- + 10 points, Padua	- Pilot measurements

Table 12: 'Further substantial' impact assessment indicators

2.2 Measures to maximise impact

2.2.1 Dissemination of results

The CIVITAS initiative promotes a collaborative approach for the cities and stakeholders members of the CIVIATS community to support them in developing innovative solutions, measures and policies, needed for cleaner and better urban mobility/transport. The CIVITAS initiative has established a framework for coordinated evaluation, dissemination and information exchange activities and supports local partnerships in testing and implementing new approaches under real-life conditions. Through coordination of events and dissemination/capacity building activities, and coordinated impact assessments, the cities and stakeholders of the CIVITAS community develop a knowledge base and their technical capacity while benefiting of expertise and support in implementing and scaling-up innovative solutions/measures.

We, the consortium members of the 814910 SPROUT project acknowledge and share the CIVITAS objectives and, through playing an active role in the CIVITAS family, hope to contribute towards them. In order to promote the CIVITAS initiative, 814910 SPROUT will share the project's lessons and conclusions with the CIVITAS network. We will implement the CIVITAS corporate design such as the CIVITAS logo and the CIVITAS acronym according to the guidelines provided. On request, we will cooperate with the

CIVITAS-secretariat and participate in CIVITAS-lead activities. We will also coordinate the evaluation activities of our project with the impact and process evaluation framework established by the CIVITAS initiative. Further details will be specified in a Memorandum of Understanding that will be agreed between our project (814910 SPROUT) and the Coordination and Support Action – CSA currently supporting the CIVITAS initiative.

The project is committed to explore the possibilities to establish a twinning relationship with a relevant project funded by the US Department of Transportation (USDOT). Twinning is the coordination of research activities in funded research projects of mutual interest, and the collaboration that occurs during the conduct of this research, on the basis of mutual benefit. The project has flexibility in deciding the extent to which it exchanges or collaborates (for example data, information, methodologies) and on the means (for example visits, workshops, publications). The project may agree that well-defined parts of the project are well-suited for twinning, but not the entire project. The suitability for twinning shall be based on whether the anticipated benefits to be obtained merit the respective resources allocated to the activity by each side. If the project decides to twin activities with a project funded by the USDOT, it shall develop and sign a “twinning agreement” with the project funded by the USDOT to guide the twinning. A section on the twinning should be integrated in the periodic reporting.

2.2.1.1 Target audiences

In order to precisely address the dissemination and exploitation of results, SPROUT will focus on the following target audiences:

- European Cities and urban mobility stakeholders, including civil society, research and industry. SPROUT will regularly reach out to this audience and also to the CIVITAS2020 community, including the CIVITAS Forum network as well as the research and industry partners working in CIVITAS2020 research and innovation projects. The involvement of CIVINET Spain and Portugal through UPM and Polis in both SPROUT and the CIVITAS support project SATELLITE makes this connection very straightforward. The European Conference of Transport Research Institutes (ECTRI) has also confirmed their involvement in the OIC.
- These urban mobility innovation stakeholders will be structured in SPROUT’s Open Innovation Community, a facility that will enable in- and outflow of information and ideas. The Open Innovation Community will adopt a Communities of Practice structured approach aimed at enhancement, transfer and take-up of SPROUT’s findings. This Open Innovation Community will be an ideal sounding board as well as a dissemination audience to maximise the SPROUT impacts.
- SPROUT will be globally active, looking at Asian and North-American urban mobility innovation experts as allies and audience for the project’s outcomes. Cooperation has already been established with the University of California Davis, the Massachusetts Institute of Technology: Center for Transportation and Logistics (MIT-CTL), and UN-HABITAT (Urban Mobility Unit, Urban Services Branch). Signatories of the project’s letter of support are envisaged in annex II.
- Finally, SPROUT will also look beyond mobility and seek audiences beyond the conventional urban mobility practitioners: within the areas affected by and driving urban mobility innovation: the Smart Cities community (as structured in the European Innovation Partnership for Smart Cities and Communities), practitioners and academics in disciplines such as governance, political sciences, urban design, social cohesion, geography etc. Expressions of interest in this project have been received in this target audience from the side of European Passenger Federation (EPF), European Platform on Mobility Management (EPOMM), European Technology Platform in Logistics – ALICE, EURO CITIES and SUSTRANS – the latter being a UK charity that looks at all sustainability issues related to transport, but with a particular concern on social and equity issues.

2.2.1.2 Dissemination mechanisms

As a general principle to support the widest possible utilisation and exploitation of SPROUT’s results, the consortium subscribes to the recommendation on access to and preservation to scientific information for the purpose of Open Science. That way, SPROUT ensures that its data and results will be FAIR (findable, accessible, interoperable and reusable). SPROUT will develop three mechanisms for dissemination and exploitation:

- A substantial group of Validation Cities is the primary audience for structured transfer within the project's lifetime. This group of 9 cities will gather throughout the project to co-learn with each other and with the SPROUT pilot cities. The group will be supported on a bilateral basis to validate and take-up SPROUT results, and will meet during the project to discuss and fully understand the project knowledge 'assets'. The objective of the activities in the validation cities, is to create and enhance local impact, through the creation of a local innovation forum, and formulation of a practical, feasible and innovative policy response in view of local and global urban mobility transitions, inspired by the SPROUT approach. In order to accomplish this, the validation cities will have access to SPROUT's technical support partners.
- The above mentioned Open Innovation Community will be an environment where SPROUT outcomes are validated and transferred. The OIC will work online as well as offline, based on a membership that is formally connected to the community. A share of the hubs discussions will be focusing on the validation of project results. Key-deliverables are put to scrutiny of the OIC members.
- As a third important mechanism to maximise impact, international activities are key to reach the North-American and Asian target audience. Next to full partnership of US and Chinese cities and the inclusion of their urban mobility experts in the OIC, specific activities are set up to fully incorporate the international dimension in the project.

2.2.2 Communication activities & products

2.2.2.1 Communication activities towards professional audiences

Collaborative processes such as developed, tested and evaluated in SPROUT need effective, clear and versatile communication procedures and tools. SPROUT sees these communication processes and activities at 5 levels:

1. Communication within the pilot and validation cities: local communication is SPROUT's starting point. SPROUT wants to source local intelligence about the urban mobility situation, and therefore establish Local Innovation Forums in the cities. SPROUT will suggest communication tools that enable local interaction. Processes and their outcomes will be reported upon in various formats (videos, audio stream, pictures, news, and blog items).
2. Communication with the academic world: SPROUT plans to publish three academic articles with open access in peer-reviewed journals with impact factor: e.g. *Transport Policy*, *Sustainability*, *International Journal of Physical Distribution & Logistics Management*. The results of SPROUT will also be communicated through academic conferences both at the European and the international level such as: ***Transport Research Arena (TRA) 2020/2022, NECTAR Conference 2021, World Conference on Transport Research (WCTRS 2022), Transportation Research Board (2020-2021-2022), International Conference on City Logistics.***
3. Communication within the OIC. The OIC will work from an intuitive and practical website. The members will be actively involved in the validation activities of the project through discussions in so-called community 'hubs': at least each half year, 5 discussions will be initiated within the online community hubs and actively moderated by SPROUT partners. A specific hub will be dedicated to co-authoring academic articles for journals such as ***Annals of Operational Research, Transport Policy and Sustainability, International Journal of Physical Distribution & Logistics Management, European Transport Research Review.***
4. Communication towards European urban transport professionals: As described above, SPROUT will make best use of the communication channels offered by the CIVITAS 2020 initiative: the CIVITAS website and the CIVITAS MOVE newsletter in addition to its own communication channels, the SPROUT website, newsletter and a leaflet. SPROUT will summarise its key-outcomes in a final brochure. The European Technology Platform in Logistics – ALICE, the European Conference of Transport Research Institutes (ECTRI) as well as the European Platform on Mobility Management (EPOMM) have actively signed up to supporting the dissemination efforts of SPROUT towards this audience. With regards to events, the OIC will work offline at the CIVITAS forum conferences by organising solutions clinics, where OIC members cooperate to address concrete innovation challenges. SPROUT will focus on the following events for its European outreach: ***Polis annual conference; CIVITAS Forum Conference 2019, 2020, 2021; Transport Research Arena (TRA) 20/22; European Transport Conference 2021; ECOMM 2020, 2021***
5. Communication towards International transport professionals: North-American and Asian urban mobility experts will be addressed by means of webinars as well as workshops (1 in each of the regions).

SPROUT will focus on the following events for its global outreach: **World urban Forum 2020; UNFCCC COP 25/26; International Transport Forum** .

SPROUT envisages the development of the following communication products:

1. The project identity, templates, graphic charter will be developed in the first months of the project, and will adhere to the Horizon 2020 Grant Agreement specifications as well as guidelines of the CIVITAS initiative.
2. The website will be central in the communication of SPROUT. It will include the following features:
 - a. Information about the pilot and validation sites
 - b. Project results: the urban policy toolbox; the shared dataspace
 - c. News and background information
 - d. The SPROUT events and capacity building process, being physical or online.
 - e. Host the OIC, through forum hubs that allow for moderated discussions and the publication of OIC conclusions
3. Leaflet: presenting the project's main elements, translated as necessary by partners for local use
4. Roll-ups to be used during the SPROUT own events and the events SPROUT will attend.
5. e-Newsletter, 6 issues throughout the project will feature project news, highlight SPROUT events and capacity building activities
6. Final brochure will summarise the key-results and highlight exploitation opportunities derived from SPROUT
7. International webinar and workshops organization: to reach the international audiences and enable the establishment and validation of the international urban mobility agenda.
8. OIC meetings and forum

A mapping of the SPROUT communication activities to different target groups, is provided in Table 13.

Target categories	Target audiences	Examples of stakeholders/ Multipliers	Communication mechanisms & tools									
			OIC & OIC website	LIF & local communication tools	Academic journals & conferences	SPROUT website	SPROUT newsletter	SPROUT leaflet	SPROUT final brochure	SPROUT at events	International workshop & webinar	CIVITAS Com. channels (*)
European cities	urban planners - policy makers	Pilot & Validation cities		x		x	x	x	x	x		
		Reference group of 3rd layer cities				x	x	x	x	x		x
		CIVITAS 2020 community						x	x			x
		CIVINET SPAIN			x		x	x	x			x
		POLIS members	x			x	x	x	x	x		
		EPOMM			x	x	x	x	x	x		
		EURO-CITIES	x			x	x	x	x	x		
Urban mobility stakeholders	Civil society	EPF	x		x	x	x	x	x			
		SUSTRANS			x	x	x	x	x			
	Research	CIVITAS 2020 research			x	x	x	x	x	x	x	

		community										
		ECTRI	x		x	x	x	x	x	x	x	
	Industry	CIVITAS 2020 industry community			x	x	x	x	x	x		x
		ALICE			x	x	x	x	x		x	
	Beyond the conventional					x	x	x	x	x		
		EIP-SCC					x	x	x	x		
Global stakeholders	China, US	UN-HABITAT	x			x	x	x	x		x	
		MIT-CTL	x		x	x	x	x	x		x	
		University of California Davis	x		x	x	x	x	x		x	

(*) website, MOVE newsletter, Conference

Table 13: Communication activities mapped to different target groups

2.2.2.2 Communication addressing broader society and media

Next to the outreach to professional audiences aimed at results and knowledge transfer, SPROUT also plans outreach to citizens and this through two main channels:

- The pilot sites and 2nd layer validation sites will be supported in their citizens' dialogue, including new ways of capturing citizens' views on day to day problems in relation to urban mobility. Communication on concrete policy responses derived from SPROUT activities will locally organised, using the cities own media channels as well as other local media.
- National, EU and international media will be addressed with key facts about urban mobility transition, highlighting the most remarkable positive outputs, impacts and benefits from SPROUTs activities in cities. Polis media database, its media partnership with EURACTIV and Thinking Cities, as well as the media outreach capacity of other SPROUT partners will be an important asset in this regard. Also the alliance with the European Passenger Federation, will be of help in this regard, highlighting user aspects of new mobility services, and providing access to communication channels of national passenger associations.

All communication activities will adhere to the Horizon 2020 Grant Agreement specifications as well as guidelines of the CIVITAS initiative.

2.2.3 Assessing the impact of dissemination & communication activities

SPROUT will develop a communication and dissemination monitoring tool for continuous update by the SPROUT partners. It will distinguish between the local level and the project level. The indicators to be used for assessing the impact of the communication activities are shown in Table 14. Target values are provided in parentheses.

Local communication indicators

Local participation in SPROUT meetings and events	Number of meetings/events (6 workshops x 6 1 st layer cities and 1 workshop x 9 2 nd layer cities); participants per local meeting/event (15 stakeholders per local workshop); stakeholder types participating in meetings/events (city/regional authorities 40%, logistics service providers 30%, shippers 20%; other 10%).
Local SPROUT news items	Number of news on city and media channels (6 x 6 1 st layer cities; 2 x 9 validation cities; 1 x 19 3 rd layer cities)
Local uptake of SPROUT related news	Number of articles/press releases/interviews

(facultative) Response to SPROUT surveys	in the local media (3 x 6 1 st layer cities; 1 x 9 validation cities) Number of respondents per survey (10 local stakeholders per survey); respondents per stakeholder category (city/regional authorities 40%, logistics service providers 30%, shippers 20%; other 10%).
Attendance/presentations at external events	Number of external events (10)
Project communication indicators	
OIC performance	Number of OIC members (20); OIC participants per meeting (10)
Newsletter take-up	Number of subscribers (150); number of unsubscribers (30); subscribers' retention rate (80%)
Website	Returning visitors (30%); Page views (50,000 pages; 5 pages / session); clicks; average duration of stay in the website (2 mins)
Project news items	Number of news items on media channels outside the partnership (15)
Uptake of SPROUT related news	Social media quantitative (number of clicks – 1,000, shares – 100, likes - 100, followers - 300, retention rates – 75%) and qualitative indicators (types of comments received, types of followers) ⁵¹
Publication in academic, peer reviewed journals	Number of articles (3)

Table 14: Indicators for assessing the impact of communication activities

2.2.4 Exploitation of project results

Although a detailed exploitation strategy will be defined in Task 8.7, the project team has already preliminarily identified the main projects results that can be exploited and the foreseen exploitation ways. These are depicted in Table 15.

Project results	Exploitation of results in ...			
	further research	developing, creating & marketing a product / process	creating & providing a service	standardisation activities
New mobility systems' sustainability & policy impacts (pilot results)	✓			
Urban policy system dynamics model	✓	✓		
SPROUT city-led innovative policy response	✓	✓		
Urban mobility shared data space	✓	✓	✓	✓
Minimum data set for urban policy making	✓		✓	
Big-data driven early policy alert & action tracking	✓	✓	✓	
Urban policy toolbox			✓	
Policy capacity building courses for cities			✓	
A European strategy to navigate				✓

⁵¹ EC (2018) H2020 Social Media Guide for EU funded R&I Projects

Project results	Exploitation of results in ...			
	further research	developing, creating & marketing a product / process	creating & providing a service	standardisation activities
urban mobility policy				
EU, US, CN international cooperation agenda			✓	✓

Table 15: Expected exploitation of the project results

The preliminary setting for the IPR agreements will be contained in the Consortium Agreement. Following the initiation of the project a detailed IPR strategy will be elaborated (D60). SPROUT's strategy for the management of IPR, will include:

- a verifiable list of all intellectual property rights that have been applied for or registered
- a list of all the results that have commercial applications
- an outline of the ownership of each element of foreground, whether under single-participant ownership or joint one
- an explanation of how the Foreground IP (FGIP) has been or will be used in commercial exploitation
- the purpose, main features and benefits of each product, resulting from the project: innovative aspects in comparison with the ones already available, needs for further development and demonstration activity and implied risks, collaboration needs for further exploitation (e.g. business partnership activities, standards compliance activities)
- how the participants entitled to exploitation are positioned (or should be positioned) in the market
- an analysis of the options for financing the wider post-project continuation and development of the SPROUT products.

The structure for IPR management during the project has been designed to guarantee a structured process in place to identify, assess, protect and subsequently exploit the Foreground IP (FGIP) generated throughout the project. At the centre of the IPR management process is the General Assembly (GA), which will be in charge of formulating the overall IP strategy and ensuring compliance with EC guidelines. Once the IPR strategy has been formulated and agreed upon by all partner representatives in the GA, the implementation of the IP strategy will be handled by the Coordinator. Each partner is solely responsible for identifying background information (BGIP) and foreground information that they themselves generate in the project and report this to the Coordinator. Each partner is also solely responsible for carrying out an assessment process to determine whether or not the FGIP is best exploited via protection or through other means. In consultation with the Coordinator, each partner will decide how best to protect their foreground.

3 | Implementation

3.1 Work plan

3.1.1 Brief presentation of the overall structure of the work plan

The objectives of SPROUT will be pursued by the consortium through the implementation of a work plan, described in this section, consisting of nine Work Packages (WPs) and spanning a three-year period (36 months). Several consortium partners participate in each WP, according to their specific expertise, knowhow and research & business interests, thus creating the ideal mix of technical competence, and research and innovation capabilities, which is the key to guarantee a successful and timely achievement of the project objectives. SPROUT's overall work plan structure is depicted in *Figure 7*.

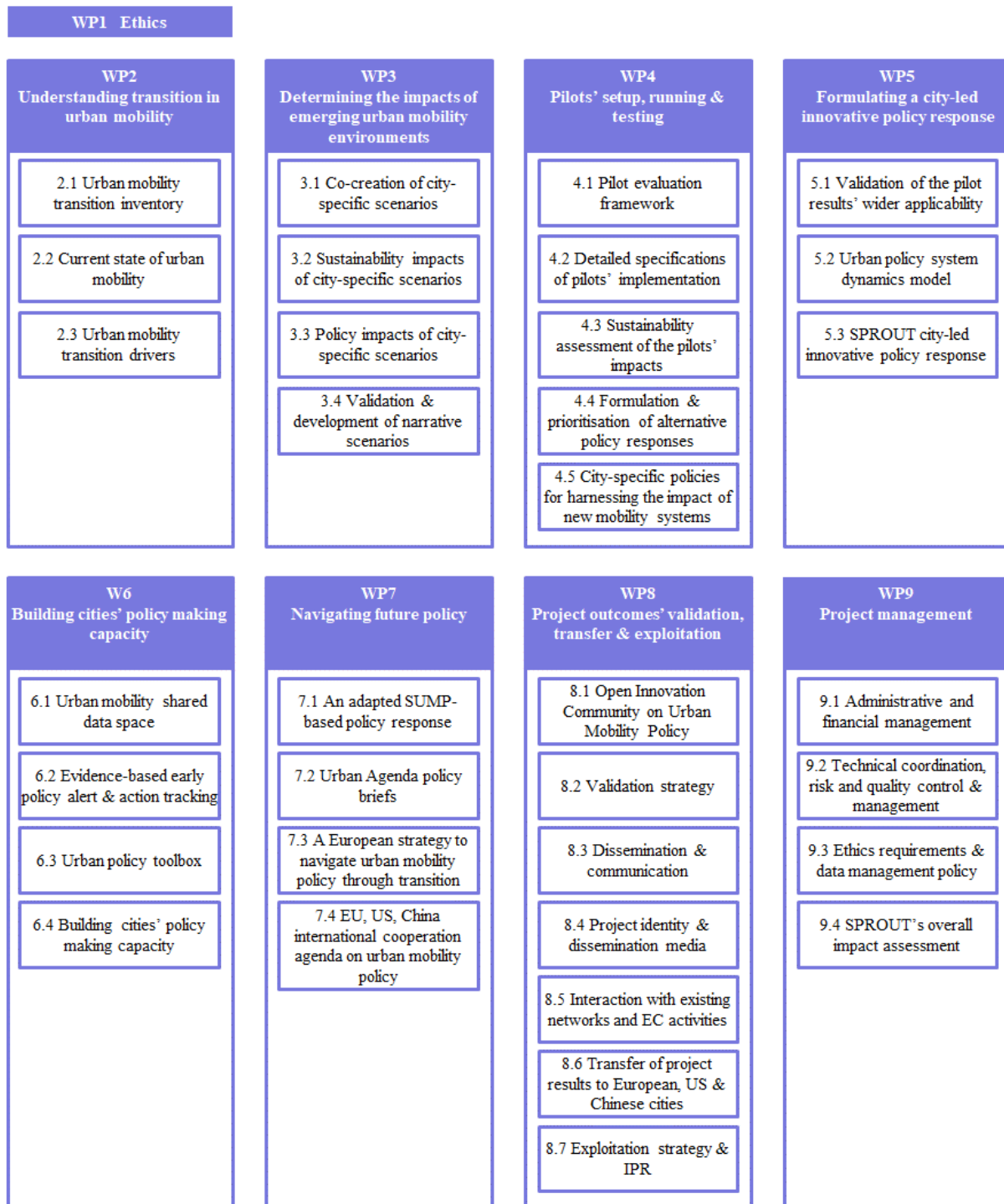
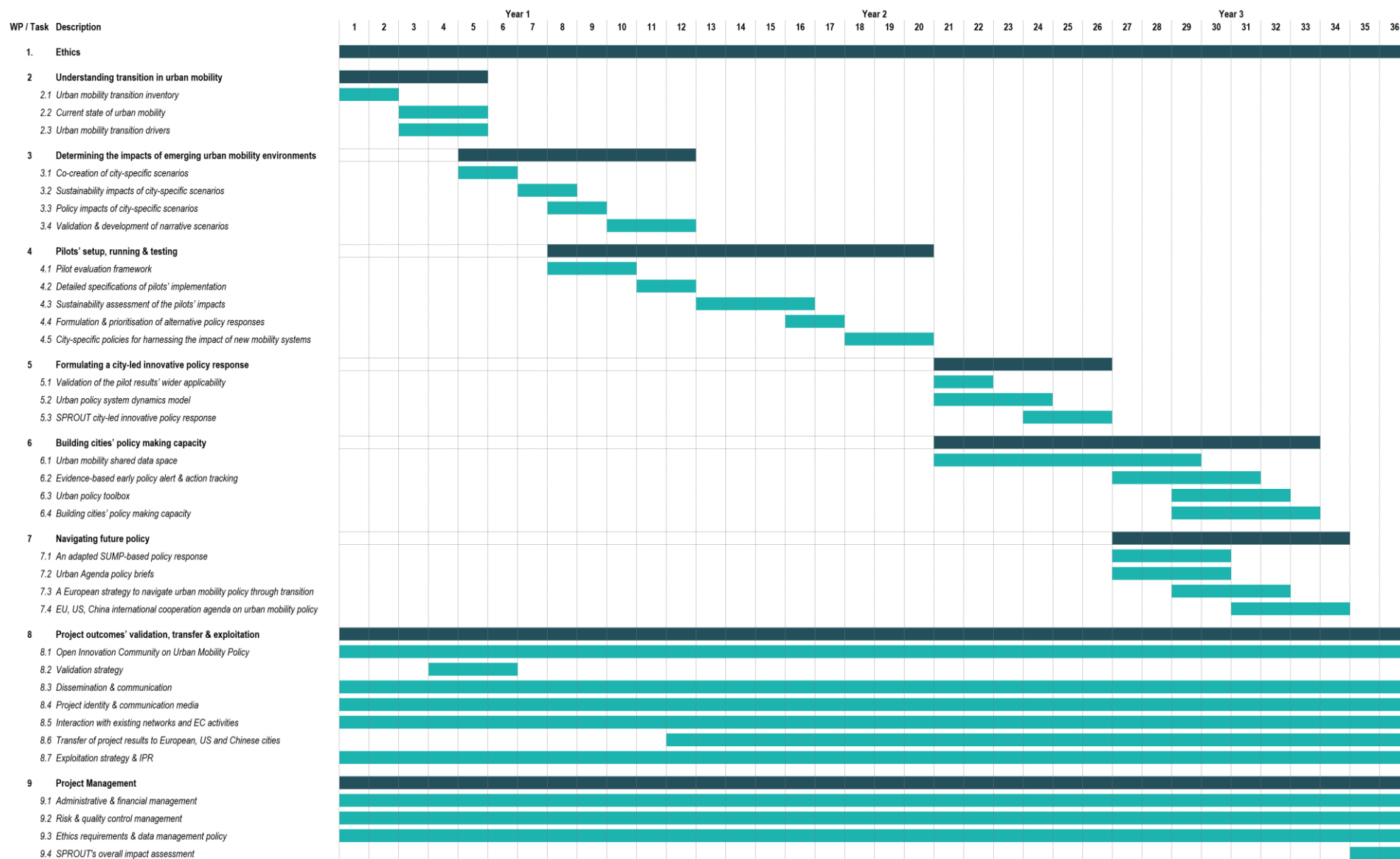


Figure 7: SPROUT's overall work plan structure

3.1.2 Timing of the different work packages and their components (Gantt chart)



3.1.3 Interrelations between the different work packages and their components

The interrelations between the different work components are shown in *Figure 8*. Ethics, project management & dissemination/exploitation Tasks that run horizontally during the whole project duration (i.e. Tasks 7.3, 7.4, 7.5, 7.7, 8.1 & 8.2) are not depicted, in order to simplify the Figure.

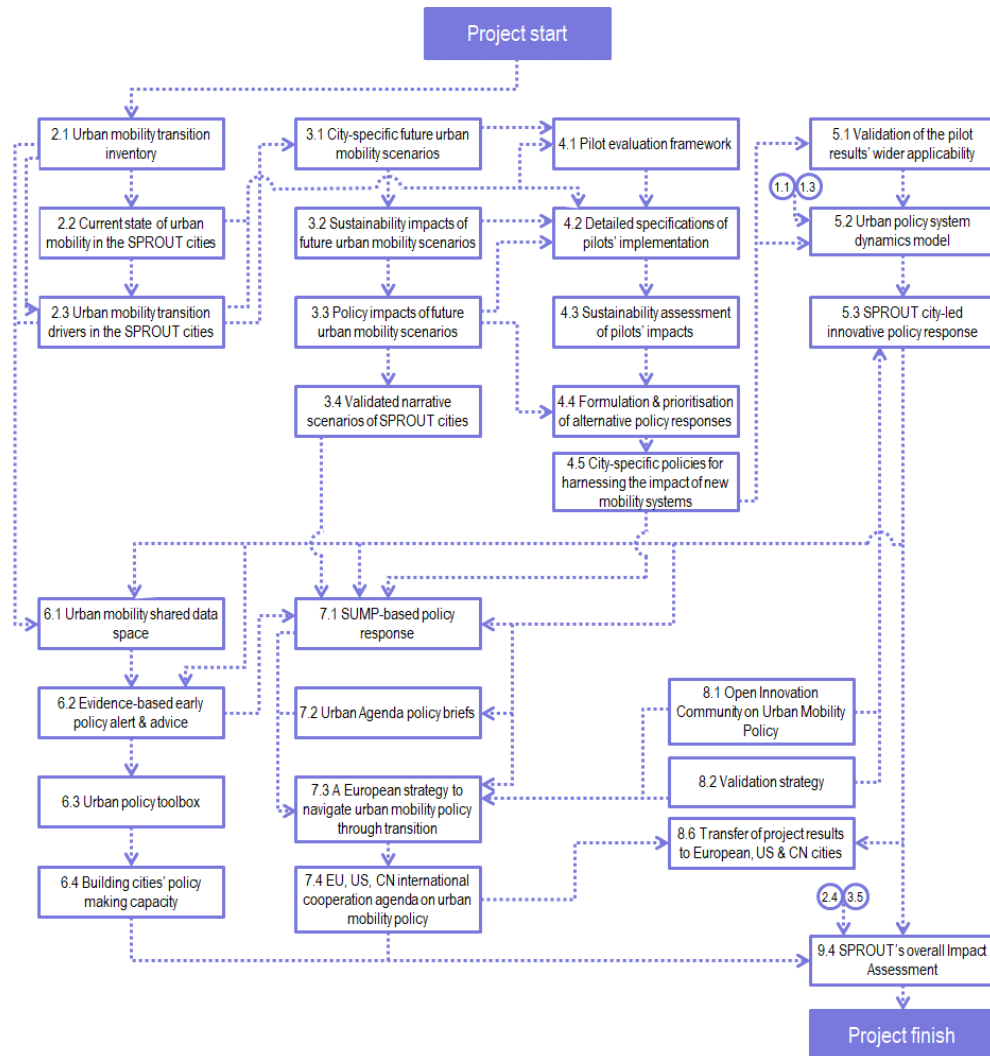


Figure 8: Interrelations between the different work components

3.2 Management structure and procedures

The overall aim of the project management is to ensure a successful execution of the project to meet its objectives. To achieve this, the project's administrative and technical coordinators and the partners will undertake all the necessary management and supporting actions to ensure high quality of its outcomes within the predefined time schedule and budget of the project.

3.2.1 Organisational Structure and Decision making

The organisational structure is characterised by the following constitutional elements that follows an iterative expansion process:

Administrative and Technical Coordinators: The coordination role has been divided into administrative and technical tasks to ensure a smooth and successful implementation of the project from a managerial as well as practical aspect. Together they will be the Coordination Team (CT).

SPROUT's **Administrative Coordination** will be under the responsibility of ZLC who will make use of its expertise and knowledge from participation in multiple EU funded projects (FP7 and H2020), SPROUT's **Administrative Coordinator (AC)** will be Carolina Ciprés, Director of Research at ZLC. She has extensive experience as a member of international networks (ALICE, MIT Global Scale) and participating in European projects (FP7, H2020). Moreover, she has coordinated WINN project "European Platform Driving Knowledge to Innovations in Freight Logistics" that led to the creation of the ETP on Logistics ALICE. The coordinating organisation provides the secretarial and organisational service for the project, including contractual and financial issues, reporting, the coordination of input to documents and their finalising, dissemination, or delivery, preparation of project meetings, the setting-up and running of an infrastructure for internal and external communication, and running the every-day business of the project. Additionally, ZLC will be in charge of controlling the ethics requirements and data management policy (see page 147 for detailed information). For this ZLC will assign a **Data Protection Officer (DPO)** and **Ethics Officer (EO)**. Finally, the administrative coordinator will be responsible for all contractual obligations towards the Commission and will report on regular basis to the EC Project Officer. She may delegate specific tasks to the partners without however sharing her responsibility.

The **Technical Coordination** will be provided by CERTH, guiding the scientific aspect of the project work, supervising technical activities of the different work packages ensuring consistency and quality, and planning the technical tasks timeline, reviews and meetings. Also, the technical coordinator will be in charge of the SPROUT's overall impact assessment. CERTH has extensive experience as Project coordinator or Work Package Leader in urban mobility projects covering both the urban freight and passenger domains and addressing the full spectrum of issues involved. Some examples are AEOLIX, STRAIGHTSOL and NOVELOG. SPROUT's **Technical Coordinator (TC)** will be Aristos Halatsis, Senior Project Manager with more than 20 years of professional experience in logistics operations & urban freight transport, including NOVELOG and SMART-CM.

Innovation Manager (IM): CERTH as Technical Coordinators will work closely with the IM that will be in charge of supervising the innovation process through the various stages of the project. All Work Package Leaders will contribute to this process and the IM will report directly to the Coordination Team. The IM will be Imre Keseru - Senior Researcher and Team leader of MOBI, the department for sustainable urban mobility and logistics at VUB.

Work Package & Task Leaders: Work Package and Task Leaders are contractual partners responsible for a work package or a task respectively. They have responsibility for the preparation and execution of the activities in their work packages or tasks according to the work plan. They may delegate specific sub-tasks to partners without however giving up the responsibility for the overall work package or task. Work Package and Task Leaders are also responsible for providing general guidelines and interfacing with and for coordinating work with other work packages or tasks and in particular of delivering results on time that are needed as input for tasks to be performed in other work packages on time. They are also responsible for regular reporting on the work progress to the rest of the Project Management Group and the General Assembly. In case of major developments that may impact on the overall work plan or in case of problems in carrying out the tasks, they need to inform the Technical Coordinator as soon as possible and discuss with him procedural and strategic issues in order to take common decisions to reach the project's objectives. If considered necessary the AC will provide support in the decision-making process. Each Work Package Leader (WPL) will maintain monthly call conferences with the corresponding task leaders to ensure that there is a correct progress in the technical tasks.

Technical Coordination Team (TCT): For a lean and efficient management structure, a Project Management Group will be the main body for internal communication and decision making for all issues of medium relevance, which do not need a formal decision of the GA. The TCT is chaired by the project Technical Coordinator and consists of all WP leaders and all overall pilot activities coordinators, as well as the Innovation Manager (IM). It is the main body for monitoring the technical progress of the project and the use of resources, for all short-term decisions related to the technical management of the project. The TCT will hold regular online meetings about one per month. If relevant, also specific task leaders may be invited to

these call conferences. Finally, if needed, its members will also meet physically, if possible in conjunction with other project activities.

Administrative Coordination Team (ACT): The AC together with the DPO and the EO will form the Administrative Coordination Team. They will maintain call conferences on a monthly basis or, if considered necessary, bi-weekly.

Pilot Coordinators (PC): The activities in each Pilot City will be coordinated by one specific consortium member in the sense of a Pilot Coordinator. This role has been assigned to FVP for the pilot in Valencia, ILIM to the pilot in Kalisz, BKK to the pilot in Budapest, VIU to the pilot in Padua, Technion to the pilot in Tel Aviv, and NSCIIC to the pilot in the city of Ningbo. Each pilot coordinator will locally run the activities and events, and complete the information required by SPROUT, facilitating the transferability of the pilot city-specific measures policies to the 2nd layer cities.

Validation Management Team (VMT): This group will consist of the following persons:

- Task 8.2 leader (validation strategy) – WI.
- WP5 leader – POLIS.

To ensure a fluent communication flow with the city representatives, POLIS will assign one single contact person for:

- o The 2nd layer cities
- o The 3rd layer cities

All communication to these cities should go through these contact persons.

- Task 8.1 leader – ZLC.

ZLC will assign one single contact person for the OIC members. All communication to these members should go through this contact person to avoid cross-communications.

- The Technical and Administrative Coordinators.

The VMT will maintain regular call conferences during the validation processes.

General Assembly (GA): The General Assembly consists of all individuals working within the SPROUT consortium and is the highest decision making body. If necessary, it will decide upon the (re-)allocation of project budget and any major changes to the structure of WPs as basis for any contract amendments. The GA's general modus operandi will be the ambition to achieve consensual decisions.

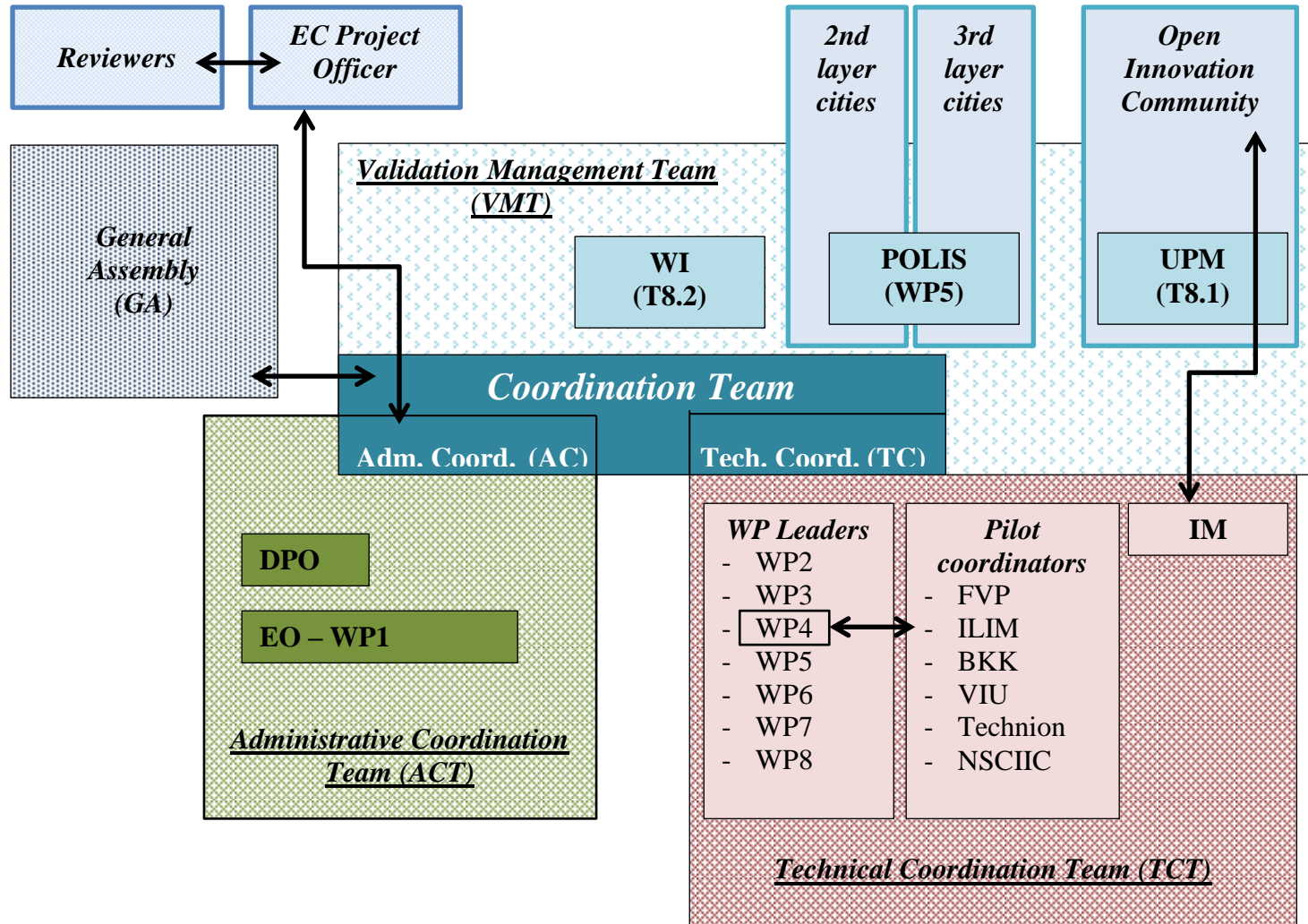


Figure 9: Project Management Structure.

[814910] [SPROUT] – Part B

3.2.2 Internal Quality Control

The detailed procedures of the quality management will be defined within the quality management and control plan (T9.2). In all elements of the work plan, at least 2 partners will contribute to the implementation of work packages and tasks, allowing thus an internal responsible / reviewer scheme. Each object (work package, task, deliverable, and milestone) is assigned to a responsible person in charge of the implementation and of producing the deliverable and/or meeting the milestone. Reports and deliverables will be reviewed by at least two other project partners before evaluation by the coordinator. If the deliverable or milestone is rejected, the responsible person has to rework and resubmit the result. This workflow will be implemented through e-mail exchanges and videoconferences.

3.2.3 Operational planning

To ensure a smooth running of the activities to be carried out and to ease the monitoring of the actions, the consortium will elaborate a detailed work plan based on the work plan submitted within this proposal, updating the tasks to be carried out in each work package, including the respective budgets as well as the division of labour between the partners. The work plan will be supplemented by an up-dated time-schedule. This will be the essential planning and basic monitoring instrument of the project. The optimisation of resources to deliver the best value and larger impact will be targeted while driving the operational planning. The operational planning will especially focus on the milestones.

3.2.4 Risk management & contingency planning

Risk management and contingency planning are implemented proactively in the project. The SPROUT risk analysis & management process will be based on the FERMA Standard⁵². According to this, risk can be defined as the combination of the probability of an event and its consequences⁵³. The process will be owned and managed by the Project Management Group.

3.2.5 Innovation management

Although innovation management is highly dependent on corporate culture and people characteristics, it is also a process that can be managed and improved. This is the reason for having foreseen specific components both in the project's management structure and in its work plan to address this. To illustrate all components' contribution to the innovation management process, Microsoft's innovation management framework⁵⁴ is employed, which involves five consecutive sub-processes:

- envision: putting in place the innovation strategy and the goals to be achieved
- engage: bringing together relevant stakeholders (test case & OIC members) to formulate and share ideas that drive new value creation
- evolve: facilitating collaborative fine-tuning of ideas & outputs to mature their definition and further explore their validity & applicability
- evaluate: providing mechanisms for the potential users to rate the project outputs and assess their innovation potential and their expected impact
- execute: implementing an implementation scenario to further develop and (where applicable) commercialise project outputs.

Through the various stages of the process, SPROUT's generated knowledge and ideas are screened and are gradually translated into new or improved processes, products or services. All project WPs contribute to this innovation management process, supervised by the Innovation Manager (IM). WPs 2-7 mainly contribute to the 'Envisage', 'Engage' & 'Evolve' stages. WP 3 contributing also to the 'Evaluate' stage'. WP 8 contributing to the 'Envision' and 'Execute' stages.

3.3 Consortium as a whole

The achievement of SPROUT's ambition requires a wide involvement of small and medium-sized cities with the commitment and ability to test and examine the impacts of new mobility solutions and formulate adequate

⁵² Federation of European Risk Management Associations

⁵³ ISO/IEC Guide 73

⁵⁴ Microsoft (2013) *Best Practices for Innovation: Microsoft's Innovation Management Framework*

policy responses. SPROUT will deliver numerous validated test cases that take into account different political and socio-economic contexts. Furthermore, the team represents interdisciplinary and complementary research expertise through partners with leading thematic expertise. The consortium proves that SPROUT is truly a city-led initiative (see *figure 9*) and it comprises the following partners:

- **Six pilot cities** (*Valencia (Spain), Municipality of Padua(Italy), Kalisz (Poland), Budapest (Hungary), Tel Aviv (Israel), and Ningbo (China)*) that are all strongly committed to the sustainability and innovative transport solutions yet they all recognise that the implementation of new mobility solutions require a new approach to their policy responses. They are represented by their local public authorities and policymakers that can influence the cities’ policy responses and Sustainable Urban Mobility Plans (SUMP). Their individual interests cover different aspects of emerging urban mobility and logistics solutions (passenger transport and freight transport), city sizes and urban areas (urban and peri-urban), contextual conditions (degree of implementation) and user group needs (including vulnerable groups). The identified mobility solutions are considered widely transferable to other European cities. In addition, the various city partners contribute specific expertise from their own experience.
- **Nine validation cities** that has a clear interest in implementing the new mobility solutions to be tested and its potential policy impacts (*Ioannina, Mechelen, Arad, Hertogenbosch, Ile-de-France, Almada (also represented by the Local Energy Agency of Almada), Birmingham (represented by Transport for West Midlands), Gothenburg, and Minneapolis*). Their involvement will validate the transferability of the policy results specific to the pilot cities and they will contribute to a city response that is widely applicable to European cities.
- **Internal cooperation partners** from **China** and **USA** are included ensuring that the emerging urban sustainable mobility & logistics solutions benefit from the very best technical knowledge & experience, and can be utilised on a truly global scale. *The Pilot City of Ningbo is represented by Ningbo Supply Chain Innovation Institute China, Ningbo Municipal Commission of Commerce, and Ningbo University of Technology and the City of Minneapolis will function as validation city.* Also, EU partners with wide experience in the exchanges of research results between European & Chinese as well as American entities are involved (*Wuppertal, ZLC, CERTH*).

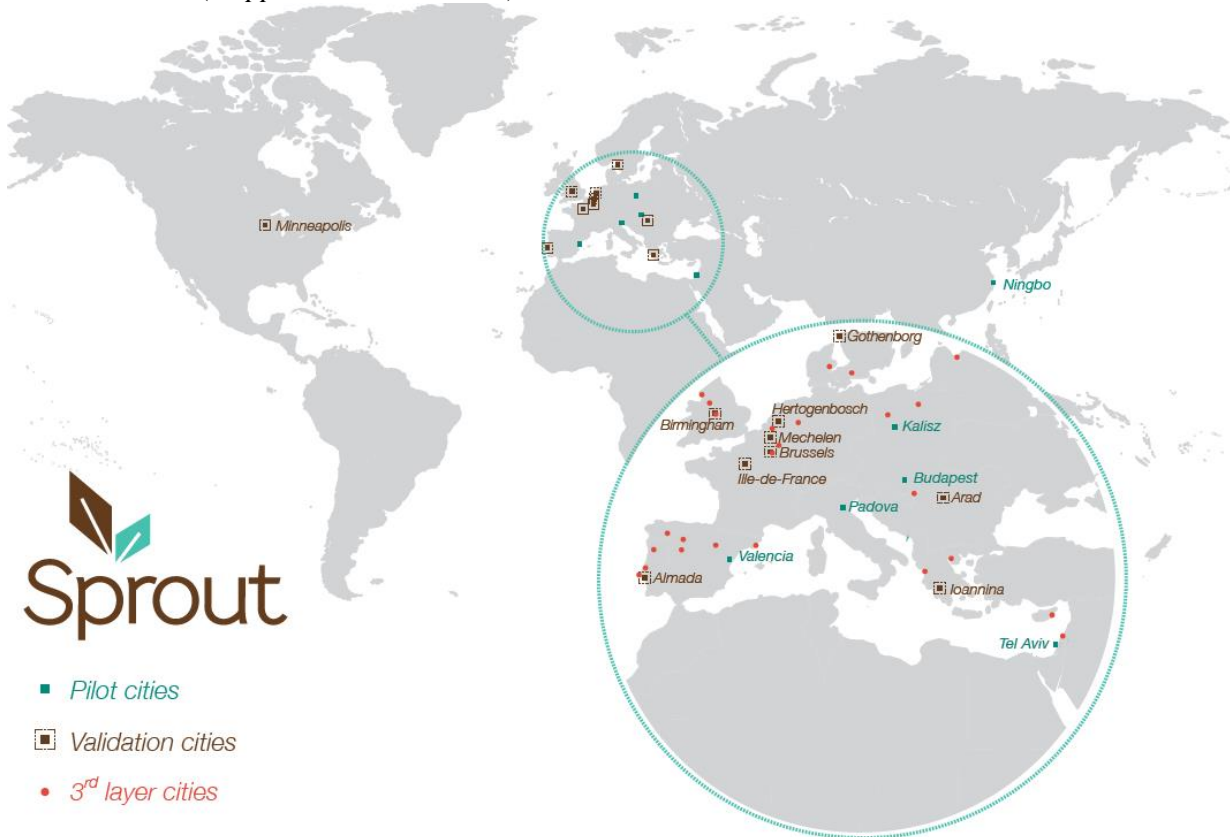


Figure 10: Cities actively involved in SPROUT

- Research is necessary to improve the understanding of the impacts of new urban mobility solutions on policy making and SPROUT has involved **leading thematic experts and research institutions** (*ZLC, CErTH, VUB, and WI*) in an interdisciplinary range of fields within the areas of urban mobility and urban logistics, including the areas of sustainable city mobility, urban freight solutions, SUMP, freight nodes, intermodality, collective public & private transport, IoT transport management tools, shared passengers' mobility, traffic management strategies, etc.
- Each of the pilots have been assigned **technical support partners** represented by a well-rounded combination of highly experienced research institutes and universities with a profound understanding of the needs of cities and businesses (*Fundación Valenciaport, Ningbo Supply Chain Innovation Institute China, Ningbo University of Technology, BKK Centre for Budapest Transport, Venice International University, Technion - Israel Institute of Technology, Instytut Logistyki i Magazynowania – Ilim*). This ensures that the cities with pilots have direct access to cutting-edge practical and scientific know-how and international best practice and that the SPROUT team can extract widely relevant and transferable lessons through thorough monitoring and impact assessment.
- **Economic actors** participate in the SPROUT pilots where this is considered necessary to ensure a successful implementation of the pilot's activities (*Ferrocarrils de la Generalitat València, Budapest Közút Zrt, and Kalisz Business Incubator Foundation*).
- **Experts in the stakeholder involvement techniques** (online and offline) (*WI, VUB, POLIS, ZLC*). The networks and past experience of these partners in activities related to online training modules, international network management and the establishment of European and International collaboration methods will ensure that the project's activities are transferred to a wide European and international audience that involves a wide spectrum of stakeholders and this will ensure a wide European up-take of the project's results.
- **A dissemination specialist:** The strong role of *POLIS* (an organisation of 66 cities specialised in urban mobility with years of expertise in knowledge-transfer) as leader of a separate work package for dissemination and up-take and the extensive network of all consortium members (amongst cities, mobility professionals and in academia) will ensure the utilisation of the SPROUT lessons and products among cities, urban transportation professionals and researchers across Europe.
 - **A project coordinator:** The consortium is led by *ZLC*, partnered with the MIT Center for Transportation and Logistics to form a unique model of collaboration between industry, government and academia. This successful partnership led to the creation of the MIT Global SCALE Network that now spans four continents.. The team members involved from *ZLC* have an extensive experience running international and national research projects. The project coordinator is closely supported by the technical coordinator – *CERTH* - and who acted as project manager in several complex EU projects within FP7 and H2020.

In short, the SPROUT-consortium brings together a team of partners with complementing backgrounds in both urban transportation as well as passenger transport and in local involvement and policy responses as well as combining state-of-the-art academic know-how with practical experience and the capacity of implementation.

3.4 Resources to be committed

During the proposal preparation phase, meticulous attention was paid to all possibilities to keep the total of SPROUT's other direct costs (ODC) as low as possible although the characteristics of the project require a wide spectrum of events and travels to ensure a high impact.

The following strategies were taken into consideration: 1) Six consortium meeting will all be held in conjunction with pilot workshops in months 3, 11, 18, 22, 29 and 33. The decision to merge all face-to-face consortium meetings with events in and visits to the pilot locations reduces workshop and meetings expenses; these will then be rather intensive meetings. 2) The average amount planned per trip is calculated at a low €650. This is a commitment of the consortium to economise for the benefit of concrete implementation and research activities. 3) Close collaboration through regular tele-conferences in between will ensure a close

coordination. 4) The use online tools for training activities that project partners already have at their availability.

Travel costs are distributed amongst the SPROUT partners for travel expenses to attend meetings and project events as well as to cover the travel expenses of the members of the OIC and 3rd layer city representatives to ensure that they can attend our meetings and workshops. Because of SPROUT's explicit city-focus and because of its emphasis on learning, exchange and inspiration, it has travel expenses built into its budget to allow four members to visit all of the validation and pilot sites (ZLC, CERTH, WI, and POLIS). Also, it is ensured that all validation partners will visit the pilot locations. Furthermore, it has been considered of great importance to include a €25.000 travel for OIC members and 3rd layer cities as some may be reluctant to attend the events without funding and their attendance will increase significantly the impact of the project. €26.400 are set aside for the international travel expenses for ZLC, CERTH, VUB, POLIS and WI to visit both Ningbo and Minnesota and for the two partners from Almada as validation city to visit Ningbo.

In the same manner, the pilot cities have been assigned similar travel budgets as well as a specific budget for organizing partner meetings and workshops. The travel budget includes the attendance to 5 consortium meetings (that will be merged with project workshops) as they will be the organizers of one consortiums meeting. With an average cost of €650 for each travel and the attendance of two partner representatives in each meeting this reaches a total of €6.500 ($2 \times 650 \times 5$). The Hungarian partners have only been assigned €5.200 as they will host a meeting ($2 \times 650 \times 4$) and the budget of the partners from Tel Aviv is slightly higher as the travel expenses are higher from Israel.

The meeting and workshop budget has been calculated taking into consideration that all pilot cities will have to carry out 6 local workshops and with a cost each of €500 it reaches a budget of €3.000. Valencia and Kalisz will also organise each a bigger workshop by which they have been assigned additional €1.000. As mentioned before the consortium meetings will take place during some of these workshops.

Also, the validation cities have similar travel budgets as well as a budget assigned to organize local workshops. The validation cities have been allocated each €500 to carry out a local event and a travel budget of €7.800 to cover their attendance to the six consortium meetings and workshops.

Other ODCs include software licences (particularly license to use Survey Monkey), open access publication fee to publish scientific publications, and expenses to attend scientific conferences to present the SPROUT's findings at conferences. CERTH has been assigned €6.000 to purchase a system dynamics modelling software package in WP7. Only ILIM holds an ODC budget of €7.000 in WP4 in order to be able to implement concrete measures on the ground. The sensory network in Kalisz will require the purchase of electronic components for the construction of base stations - including microcontrollers, transceivers, antenna systems, power supplies, printed circuit boards, small electronic components, housings as well as structural elements for their assembly (trusses, lashings, etc.). In addition, sensors in parking spaces will be constructed on the basis of multi-axis magnetic field sensors and electronic components of radio systems analogous to the base stations. ILIM will do the specific development of an IoT application but they will need to purchase the necessary components. WP3 has assigned €4.500 to VUB to create a standard graphics design for the workshop scenarios and €400 for each validation city to have a visual harvesting (graphics design on the spot during workshops). This will guarantee an innovative workshop method that will maintain the interest of the attendees. A €25.000 budget is held by Polis for various dissemination activities, in particular the creation of the project identity, templates, graphic charter, the website development, layout of leaflet and e-Newsletters, roll-ups, and the organization of an international event as well as OIC meetings and forums.

Lastly, a total budget of €3.200 has been included to go through the audits to provide certificates on the financial statement (CFS) for the partners whose actual direct costs are more than €325.000: ZLC and VUB. An approximate amount of €1.600 has been assigned for each partner based on our experience in past projects.

All depreciation costs for equipment, infrastructure or other assets in the project are in compliance with Article 6 and will be recorded in the appropriate beneficiary's accounts, purchased in accordance with Article

10 of the grant agreement and written off in accordance with international accounting standards and the beneficiary's usual accounting practices.

Table 16: 'Other direct cost' items (travel, equipment, other goods and services, large research infrastructure)

5) POLIS	Cost (€)	Justification
Travel	€7.800	Six European travels to attend consortium meetings (2 representatives / €650 per travel)
	€10.400	Eight European travels to visit validation cities (2 representatives / €650 per travel)
	€4.400	Visits to Ningbo & Minnesota (2 representatives / €1.100 per travel)
Equipment		N/A
Other goods & services	€2.500	Project identity, templates, graphic charter
	€8.000	Communication tools: Website development
	€1.500	Communication tools: Leaflet
	€1.200	Communication tools: e-Newsletter, 6 issues
	€3.500	International workshops organization
	€2.500	Communication tools: Roll-ups
	€4.000	Final brochure
	€1.800	OIC meetings and forum
Total	€47.600	

6) WI	Cost (€)	Justification
Travel	€7.800	Six European travels to attend consortium meetings (2 representatives / €650 per travel)
	€10.400	Eight European travels to visit validation cities (2 representatives / €650 per travel)
	€4.400	Visits to Ningbo and Minnesota (2 representatives / €1.100 per travel)
	€20.000	Travel budget for representatives of 3rd layer cities
	€ 1.600	Travel budget for other stakeholders
Equipment		N/A
Other goods & services	€5.000	Attendance to international conferences (travel + registration)
Total	€49.200	

7) VALENCIA	Cost (€)	Justification
Travel	€6.500	Five European travels to attend consortium meetings (2 representatives / €650 per travel)
Equipment		N/A
Other goods & services		N/A
Total	€6.500	

16) TLV	Cost (€)	Justification
Travel	€10.500	Five European travels to attend consortium meetings (1 representative in three meeting/€1.500 per travel and two representatives in two meetings (3*1500)+(2*1500*2))

Equipment		N/A
Other goods & services	€3.000 €400	6 local workshops and with a cost each of €500 Visual harvesting (graphics design on the spot during workshops)
Total	€13.900	

18) ILIM	Cost (€)	Justification
Travel	€6.500	Five European travels to attend consortium meetings (2 representatives / €650 per travel)
Equipment	€7.000	Purchase of electronic components for the construction of base stations - including microcontrollers, tranceivers, antenna systems, power supplies, printed circuit boards, small electronic components, housings as well as structural elements for their assembly (trusses, lashings, etc.
Other goods & services		N/A
Total	€13.500	

19) KALISZ	Cost (€)	Justification
Travel	€6.500	Five European travels to attend consortium meetings (2 representatives / €650 per travel)
Equipment		N/A
Other goods & services	€4.000 €400	6 local workshops and with a cost each of €500 and one big workshops with a cost of €1.000. Visual harvesting (graphics design on the spot during workshops)
Total	€10.900	

20) KALISZBIF	Cost (€)	Justification
Travel	€6.500	Five European travels to attend consortium meetings (2 representatives / €650 per travel)
Equipment		N/A
Other goods & services		N/A
Total	€6.500	

21) MoI	Cost (€)	Justification
Travel	€7.800	Six European travels to attend consortium meetings (2 representatives / €650 per travel)
Equipment		N/A
Other goods & services	€500	Organisation of local workshop
Total	€8.300	

23) ARAD	Cost (€)	Justification
Travel	€7.800	Six European travels to attend consortium meetings (2 representatives / €650 per travel)
Equipment		N/A
Other goods & services	€500	Organisation of local workshop
Total	€8.300	



25) IDFrance	Cost (€)	Justification
Travel	€7.800	Six European travels to attend consortium meetings (2 representatives / €650 per travel)
Equipment		N/A
Other goods & services	€500	Organisation of local workshop
Total	€8.300	

26) CMA	Cost (€)	Justification
Travel	€7.800	Six European travels to attend consortium meetings (2 representatives / €650 per travel)
	€2.200	Visits to Ningbo (2 representatives / €1.100 per travel)
Equipment		N/A
Other goods & services	€500	Organisation of local workshop
Total	€10.500	

28) AGENEAL	Cost (€)	Justification
Travel	€7.800	Six European travels to attend consortium meetings (2 representatives / €650 per travel)
	€2.200	Visits to Ningbo (2 representatives / €1.100 per travel)
Equipment		N/A
Other goods & services		N/A
Total	€10.000	

4 | Members of the consortium

4.1. Participants

Partner	Fundación Zaragoza Logistics Center			  ZLC MIT GLOBAL SCALE NETWORK TALENT HUB FOR SUPPLY CHAIN Zaragoza Logistics Center
Short Name	ZLC	Type	Research organisation	
Role	Coordinator	Country	Spain	
Website	www.zlc.edu.es			
Brief Description				
<p>Zaragoza Logistics Center (ZLC) is an international center of excellence for research and education in logistics and Supply Chain Management that actively engages with industry and the public sector to develop and disseminate knowledge. We act as a catalyst for regional innovation and research in the area of logistics and SCM. A core purpose of ZLC is to integrate supply chain management into the business enterprise. The research program is aligned to Zaragoza Logistics Center's (ZLC) mission of focusing on enhancing economic growth and competitiveness through innovation. The partnership incorporating the No.1 academic institution in the field (Massachusetts Institute of Technology), Aragón's regional university and government, and industry partners serves as an exclusive model for closer cooperation between industry, public administration and academia in funding research and using the knowledge transfer accumulated to rapidly reap commercial rewards. To this end ZLC has developed 100+ R&D collaborative projects with regional, national and European industry focused on logistics and SCM. ZLC has contributed to the industrial expansion and diversification of the Aragón economy through its educational and research initiatives by providing skilled workforce and knowledge transfer to the companies established in PLAZA (logistics park of Zaragoza) and across the region. Furthermore, ZLC has a strong knowledge based background. Our Faculty published 34 international and indexed publications that appear in the most prestigious international journals: Productions and Operations Management, European Journal of Operational Research, MSOM- Manufacturing and Service Operations Management or Operations Research.</p>				
Main tasks and responsibilities within the project				
<p>ZLC will be the Administrative Coordinator of the project and as such will lead WP1 (Ethics) and WP9 (Management).</p> <p>ZLC has a wide past experience in the coordination of pilots, Living Labs and the overall management of work packages related to their execution which makes it the ideal partner for leading work package 4: Pilots' setup, running & testing. Also, ZLC has contributed in past initiatives to the development of SUMP's in cities specifically in the field of freight distribution. Considering the past and current experience of ZLC, they will contribute to the following tasks and activities:</p> <ul style="list-style-type: none"> • Integration of freight distribution with passengers mobility plans • Development of new strategies for freight distribution • KPI's development and assessment • Integration of SUMP's • Assessment and evaluation of pilots • Transferability of solutions in the project's 2nd and 3rd layer cities. • Dissemination of actions • Training programs (as educational center) <p>In addition, ZLC has a strong network of collaborators that involves relevant European and international contacts in the transport sector, including policy makers, end-users and transport service providers, academia and research organisations. In this sense, ZLC is member of ALICE (Alliance for Logistics Innovation through Collaboration in Europe), which is the European Technology Platform for</p>				

Logistics (official recognition for the EC in July 2013). ZLC Director is a member of ALICE Steering Group and ZLC faculty participate actively in ALICE Working Groups one of them devoted to Urban Logistics. Dr. Susana Val is active member of WG5 Urban Logistics. ZLC is also member of European fora such as the Smart Cities and Communities Stakeholder Platform, UERA (Urban Europe Research Alliance), Civitas Spain & Portugal, Cities for Mobility, and ERRIN (European Regions Research and Innovation Network). As well as, ZLC Research Office has a wide experience in setting up and running European fora and networks, and also in developing methodologies for dissemination and uptake of innovation actions and results.

Principal Team Members involved in the project

Ms. Carolina Ciprés (female) is Director of Research at Zaragoza Logistics Center and Chair at the Spanish Center of Competence in Logistics (CNC-LOGISTICA). She is a graduate from the MIT-Zaragoza International Logistics Program with a Master of Engineering in Logistics and Supply Chain Management. She also holds an MSc degree in Chemical Engineering by University of Zaragoza (Spain). Prior to joining ZLC, she worked in industrial companies from different areas such as plastic manufacturing, foodstuff, ICT and environmental engineering. She has participated in R&D projects on a national and European level (FP6, FP7 and H2020) in the fields of supply chain security and risk management, logistics clusters and urban mobility. Within these projects she has performed research as well as project management tasks. Moreover, she has coordinated WINN project “European Platform Driving Knowledge to Innovations in Freight Logistics” that led to the creation of the ETP on Logistics ALICE.

Dr. Beatriz Royo (female) is a Research Fellow at the MIT-Zaragoza International Logistics Program. Dr. Royo has a Ph.D. degree of Computer Engineer in the field of Transport Optimization with a focus on long distance transportation by road, Vehicle Routing, Hub Location Allocation Problems and Ant Colony Optimization. MSc. degree based on mechanical systems from the Faculty of Engineering, University of Zaragoza, Spain. Dr. Royo’s main research areas are combinatorial optimization, operational research, decision support systems, mathematics algorithms and advanced planning applied on transport and logistics. During her career Dr Royo published several papers in journals as well as on scientific conferences. Dr. Royo has also been employed in “Aragon Institute of Engineering Research” as a researcher engineer for transport optimization and as a decision support systems developer and in “Technological Institute of Aragon” as an automation software developer.

Dr. Susana Val (female) is Director of Zaragoza Logistics Center and the Manager of the Transport Research Group. She obtained both a PhD and MSc degree in Industrial Engineering at the University of Zaragoza (Spain), where she is also involved as a researcher in the Group of Transport and Logistics Engineering (GITEL). Furthermore, she studied the Master of Engineering and Logistics at MIT (Massachusetts Institute of Technology) as a visiting student. Her current research activities are city logistics and urban distribution; in particular best practices, new policies development, innovations and modeling of urban areas for goods distribution. Also, she has participated in various projects and studies related to multimodal transport and green corridors with a special focus on railway promotion and carbon footprint. Finally, she collaborates in research related to logistic infrastructures and air cargo transport and its relation to the supply chain.

Dr. Milos Milenkovic (male) is a Research Fellow at the MIT-Zaragoza International Logistics Program. He holds also a position of Assistant Professor at The Faculty of Transport and Traffic Engineering, University of Belgrade, Serbia. Dr. Milenkovic has a Ph.D. degree of Technical Sciences in the field of Traffic and Transportation with a focus on rail freight car scheduling and fleet sizing problems, Magisterial degree of Technical Sciences with a focus on train dispatching problems and M.Sc. degree based on railway related intelligent transportation systems from the Faculty of Transport and Traffic Engineering, University of Belgrade, Serbia. Dr. Milenkovic’s main research areas are mathematical optimization, model predictive control theory, time series analysis, project management and engineering economy with a special focus on transport related applications. He is engaged as a member of editorial board of a number of scientific conferences and also as a reviewer of a number of

prestigious peer-reviewed journals, like “International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems”, ”Applied Mathematical Modelling” and ”Transportation Research Part E”. During his career Dr Milenkovic published more than forty papers in journals as well as on scientific conferences. Dr. Milenkovic has also been employed for two years in Public Enterprise ”Serbian Railways” as a leading engineer for traffic organization and timetable construction.

Main relevant networks and experience in National and European Projects

Under the research line “**Transport & Urban Mobility**”, ZLC researchers work on issues related to infrastructure, freight transportation and urban mobility, logistics corridors and the transport policies of Spain, EU and Latin America. This includes the promotion of intermodal transport, urban mobility, multimodality, the creation of transport networks and the improvement of logistics parks as fundamental nodes for the development of the supply chain. Projects that show the wide expertise of ZLC on such research area are the following:

- **Mobility4EU (Action Plan for the future of Mobility in Europe)**, that is developing a supported and consensus-based action plan using a Multi-Actor Multi-Criteria Analysis (MAMCA) to consult a broad stakeholder community representing the main societal actors including vulnerable to exclusion citizens in Europe.
- **SOLUTIONS (Sharing Opportunities for Low Carbon Urban Transportation)**, that is supporting the uptake of innovative sustainable urban mobility solutions in Europe and other regions in the world, in particular in Asia, Latin America and the Mediterranean.
- **MOBITRANS (Innovative traveller information technologies for the promotion of sustainable urban mobility)**, that promoted urban mobility and the use of public transport through the research and development of new information methods and technologies for planning of urban journeys by travellers.
- **DUMZ (Analysis and optimization of Urban Freight Distribution in Zaragoza)**, that analysed the problems stemming from the urban freight distribution in the city of Zaragoza, where ZLC is located, to design a series of demonstrators to prove different actions aiming at improving the supply conditions.
- **MEDUSA (Efficient micro-consolidation centers for sustainable urban freight)**, that proposed micro-consolidation centers as an innovative action in the field of urban freight distribution to improve the productivity of transport companies and reduce the flow of heavy vehicles in the city center.
- **SUNRISE - Sustainable Urban Neighbourhoods - Research and Implementation Support in Europe** that develops, implements, assesses and facilitates co-learning about new, collaborative ways to address common urban mobility challenges at the urban district level through “neighbourhood mobility labs” and thus to lay the foundation for a Sustainable Neighbourhood Mobility Planning concept.

Publications, services and patents related to the project

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Partner	UNIVERSIDAD POLITÉCNICA DE MADRID			 
Short Name	UPM	Type	University	
Role	Partner	Country	Spain	
Web site	www.upm.es			

Brief Description

UPM is the largest Spanish technological university as well as a renowned European institution. With two recognitions as Campus of International Excellence, it is outstanding in its research activity together with its training of highly-qualified professionals, competitive at an international level. More than 2,400 researchers carry out their activity at the UPM, grouped in 216 Research Groups, 10 Research Centres and 55 Laboratories, all of them committed to transforming the knowledge generated into advances applied to the production sector.

The intense collaboration with governmental bodies and industry guarantees that research at the UPM offers real solutions to real-world problems. The dynamism of R&D&I activity at the UPM, together with the transfer of knowledge to society, is among its lines of strategy. These two commitments place it among the Spanish universities with the greatest research activity and first in the capture of external resources in a competitive regime. UPM heads the Spanish Universities' participation in the 7th European Framework Program with more than 280 projects and more than 80M€ funding. Moreover, every year, UPM applies for around 40 patents and receives a similar number of concessions demonstrating a high commitment to innovation. Regarding business creation, UPM is leader, being generated about 140 businesses. Its support and backing of the business sector is very close. It annually signs around 600 contracts with private businesses.

All this shows that UPM is an institution committed to the transfer of knowledge generated through its research structures to society, and its transformation into advances and technological developments applied to the productive sector.

In addition, the Transport Research Centre (TRANSyT) is an organisation launched in 2004 by the UPM with the purpose of generate management capacity and participation in programs, projects and vanguard investigation within the transport area, with special interest in the European Research Area. TRANSyT is aimed at promoting the relationship with centres of similar characteristics; national, European and worldwide, in order to exchange experiences, advising and the development of prototypes or pilot actions. It covers activities in different transport related fields, including: financing, economics and transport planning, management of infrastructure and services, environmental, social and regional impacts of the transport, local and regional sustainable transport strategies, urban transport and mobility management, information technology solutions on environment and transport.

TRANSYT's fields of expertise include a number of European R+D projects such as PROSPECTS, PLUME, EURNEX, ASSET, STEPS, TRANSFORUM, TRANSURBAN, EBSF I and II, HERMES, METRONOME, 3Ibs, INSIGHT, ICT-Emissions, TRI-VALUE, CITY-HUB (as coordinator), etc.

It is also active in international networks such as TRANSPORTRADE, ERTRAC and NECTAR, as well as in many national I+D+i projects.

Main tasks and responsibilities within the project

UPM will carry on tasks in WP1, related to the analysis of the current state of urban mobility and its transition drivers, and the analysis of the impacts of emerging urban mobility environments (WP2). Also will be active in WP 4 and 5, to formulate a city-led innovative policy response and contributing to design an urban policy toolbox to help building cities' policy making capacity. In WP6, it will be involved in the design of a European strategy to navigate urban mobility through transition and the elaboration of an adapted SUMP-based policy response.

Finally, Transyt-UPM will also participate in WP7 (Project Outcomes' validation, transfer and exploitation), due to its close contact with representatives of European cities, and will be able to provide a practical point of view.

Besides, Transyt-UPM is close linked to the CIVINET Spain and Portugal Network, since is carrying on its Technical Secretariat, and all of the WP7's tasks involve a city approach set of strategies perfectly in accordance with the CIVINET objectives.

Besides, both tasks are aligned to CIVINET Spain and Portugal Network's interest, as they are related to the dissemination and validation of knowledge about the deployment of innovative urban mobility solutions and policies in passenger and freight transport. The Association will take advantage of its network of contacts to disseminate at local level the project results and will engage cities in the active participation in order to replicate the good results, scaling them at local level. CIVINET Spain and Portugal has provided to be able to develop a policy at local level involving high level key stakeholders such as Ministries or local Networks along with the cities.

Principal Team Members involved in the project

Dr María Eugenia López-Lambas (female) is Associate Professor in Transport and Transport Economics at UPM since 2005 and Researcher at TRANSyT since 2000. She has an Msc in Land Transport (UPM, 2000), Maritime Transport and Port Management (UPM, 2001) and Sustainable Transport (UPM, 2005) as well as a PhD in Law (Universidad Complutense de Madrid, 1995). She has extensive experience as a member of international scientific committees and advisory groups (ECTRI, FERSI, CIVINET Spain-Portugal), as a researcher in international and national research projects (more than 15 in the past since 2002), among them

- Guidelines for the implementation of SUMP in Spain (2006)
- Guidelines for the implementation of Green Transport Plans for Companies in Spain (2006)
- ASCIMER: an EIB funded project. Development of a methodology for assessing Smart City initiatives for the Mediterranean Region (2016)
- ProBici: a methodology to collect and identify Good Practices on urban cycling infrastructures' designs. (2012)
- Campus Sostenible (Sustainable Campus): A Methodology for the promotion of sustainable transport mobility on college campuses (2009)
- Implementation and management of private traffic limitations in urban areas: experiences and methodologies. WIT. Transactions on the Built Environment. (2012). ISSN 1743-3509
- Rebalancing urban mobility: A tale of four cities. Proceedings of the ICE -Urban Design and Planning. 166 - DP5, pp. 274 - 287. Institution of Civil Engineers (2013). ISSN 1743-3509
- Report: The cities and the bicycle, for the Civinet Spain and Portugal network (2016)
- Pain and Joy of a Panel Survey on Transport Studies. Transportation Research Procedia. 18, pp. 248 - 255. Elsevier (2016).
- Methodology for assessing the cost effectiveness of Sustainable Urban Mobility Plans (SUMPs).

The case of the city of Burgos. Journal of Transport Geography (2018)

She has also experience as a consultant in the public and private sector (European Investment Bank, Deloitte, Venezia Port Authority, Steer Davies Gleave, etc.). She is author of over 40 publications in topics related to different aspects of urban transport (e.g. infrastructures, benchmarking, urban mobility management).

Dr. Andrea Alonso (female) holds a degree in Civil Engineering, a Msc in Transportation and a PhD in Urban and Transport Planning, from the Universidad Politécnica de Madrid. At the present, she is Assistant Professor at the School of Architecture (UPM) and works in TRANSyT UPM as Senior Researcher. She has been working in TRANSyT UPM since 2011 and during these years, she has collaborated in a range of national and international research projects related to urban transport, among them, HERMES-7FP (EC), Ciudad 2020, INSIGHT-7FP (EC) and HARMONY- CEF 2015 (EC). She is member of the Metropolitan Mobility Observatory, an institutional initiative to analyse the public transport systems of the main Spanish cities and member of CIVINETSP. Andrea Alonso has participated as a co-author in 6 books and has published more than 10 peer- reviewed publications in the field of mobility and urban planning, 4 of them indexed in SCI database.

Dr. Julio A. Soria-Lara (male) is Senior Researcher at TRANSyT UPM and Honorary Researcher at the University of Oxford (UK). His research focuses on the use of scenario building to integrate transport and land use planning, including logistics. He has published more than 50 peer-reviewed international scientific journal articles (20 indexed in JCR), books and book chapters, and more than 60 contributions to international conferences. His research has often led to practical applications, e.g. with the use of scenario building to design policy pathways in the region of Andalusia (Spain) against CC. He has led several international and national research projects, often in consortia with practice, e.g. the European Marie Curie Project “BACK-SCENE: Backcasting scenarios as collaborative learning process: involving stakeholders in transport climate policy” and the European project “EXPERIENTIAL: Using an experiential approach to design proactive environmental assessment instruments for transport planning”. He is also leading several research projects as PI, focused on the application of scenario building in transport planning. The most relevant is the project: “TRANS-URBAN: Simulating collaborative scenarios to implement sustainable transport policies” funded by the Spanish R+D Council for the period 2018-2021.

Main relevant networks and experience in National and European Projects

Apart from the above mentioned through the different sections,

- Transyt-UPM is close linked to the CIVINET Spain and Portugal Network, since is carrying on its Technical Secretariat, and all of the WP7's tasks involve a city approach set of strategies perfectly in accordance with the CIVINET objectives
- Transyt-UPM is part of international networks such as TRANSPORTRADE, ERTRAC and NECTAR
- Transyt-UPM is close linked to the CIVINET Spain and Portugal Network, since is carrying on its Technical Secretariat, and all of the WP7's tasks involve a city approach set of strategies perfectly in accordance with the CIVINET objectives
- Transyt-UPM is part of the international network TRANSPORTRADE
- Transyt-UPM is part of the international networks ERTRAC
- Transyt-UPM is part of the international networks NECTAR
- National Programme R&D “TRANS-URBAN. Simulation of collaborative scenarios for integrated policies of transport and land use”. 26,800€. PI: Julio A. Soria-Lara
- EU-7PF – Andalusian Government: “BACK-SCENE. Backcasting scenarios as collaborative learning process: Involving stakeholders in transport climate policy”. 157,357€. PI: Julio A. Soria-Lara
- EU. H2020. Integrated Climate forcing and Air pollution Reduction in Urban Systems. 6.815.765 €. PI: Denis Sarigiannis

Publications, services and patents related to the project

- Participation in the organisation of public events, i.e. IV, V, VI, VII, VIII and IX Forum

CiViNET Spain and Portugal. The Association organises annual events since its foundation in order to disseminate good practices on urban mobility management. The events focus on current trends, and normally more than 100 stakeholders attend. Transyt-UPM has been actively involved in the organization of these events.


- Paper: A GPS Analysis for Urban Freight Distribution (2012). This paper characterizes and analyses urban freight distribution in order to generate new ways of understanding the phenomenon. Based on a case study of two different-sized Spanish cities using data from GPS, a vehicle observation survey and complementary driver's interviews, the authors propose a categorization of urban freight distribution.
- Paper: Comparative analysis of passenger transport sustainability in European Cities (2013). The article proposes indicators for measuring the sustainability of urban transport systems. The article, focused in 23 European cities, highlights the factors for achieving a sustainable mobility (e.g. density and size).
- Paper: A CO2-saving-based methodology to measure the impact of the SUMP in European Cities: Application to the city of Burgos (2014). Analysis of the SUMP developed in Burgos and its effectiveness. The results are analysed in terms of car traffic, bicycle use, emissions, public transport quality, etc.
- Soria-Lara, J. and Banister, D. (2018) Collaborative backcasting for transport policy scenario building. *Futures*, 95: 11-21
- Soria-Lara, J. and Banister, D. (2018) Evaluating the impacts of transport backcasting scenarios with multi-criteria analysis. *Transportation Research Part a: Policy & Planning*, 58: 113-126
- Soria-Lara, J. and Banister, D. (2017) Participatory visioning in transport backcasting studies: Methodological lessons from Andalusia (Spain). *Journal of Transport Geography*, 58: 113-126.
- Soria-Lara, J.A., Banister, D. (2017) Dynamic participation processes for policy packaging in transport backcasting studies. *Transport Policy*, 58: 19-30.

Significant Infrastructures and/or relevant information to the proposal

Software in the Transport Systems Laboratory: Licenses at disposal: classic modelling and transport planing packages such as EMME/2, Visum-Vissim, CUBE, etc., and support systems like Statgraphics or SPSS for statistical information processing.

Programmes for Transport Formation: GUTs Y PLUTO, designed at the Transport Institute of the University of Leeds. Collaboration in the development of a strategic transport and land use model called MARS (Metropolitan Activity Relocation Simulator) together with the Vienna University of Technology.

Geographic Information Systems: For the processing of information is used Geographic Information System ArcGis - ArcView and ArcInfo, MapInfo, wich serve as support for geo-referenced data bases and for the analysis of transport planning processes.

Partner	Centre for Research and Technology Hellas - Hellenic Institute of Transport			 CERTH CENTRE FOR RESEARCH & TECHNOLOGY HELLAS
Short Name	CERTH	Type	Research organisation	
Role	WP Leader / Technical coordinator	Country	Greece	
Website	http://hit.certh.gr			
Brief Description				
<p>The Centre for Research and Technology Hellas (CERTH), founded in 2000, is a leading Research Centre in Greece, listed among the top 20 EU institutions with the highest participation in competitive research grants. The Hellenic Institute of Transport (HIT) is one of CERTH's five (5) Institutes devoted to the promotion and undertaking of transport research in Greece, Europe and beyond. Its</p>				

main mission is to provide state-of-the-art research and create innovation in the field of transport, addressing issues related to transport policy, planning, management and operations of transport systems and infrastructure for all modes, and covering technology, social, economic and environmental aspects. CERTH/HIT has participated in and more than 200 research projects and studies since 2000, with several of them focusing on urban mobility.

Main tasks and responsibilities within the project

CERTH will be leading WP7 ‘Navigating Future Policy’ and will be acting as Technical Coordinator of the project, contributing through its experience from previous urban mobility projects covering both the urban freight and passenger domains and addressing the full spectrum of issues involved, from operations, to emerging technologies & business models, to policies. CERTH will also lead the tasks related to the development of the urban policy system dynamics model (T5.2) and evidence-based early policy alert & action tracking (T6.2). Furthermore, CERTH will play a major role in:

- Determining the impacts of emerging urban mobility environments
- Pilots’ setup, running & testing
- Project outcomes’ validation, transfer & exploitation

Principal Team Members involved in the project

Dr. Georgia Aifadopoulou (female) is a senior researcher at CERTH/HIT and the head of Sector B ‘Smart sustainable Mobility - Freight Transport – Networks’. Ms Aifadopoulou has served as Project Coordinator (for example in the NOVELOG project), and Technical and Evaluation Manager for several EU projects on urban logistics and urban mobility. Her expertise covers operations, the introduction of new technologies and policy issues.

Mr. Aristos Halatsis (male) is a Civil Engineer holding an MSc in Logistics and Transportation and an MBA. He is a Senior Project Manager with more than 20 years of professional experience in the area of logistics operations & urban freight transport. Mr Halatsis has served as an expert/evaluator to a number of EU Programmes, among which the TEN-T CEF (multimodal logistics platforms) Programme, the Marco Polo II Programme, the Information Society (ICT for Transport) Programme, the Smart Cities and Communities and Social Innovation Programme – Italian Ministry of Education, Universities and Research (MIUR), and as a consultant to the IFC/World Bank on logistics issues.

Dr. Josep Maria Salanova Grau (male) is a researcher at CERTH/HIT and holds a Civil engineering diploma and PhD in transport modelling from the Polytechnic University of Catalonia in Barcelona and a MSc in civil and transportation engineering from the Aristotle University of Thessaloniki, Greece. He has participated in various EU research projects in the field of transport, as well as in numerous national and EU transport studies. His main interests lie in data analytics and modelling as well in freight transport and city logistics.

Mr. Georgios Tsaples (male) graduated from the Aristoteleion University of Thessaloniki and holds a Master’s degree (MSc) in Engineering and Policy Analysis from Delft University of Technology, where he was introduced to simulation Exploratory Simulation and Data Modeling. He worked as a Research Fellow at Center for Cyber Intelligence and Information Security of the University of Rome “La Sapienza”, where he was part of the System Dynamics Group and was working on EU -funded projects dealing with the simulation of disruptive events in urban systems.

Main relevant networks and experience in National and European Projects

CERTH/HIT has participated in a large number of EU-funded projects under the 4th, 5th, 6th and 7th Framework Programmes (FP) and is currently involved in projects under the H2020 Programme, mainly as Project coordinator or Work Package Leader. Projects related to the present call, include the following:

CERTH/HIT has participated in a large number of EU-funded projects under the 4th, 5th, 6th and 7th Framework Programmes (FP) and is currently involved in projects under the H2020 Programme, mainly as Project coordinator or Work Package Leader. Projects related to the present call, include the following:


- **NOVELOG** - New Cooperative Business Models and Guidance for Sustainable City Logistics (H2020). NOVELOG aimed at guiding cities to the choice of optimal and applicable solutions for urban freight and service transport, and at facilitating stakeholder collaboration and transfer of best governance and business models. This was realised by: (1) delivering web-based tools for: (i) understanding the current & future urban freight transport environment, (ii) identifying appropriate measures and (iii) assessing the impacts of city logistics measures; (2) demonstrating, with reference to 12 city cases, a wide spectrum of city logistics measures & assessing their impacts; (3) developing commercially viable (enterprise level) and socio-economically beneficial (city/regional level) business models for the introduction & sustainable urban freight transport solutions.
- **STRAIGHTSOL** - Strategies and measures for smarter urban freight solutions (FP7) STRAIGHTSOL addressed the need to create a comprehensive approach to urban freight solutions linking urban logistics to their inter-urban interfaces. In doing so, the project: (1) developed a new impact assessment framework for measures applied to urban-interurban freight transport interfaces; (2) introduced a set of innovative field demonstrations showcasing improved urban-interurban freight operations in Europe; (3) applied the impact assessment framework to the live demonstrations and developed specific recommendations for future freight policies and measures.
- **AEOLIX** - Architecture for European Logistics Information Exchange (H2020). AEOLIX will establish a cloud-based collaborative logistics ecosystem for configuring and managing (logistics-related) information pipelines. This digital business ecosystem will create visibility across the supply chain, enabling more sustainable and efficient transport of goods across Europe.
- **MOTIVATE** (Interreg-Med). MOTIVATE is promoting citizens' engagement in urban sustainable mobility planning through the use of social media and crowdsourcing applications, by: (1) providing data for their daily trips; (2) assessing the current transport services; (3) assessing the usefulness of proposed/planned mobility interventions. Citizens' feedback is expected to influence the effectiveness of SUMP's development (enhancing the implementation of the 11 steps of SUMP cycle) and result in acceptable and long lasting sustainable mobility measures.
- **REFORM** - Integrated REgional Action Plan For Innovative, Sustainable and LOW CaRbon Mobility (Interreg Europe). REFORM supports the implementation and deployment of SUMPs as an instrument for shifting mobility towards low-carbon patterns. To achieve this, the project improves the regional strategies and operational programs that will support, fund and diffuse the concept of SUMP as the main planning tool for shifting mobility towards low carbon patterns.
- **Intelligent Urban Mobility Management System for Thessaloniki**. European Economic Area Grants. CERTH-HIT participated as project partner. 2009-2012. Creation of a large-scale and high-detailed model for the city of Thessaloniki. Provision of trip plan and info-mobility services in real-time.
- **Big Data Europe**. Empowering communities with Data Technologies". H2020. CERTH-HIT participated as project partner. 2015-2017. CERTH-HIT was the responsible of the Transport pilot with regards to the data and algorithms provision.

Publications, services and patents related to the project

- Tsaples, G., Papathanasiou, J., Ploskas, N. (2017): **Integrating System Dynamics with Exploratory MCDA for Robust Decision-Making**, In Linden, I., Liu, S., Colot, C. (Eds), Decision Support Systems VII. Data, Information and Knowledge Visualization in Decision

Support Systems, pp. 179-192

- Stathacopoulos, G. Ayfantopoulou, E. Gagatsi, E. Xenou, M. Vassilantonakis (2016) '**Understanding UFT: moving from the “city”s authority’ issue of today to an integrated “city”s stakeholders’ consideration**', 2nd VREF Conference on Urban Freight 2016: Plan for the future-sharing urban space, 17 October 2016, Gothenburg.
- Gonzalez-Feliu J., d-Arcier B. F., Salanova J. M., Herve T., Zubillaga F., Zeljko J., Thebaud J. B., Aifadopoulou G. (2013) "**The deployment of urban logistics solutions from research, development and pilot results. Lessons from the FREILOT Project**". Commercial/Goods Transport in Urban Areas, pp. 104-121. Difu-Impulse. ISBN: 978-3-88118-518-9.
- E. Mitsakis, I. Stamos, J.M. Salanova Grau, E. Chrysohoou, G. Aifadopoulou (2013) "**Urban Mobility Indicators for Thessaloniki**", Journal of Traffic and Logistics Engineering (JTLE) (ISSN: 2301-3680), Vol. 1 No. 2, June 2013. pp. 148 – 152.
- Rodrigues, Maria, Eleni Zampou, Vasilis Zeimpekis, Alexander Stathacopoulos, Tharsis Teoh, and Georgia Ayfantopoulou. "**Cooperative Models for Addressing Urban Freight Challenges: The NOVELOG and U-TURN Approaches.**" City Logistics 3: Towards Sustainable and Liveable Cities (2018): 215-234.

Partner	Vrije Universiteit Brussel			
Short Name	VUB	Type		University
Role	WP Leader	Country		Belgium
Website	http://mobi.vub.ac.be/home/			
Brief Description				
<p>The Mobility, Logistics and Automotive Technology Research Centre (MOBI) is a research centre at the Vrije Universiteit Brussel (VUB) and is a leader in socio-economic evaluations for urban mobility, sustainable logistics and electric & hybrid vehicles. The multidisciplinary team of 100 researchers addresses the challenges that mobility faces, by integrating engineering, economic, social and environmental sciences and policy issues. It delivers social, economic & environmental impact studies, decision-making support, modelling & simulation, engineering and standardization. Over the last 5 years, the centre has undertaken 21 European projects, 59 projects with the industry, and 61 projects funded by national organizations. Examples of key contributions include, a policy analysis tool involving stakeholders at early stage (MAMCA©), the NISTO evaluation toolkit for urban mobility projects, a specific external costs calculator for transport activities (ECC) and the contribution to the development of a participatory sensing platform. Over the years, the centre gained a strong expertise in urban mobility, city logistics, intermodal transport and travel behaviour analysis.</p>				
Main tasks and responsibilities within the project				
<p>VUB will be the leader of work packages 2 (Understanding transition in urban mobility) and 3 (Determining the policy impacts of emerging transport solutions). The main tasks of MOBI are the following:</p> <ul style="list-style-type: none"> • Establish the current urban mobility situation in each of the project cities, using available quantitative information • Identify the main drivers of urban mobility change • Define cause/effect relationships between drivers & expected impacts • Build city-specific plausible future scenarios for two time horizons • Determine the policy impacts of the emerging transport solutions • Assess the transferability and stakeholder support of different policy responses to new technologies using the MAMCA methodology. <p>They will also play a major role in the pilots' setup, running & testing, leading the task devoted to the formulation & prioritisation of alternative policy responses (T4.4) and will participate in the rest of WPs.</p>				
Principal Team Members involved in the project				
<p>Dr Imre Keseru (male) is a senior researcher and team leader for Urban Mobility at VUB MOBI since 2013. He leads a team of 5 researchers focusing on urban mobility. His main research themes include evaluation of urban mobility projects, stakeholder involvement in transport planning, travel behaviour analysis and travel-based multitasking. He has a PhD in transport geography and an MSc in Transport Planning. He has 10 years of experience in managing EU-funded international research projects including City-HUB (FP7), several regional and cross-border projects funded by the ERDF as well as national projects. He managed the development of an evaluation toolkit for small-scale mobility projects (NISTO), he currently manages the stakeholder consultation in the Mobility4EU H2020 project (Action plan for the future of mobility in Europe) using the MAMCA methodology and leads the LOOPER (Learning Loops in the Public Realm) JPI-Urban Europe project.</p> <p>Dr. Cathy Macharis (female) is professor at the Vrije Universiteit Brussel (VUB). She is co-director of the MOBI research centre since 2007. She has been involved in several regional, national and European research projects dealing with topics such as the location of intermodal terminals,</p>				

assessment of policy measures in the field of logistics and sustainable mobility, electric and hybrid vehicles, etc. She published several books and wrote more than 100 papers. She is the chairwoman of the Brussels Mobility Commission and Vice-chair of NECTAR (European scientific network on mobility, logistics and communication). She has been involved in the EU funded research projects CityLab (City Logistics in Living Laboratories), Mobility4EU (Action plan for the future of mobility in Europe), STRAIGHTSOL (Strategies and measures for smarter urban freight solutions), NISTO (New Integrated Smart Transport Options).

Main relevant networks and experience in National and European Projects


- **NISTO: New Integrated Smart Transport Options (2013-2015, EU Interreg):** The goal of the project was to develop an evaluation toolkit for smart urban mobility projects that combines the assessment of sustainability with the evaluation of stakeholder preferences and target monitoring. The framework was tested through the monitoring of five demonstration projects that focus on changing travel behaviour.
- **Mobility4EU: Action plan for the future of mobility in Europe (2016-2018, H2020):** The MOBILITY4EU project is developing an action plan for a radical and ambitious shift in the organization of sustainable mobility and transport in the EU. It takes into account all modes of transport as well as a multitude of societal drivers encompassing health, environment and climate protection, public safety and security, demographic change, urbanisation and globalisation, economic development, digitalisation and smart system integration. In order to obtain a widely supported and consensus-based action plan a Multi-Actor Multi-Criteria Analysis (MAMCA) methodology (designed by MOBI) is used to consult a broad stakeholder community representing the main societal actors.
- **STRAIGHTSOL: STRategies and measures for smarter urban freIGHT SOLutions (2012-2014, EU FP7):** The objectives of STRAIGHTSOL were to develop a new impact assessment framework for measures applied to urban-interurban freight transport interfaces; to support a set of innovative field demonstrations showcasing improved urban-interurban freight operations in Europe and to apply the impact assessment framework to the live demonstrations and develop specific recommendations for future freight policies and measures.
- **CITYLAB: City Logistics in Living Laboratories (2015-2018, EU H2020)**
The objective of CITYLAB was to develop knowledge and solutions that result in up-scaling and roll-out of strategies, measures and tools for emission-free city logistics in urban centres by 2030. The core of CITYLAB is a set of living laboratories, where cities work as contexts for innovation and implementation processes for public and private measures contributing to increased efficiency and sustainable urban logistics. The outputs from the living labs include best practice guidance on innovative approaches and how to replicate them.
- **LOOPER (Learning Loops in the Public Realm) (2017-2020, JPI URBAN Europe)**
The aim of LOOPER is to develop new ways of decision-making that bring together citizens, stakeholders and policy-makers by building a participatory co-creation methodology and platform that demonstrate 'learning loops'. LOOPER's methodology addresses the whole co-creation process. Citizens and stakeholders debate on topical issues, then frame the problem and collect data. The LOOPER platform visualizes the data, and enables the co-design of solutions which are evaluated and the best are put into practice and monitored. The platform is being tested in three living labs in Brussels, Verona and Manchester. VUB is responsible for the Living lab in Brussels on urban mobility.

Publications, services and patents related to the project

- **NISTO Evaluation Framework and Toolkit (www.nistotoolkit.eu) (Interreg IVB, 2013-2015):** The NISTO toolkit provides easy-to-use tools for practitioners to appraise small-scale mobility projects in terms of their sustainability and stakeholder support.
- **MAMCA methodology and software (www.mamca.be):** The Multi-Actor Multi-Criteria

Analysis (MAMCA©) is a decision-making model and software developed by Prof. Dr. Cathy Macharis to enable the simultaneous evaluation of alternative policy measures, scenarios, technologies, etc. while explicitly including different stakeholders' opinions at an early stage of the decision-making process.

- BULCKAEN, J., I. KESERU and C. MACHARIS, 2016, “**Sustainability versus stakeholder preferences: Searching for synergies in urban and regional mobility measures**”, Research in Transportation Economics, Vol. 55, June 2016, pp. 40-49. DOI:10.1016/j.retrec.2016.04.009 (0.707: SNIP 2015)
- MACHARIS, C. and L. MILAN, 2015, “**Transition through dialogue: a stakeholder based decision process for cities: The case of city distribution**”, in Habitat International, Special issue: Exploratory Spatial Analysis of Urban Habitats, Editors: Vaz, E., Kourtit, K., Painho, M. and P. Nijkamp, Volume 45, pp. 82-91, DOI: 10.1016/j.habitatint.2014.06.026 (1.746: JCR 2014).
- SZALKAI, G., JANCISOVICS, A., KESERU, I., MACHARIS, C., NEMETH, B. and V. OSZTER, 2018, “**Geographies of transportation in the twenty-first century**”, in: New Geographies of the Globalized World (ed. Marcin Wojciech Solarz), Routledge Studies in Human Geography, Routledge, Vol. 75, pp. 93-114, chapter 5.

Partner	Promotion of Operational Links with Integrated Services, Association Internationale			
Short Name	POLIS	Type	Association	
Role	WP Leader	Country	Belgium	
Website	www.polisnetwork.eu			

Brief Description

POLIS (www.polisnetwork.eu) has been a European network for dialogue and cooperation on innovative urban transport issues between cities and regions since 1989. It currently represents around 70 cities, regions and transport authorities from all over Europe. POLIS' objective is to support European cities and regions to improve the quality of life of their citizens through innovative measures for sustainable urban transport. The network facilitates access to European initiatives and research programmes for its members, looking into solutions for urban and regional mobility, in the field of health and environment, traffic management and intelligent transport systems, road safety, and social and economic aspects of transport. POLIS events, publications and in-house expertise create opportunities for members to exchange experience and forge partnerships among themselves, with the industry and the research community, and to develop innovative solutions.

Main tasks and responsibilities within the project

POLIS will lead the WP5 ‘formulating a city-led innovative policy response’. As a network of cities and regions, Polis will manage in this role the transfer of 1st layer cities to validation cities, and to assess feasibility of innovations in these new contexts. Polis will coordinate the interaction with the validation cities as well as the structuring of a toolbox. Polis has experience in these activities through projects such as TIDE, NODES, CITYLAB and SUNRISE. POLIS will synthesise local findings and develop EU level recommendations, an activity Polis will be able to carry out through its close links with EU institutions and urban mobility policy decision making processes. Polis will lead the Project outcomes’ validation and transfer work package (WP8). Given the experience in multi-stakeholder innovation settings on various urban mobility topics, the networks achievements in policy and measure transfer in projects such as TIDE and CIVITAS SATELLITE, as well as productive international outreach activities (NOVELOG, CITYLAB, SOLUTIONS, etc.). POLIS will be able to manage the establishment of an Open Innovation Community, the management of the transferability activities and their application in European Chinese and US cities as envisaged in this WP. This WP also includes the establishment of communication tools and processes, in which POLIS

has an extensive experience.

Principal Team Members involved in the project

Mr. Ivo Cré (male) is Director at POLIS (March 2015 – current) with focus on project and policy activities; Current activities include a.o. coordination of CIVITAS SATELLITE, Coordination of Polis policy activities and of the thematic pillar on access, including the partnership with European Parking Association and the Polis parking working group. He is involved in SUNRISE, REFORM, ERTRAC Urban Mobility Working Group / SETRIS. Before joining POLIS, Ivo was Policy Officer for mobility at EUROCITIES. Prior to that, he worked as assistant to a Member of the European Parliament, advisor and private secretary to the Belgian Minister of Environment, and as project leader at Langzaam Verkeer

Mr. Giacomo Lozzi (male) is project manager at POLIS since May 2015. He is the coordinator of the Polis Urban Freight Working Group. He is in charge of transferability and dissemination tasks, and organisation of interactive workshops and project events for several EU projects (VitalNodes, BuyZET, ASSURED, Clean Mobile Energy). He is the moderator of the CIVITAS Urban Freight and Logistics Thematic Group. Giacomo holds a PhD from the University of Roma Tre, with a research entitled “A cooperative model to gently improve freight goods distribution in European cities. The case of Rome”, and a Master’s degree in European Economy and Business Law from the Tor Vergata University in Rome. He has previously worked as policy advisor for Éupolis (the research institute of Lombardy Region in Milan) and as trainee at the European Commission (DG MOVE).


Dr. Florinda Boschetti (female) is Senior Project Manager and holds a Ph.D. in sustainable transport planning from University of Brescia, Italy (2009) and a MSc. in Urban, Regional and Environmental Planning from Polytechnic University of Milan (2001). Florinda joined Polis in February 2012 and is coordinating policy work and projects in environment and health in transport. She also leads the two Polis Working Groups on Bikeshare, and Health and Transport. Florinda is currently assisting local authorities in European co-funded projects on active mobility, electric vehicles and smart grids, sustainable urban mobility planning, and automated driving. Before joining Polis, Florinda has worked as an urban planner in the public sector in Italy, in Milan and Ancona, between 2004 and 2008, and as project manager at European Cyclists’ Federation in Brussels from 2009-2012.

Main relevant networks and experience in National and European Projects

- **TIDE**: the project looked at deployment of innovation in urban mobility, developing transfer and assessment tools for policy responses in the fields of public transport, electromobility, active travel, access regulations and ITS. TIDE predecessor projects NICHES and NICHES+ consecutively improved the transfer process and implementation guidelines for practitioners to adapt measures in other cities to local policy contexts.
- **CIVITAS SATELLITE**: the project coordinates and supports the ongoing CIVITAS 2020 projects in the field of evaluation, promotion of their results, exchange of knowledge and further expansion of the CIVITAS community.
- **Park4SUMP**: the project will lead to achieve sustainable transport in urban areas by strategically integrating innovative parking management solutions into SUMP policies.
- **NOVELOG** enabled knowledge and understanding of urban freight distribution and service trips in order for cities to implement effective and sustainable policies and measures and facilitate stakeholder collaboration for sustainable city logistics. Available at: <http://novelog.eu/>
- **The CITYLAB** objective developed knowledge and solutions, which resulted in up-scaling and roll-out of strategies, measures and tools for emission-free city logistics in urban centres by 2030. Available at: <http://www.citylab-project.eu/>

Publications, services and patents related to the project

POLIS has published relevant guidelines for the deployment of innovative transport solutions, including tracking for planning, C-ITS for local authorities, urban freight and clean vehicles (e.g. TRACE Toolkit. Guidelines and recommendations on tracking walking & cycling for mobility planning and behaviour change; CIMEC Roadmap - introduction to the topic of city C-ITS and to provide an overview perspective on how the city C-ITS market is expected to develop in Europe; FREVUE guidelines for public authorities, electricity network operators, fleet operators, vehicle suppliers for the future uptake of electric vans and trucks; TIDE – Transport Innovation Deployment for Europe - Guidelines for Implementers).

Partner	Wuppertal Institute Für Klima, Umwelt, Energie GMBH			
Short Name	WI	Type	Research organisation	
Role	WP Leader	Country	Germany	
Website	www.wupperinst.org			
Brief Description				
<p>Sustainable development requires an integrated approach to policy and science because many of the issues it raises cannot be addressed within a single department or using the tools of individual scientific disciplines. This is where the Wuppertal Institute's research programme begins - by taking an interdisciplinary approach and working towards systems understanding. Applied sustainability research is the Wuppertal Institute's stated mission. The Wuppertal Institute collaborates with a multitude of universities and institutes around the world. A scientific International Advisory Board supports the Institute in defining fundamental research strategies as well as ensuring the quality and independence of its research. The Wuppertal Institute has longstanding experience with a multitude of national, European and international projects on sustainable transport. It develops transport and mobility scenarios, evaluates urban mobility pilots and prepares concepts to creating bankable projects. It currently carries out analyses and capacity building activities on sustainable mobility around the world as part of the SOLUTIONS network and the EU-funded FUTURE RADAR project. The Wuppertal Institute has a long record of experience with ex-ante and the ex-post evaluation of transport, energy and climate policies – as well as the design and evaluation of carbon reduction and energy efficiency strategies, programmes and services carried out by companies, public policy and other actors, in projects such as FLOW and EMPOWER, SUMPs-UP and SUITS.</p>				
Main tasks and responsibilities within the project				
<p>The Wuppertal Institute will lead work Package 6 “Building cities’ policy making capacity”, building on years of experience in the areas of policy and institutional analysis and capacity building in the context of European projects such as CIVITAS SUMP-UP and SUITS and international projects such as SOLUTIONS and Urban Pathways. The Wuppertal Institute works closely with UN-Habitat on the development of an indicator framework and database for the assessment of progress towards the Sustainable Development Goals and the New Urban Agenda and has analysed mobility data in cooperation with partner cities in many projects such as FLOW and EMPOWER. WI works currently with well over 30 cities in Europe, Asia, Africa and Latin America on policy packaging and coalition building for sustainable urban development and mobility and will bring in this expertise in the exchange with the SPROUT partner cities (including USA and China), which will also enhance the city-to-city cooperation. WI is an active member of the MobiliseYourCity partnership, the Sustainable Mobility by the World Bank for all initiative and the Decarbonising Transport project with the International Transport Forum, which data and support the evidence based policy advice and capacity building. WI will also lead the following tasks:</p> <ul style="list-style-type: none"> • Policy impacts of city-specific scenarios (T3.3) • Urban Agenda policy briefs (T7.2) 				

- Project outcomes validation strategy (T8.2)
- Transfer of project results to European, US and Chinese cities (T8.5)

Principal Team Members involved in the project

Mr. Oliver Lah (m) is the Head of the Mobility and International Cooperation Research Unit at the Wuppertal Institute and focuses on governance, climate change mitigation policy analysis and sustainable urban development. Oliver is active in a number of projects focusing on sustainable development and climate action in Europe, Asia, Africa and Latin America, leads the Urban Pathways project and coordinates the activities of the Urban Electric Mobility Initiative (UEMI). Oliver worked with international organisations, such as the OECD/ITF, UN-Habitat, UNEP and GIZ on urban mobility issues. He was a Lead Author for the Fifth IPCC Assessment Report and was a member of the Habitat III Policy Unit on Urban Services and Technology. He teaches at the universities of Berlin and Rotterdam and coordinates the non-profit Climate Action Implementation Facility, which works on capacity building and provides project implementation support. Prior to that Oliver worked for the New Zealand government, the University of Munich and the Minister of State to the German Federal Chancellor. He holds a Bachelor of Arts with Honours in Political Science, and a Master of Environmental Studies from Victoria University of Wellington.

Mrs. Shritu Shreshta (f) is a research fellow at the Wuppertal Institute, where she works in European and international research projects on building energy and resource efficiency policy development, sustainable cities and transport, socio-economic assessment and climate action. She obtained a PhD in engineering/architecture (Dr. Ing.) from the Technical University of Berlin, Germany (PhD topic ‘Comparison of Energy Efficient and Green Buildings: Technological and Policy Aspects with case studies from Europe, the USA, India and Nepal’), and a master's degree (M.Sc.) from the Institute for Technology and Resource Management in the Tropics and Subtropics (ITT), Cologne University of Applied Sciences, Germany with a focus on sustainable building.

Dr. Frederic Rudolph (m) works as a project coordinator at the Wuppertal Institute. He obtained a diploma in Urban Planning (University of Dortmund, Germany) and a PhD in Civil Engineering (University of Wuppertal). His research focus is on decarbonisation pathways for transport and mobility and the German “Verkehrswende”. He works with transportation forecasting procedures and with project appraisal methods such as cost-benefit analysis. He has more than 10 years of working experience, including scenario development and impact assessment for sustainable passenger transport on the local level. He has lead the H2020-FLOW Work Package, in which a methodology was developed to assess the impact of walking and cycling measures on congestion; and the IEE-EVIDENCE Work Package, which gathered information on costs and benefits of urban mobility policies and measures. Frederic currently leads a SUITS WP, which supports cities to achieve relevant policy targets and enable them to successfully plan and implement innovative sustainable mobility measures, technologies and policies. He is also member of the SUMP 2.0 Editorial Board.

Main relevant networks and experience in National and European Projects


- **SUMPs-UP:** The SUMPs-Up project will accelerate the uptake of Sustainable Urban Mobility Plans (SUMPs), ensuring that SUMP is the primary mobility planning concept in Europe. WI is responsible for the work package developing an evaluation framework and evaluating SUMPs and SUMP measures’ impacts. WI closely works together with the city networks ICLEI, POLIS and EUROCITIES.
- **SOLUTIONS:** The EU-funded SOLUTIONS project has spearheaded exchanges between cities in Europe, Asia, Africa, and Latin America to ensure urban sustainable mobility solutions benefit from only the very best technical knowledge and experience, and can be utilised on a truly global scale. From the SOLUTIONS project, which the Wuppertal Institute coordinated, the global “Urban Electric Mobility Initiative” (uemi.net) has developed.
- **FLOW:** Current mainstream transport demand and traffic flow modelling do not fully and

accurately reflect the role cycling and walking play in congestion (reduction). FLOW created a new level of understanding among the community of transport professionals and policy makers in Europe towards understanding the congestion reduction benefits of walking and cycling as modes of transport. WI worked with BASt, PTV, FEHRL, TRL, POLIS Network, Walk21 and ECF on this understanding and has experience with the ways in which alternatives to cars are being analysed.

- **SUITS:** SUITS takes a sociotechnical approach to capacity building in Local Authorities and transport stakeholder organisations with special emphasis on the transfer of learning to smaller sized cities, making them more effective and resilient to change in the judicious implementation of sustainable transport measures. The Wuppertal Institute offers a series of moderated e-learning courses and webinars on planning and implementing sustainable mobility measures, technologies and policies. It also holds multiplier workshops to boost the impact of the project, to multiply its effects and to reach out to a wider audience.
- **EVIDENCE:** The EVIDENCE project examined the notion that sustainable transport initiatives do not compete with "traditional" transport infrastructure in terms of delivering economic benefit. EVIDENCE set out to demonstrate that sustainable mobility interventions can offer good value, and do not compare poorly in comparison to infrastructure schemes and to evidence how investments in sustainable mobility can foster economic activity. To help achieve these objectives, the WI collected, sifted and reviewed source material for measures typically found in a SUMP.

Publications, services and patents related to the project

- Lah, O. (2017). Continuity and Change: Dealing with Political Volatility to Advance Climate Change Mitigation Strategies—Examples from the Transport Sector. *Sustainability*, 9(6). <https://doi.org/10.3390/su9060959>
- Lah, O. (2017). Decarbonising the transportation sector: policy options, synergies and institutions to deliver on a low-carbon stabilisation pathway, *WIREs Energy and Environment*, Volume 6 Issue 5 <http://wires.wiley.com/WileyCDA/WileyJournal/wisId-WENE.html>.
- Lah, Oliver 2014. “The Barriers to Vehicle Fuel Efficiency and Policies to overcome them.” *European Transport Research Review*.
- Rudolph, Frederic; Mátrai, Tamas (2018): Congestion from a Multimodal Perspective. In: *Periodica Polytechnica Transportation Engineering*. doi: <https://doi.org/10.3311/PPtr.12048>.
- Rudolph, Frederic (2016): Cleaner Vehicles. In: *World Transport Policy and Practice 22.1/2: The Evidence Project: Origins, Review Findings and Prospects for Enhanced Urban Transport Appraisal and Evaluation in the Future*, S. 22-26.

Partner	Ayuntamiento de Valencia			 AJUNTAMENT DE VALÈNCIA
Short Name	VALENCIA	Type	Public Authority	
Role	Pilot Partner	Country	Spain	
Website	https://www.valencia.es/			

Brief Description

The Ayuntamiento de Valencia (Valencia City Hall) is the main institution in charge of the governance the city and the municipality of Valencia. The Valencia City Hall and Mobility Department are responsible for the appliance of mobility measures in order to improve transit performance and quality of life of citizenship, as result there is a review of SUMP of Valencia and new measures are being analysed. The city of Valencia represents the 16% of the total population of the Valencian region being its capital city, and is, demographically and economically speaking, the third biggest city in Spain. The Ayuntamiento de Valencia has the vision of making Valencia a fully sustainable city with the involvement of all citizens in the decision making process. To achieve this

vision, several strategies have been launched in the last years, which not only are aligned with European objectives, but also improving them by means of targeting more ambitious results in terms of urban and social innovation what has allowed Valencia to become a European frontrunner for Smart Cities and sustainable development.

Main tasks and responsibilities within the project

The main tasks of the Ayuntamiento de Valencia (Valencia City Hall) and its Mobility Department is to define and apply mobility measures in order to improve transit performance and quality of life of the citizenship. For this reason, the key role of the City Hall in SPROUT will be related to the development of transport and mobility policies to be implemented in Valencia city thanks the results of the pilot tested within the project. Valencia mobility department will provide its experience in daily operation related to transit, but also a modern approach to mobility with a kind approach to the city promoting use of bicycle and ecologic alternatives to move.

Principal Team Members involved in the project

Mr. Jesús Sánchez (male) is a València City Council official since 1995, as head of the Traffic Management Center, currently Head of the Circulation Regulation Section, of the Sustainable Mobility Service. He has a degree in Industrial Electronics and Automation Engineering and Industrial Technical Engineering, both degrees issued by the Universitat Politècnica de València.

Mr. Antonio Sanz (male) is a Technical Engineer of Public Works (specialty in Transportation and Urban Services), and has a Bachelor of Environmental Sciences (intensifications in Civil Technology and Industrial Technology) and Master in Railways and Rail Transport, by the Polytechnic University of Valencia. He graduated in Civil Engineering from the Catholic University of San Antonio de Murcia. Between 2001 and 2016 he developed his professional work as a Project Technician in an engineering company, and as a Technician and Head of Civil and Railway Works in two construction companies in Valencia. Since 2016, he is a Technical Engineer of Planning and Road Planning in the Sustainable Mobility Service of the Valencia City Council

Main relevant networks and experience in National and European Projects

- **MatchUp - MAXimizing the UPscaling and replication potential of high level urban transformation strategies (Horizon 2020, October 2017 - September 2022)** MATCHUP is a EU-funded Smart City project involving three lighthouse cities and four follower cities. MATCHUP cities will join forces to reshape their social, economic and environmental models and to promote social inclusion, liveability and prosperity for their citizens. MATCHUP will design and implement a palette of innovative solutions in the energy, mobility and ICT sectors that will serve as a model of urban transformation for other cities in Europe and beyond
- **GROW GREEN – Green Cities for Climate and Water Resilience, Sustainable Economic Growth, Healthy Citizens and Environments (Horizon 2020, June 2017 - May 2022)** GrowGreen aims to create climate and water resilient, healthy and liveable cities by investing in nature-based solutions (NBS). Making nature part of the urban living environment improves quality of life for all citizens and will help business to prosper. High quality green spaces and waterways provide innovative and inspiring solutions to major urban challenges, such as flooding, heat stress, drought, poor air quality and unemployment and will help biodiversity to flourish. By embedding NBS in long term city planning, development and management, accessible green and blue spaces are a permanent feature of all urban areas around the world, creating harmony between people, economy and the environment, for the benefit of all.

Significant Infrastructures and/or relevant information to the proposal

The Ayuntamiento de Valencia has the appropriate infrastructures, both technological and physical to carry out the work to be developed within the project. Furthermore, being the main governmental entity in the city of Valencia will be able to promote and implement any ideas that have been successful within the project.

Partner	Fundación de la Comunidad Valenciana para la Investigación, Promoción y Estudios Comerciales de Valenciaport			
Short Name	VPF	Type	Research organisation	
Role	Pilot Partner	Country	Spain	
Website	www.fundacion.valenciaport.com			

Brief Description

The Fundación de la Comunidad Valenciana para la Investigación, Promoción y Estudios Comerciales de Valenciaport (Fundación Valenciaport hereafter) is a private non-profit research centre that was created in 2004 through an agreement between the Port Authority of Valencia (APV), the University of Valencia and the Polytechnics University of Valencia, the Valencian Export Institute (IVEX), the Regional Government and the Valencian city hall, the Bancaja Foundation, the most representative associations and companies of the Valencian logistics-ports community and various institutions of the Valencian region, all of which are involved in logistics and transport (particularly maritime transport and logistics). The Fundación Valenciaport manifests an R&D&i centre of excellence that not only undertakes its own academic research but also serves as a tool at the service of all agents involved in the transport and logistics chain and particularly within the maritime and port domains, these being key competitive elements buttressing the internationalisation process of Spanish companies. On top of the activities linked to research and training the Fundación Valenciaport also carries out international cooperation projects focused on the optimal and integrated development of transport, logistics and ports located in third countries. The Projects department encompasses all the research activities of the Fundación Valenciaport and the main lines of work are: Port Planning and Development, Transport Economics, Energy Efficiency, Security and Safety, Information Technologies and Logistics and Intermodality. The Logistics and Intermodality department expands the knowledge of the Fundación Valenciaport beyond the port sector per se, providing the foundation thereby with an integral vision of logistics chains and infrastructure. This integrated conception of the logistics system is necessary to face both current and future challenges in a globalised world in which logistics has evolved into a major element of competitiveness, were ports have been proven to be key elements of the supply chain.

Main tasks and responsibilities within the project

FVP will coordinate of the overall pilot activities in the City of Valencia (WP4), being the main contributor to the design of the advanced concept of urban intermodal node and being in in charge of assessing the pilot results and impacts. FVP will also contribute to the development of the pilot scenarios in WP3, the development of an urban policy system dynamics model in WP5 and the development of an evidence-based early policy alert & action tracking in WP6. In addition, FVP will use its extensive network to disseminate the project outcomes.

Principal Team Members involved in the project

Mrs. Carolina Navarro (female) began her professional career in 2005 at the Department of Engineering Projects at the Polytechnic University of Valencia (UPV) through a research fellowship, working with Theory and Process Project team in research and scientific documentation. In 2006 she

joined Improven as a consultant, developing various projects for the comprehensive reorganization of companies in the Valencia Region, participating in the operations division. Since 2.007 she works as a Project Manager of Research, Development and Innovation in Valenciaport Foundation. She has been involved in national and international consultancy projects on quality management, logistics and inter-modality projects financed by the European Commission through research and cooperation programmes. She is Industrial Engineering by the Polytechnic University of Valencia with a specialisation in Industrial Management and Organisation and specialised in Ports Management and Intermodal Transport by the Comillas University (ICADE).

Salvador Furió (male) began his career in 1998 at Tabacalera S.A. Distribution Division in Barcelona, designing and implementing logistics solutions for different banking companies. In 1999 he joined Logista S.A. multinational firm as a Technician in the Transport Department of the Levante Area. At this time, he began to work in Quality and Environmental consultancy projects. After this, he became the Manager of the Retail and Parcel delivery service of the Logista Levante Area until November 2001, when he moved to Madrid Logista Central Services as a Project Manager, managing a team to improve processes, reduce costs and design, organize and run new businesses. In September 2004 he joined Valenciaport Foundation as the Director of Logistics and Intermodality in the R&D department. From then, he has participated in and directed many research, consultancy and cooperation projects at national, European and international level. These projects always related with container logistics, maritime, railway and intermodal transport, trade facilitation, the planning and design of logistics platforms and with energy efficiency and environmental management. Furthermore, during this period he has regularly taught and collaborated with different master programs of the Universities of Valencia and Castellon and the Polytechnic Universities of Valencia and Barcelona, and he has participated in national and international congresses in transport and logistics. Salvador Furió is an Industrial Engineer from the Polytechnic University of Valencia, Master of Science in Ports Management and Intermodal Transport by the Comillas University (ICADE), and holds a Diploma of Advanced Studies from the PhD program in Advanced Models for Operations Management and Supply Chain Management at the Polytechnic University of Valencia.

Mrs. Amparo Mestre (female) began her career as a research assistant at the Observatory on International Economic Environment in the University of Valencia, developing projects in the fields of macroeconomics and statistical analysis. From 2009 to 2012 she worked as a Project Manager at the Institute of International Economics (Universities of Valencia, Alicante and Castellón) participating in projects relating to economic analysis, statistics, international trade, transport and logistics. Since January 2012, she is a R&D&i Project Manager at Valenciaport Foundation. She holds a degree in Economics from the University of Valencia (Spain), Master in International Economy and Trade at the Institute of International Economics and specialised in Ports Management and Intermodal Transport by the Comillas University (ICADE).

Main relevant networks and experience in National and European Projects

- **SUMPORT – Sustainable Urban Mobility in MED Port Cities:** SUMPORT’s main objective is the improvement of sustainable mobility in MED port cities, by fostering the uptake of Sustainable Urban Mobility Plans in the MED area, with a specific focus on integrating city- and port-related traffic flows in the sustainable public transport planning. On point of action will be that MED port cities will enhance their low-carbon planning capacities through the participation in dedicated training seminars for the elaboration of SUMP. A second point of action is that it will also be able to test-bed the notions acquired both by drafting their own SUMP, where not already available, or updating the existing ones, as well as by simulating and implementing low-carbon mobility pilot actions and small-scale investments, resulting in practical, tangible and end-user-oriented results.
- **SUCCESS – Sustainable Urban Consolidation Centres for Construction:** The main objective of SUCCESS is to reduce the negative impacts of freight distribution in city urban areas and to reduce its costs, by improving knowledge and understanding of freight

distribution and service trips for the construction sector and by demonstrating impacts in terms of transport and environmental efficiency. In order to do so, the project focuses on to what extent and how the Supply Chain Management and Construction Consolidation Centers (CCCs) concepts could bring about tested and replicable solutions (adequate collaborative frameworks and, as result, sustainable business models) to address problems in the construction supply chains, focusing on distribution networks, construction sites and reverse logistics. SUCCESS addresses the feasibility of optimising and integrating the supply chain (for example introducing supplier's cooperation schemes, contractors' integration arrangements) and Construction Consolidation Centers in urban and sub-urban areas, also developing best practice guidance on innovative approaches integrating knowledge, competences of research institutes, public authorities and business operators.


- **SMILE – Smart Green Innovative Urban Logistics for Energy Efficient Mediterranean Cities:** The SMILE project focuses on the development and implementation of innovative strategies, plans and measures on energy efficient mobility solutions for smart MED cities utilizing available technologies and building upon previous experiences as well as on-going initiatives regarding technical, cost and other related issues that must be taken into account. SMILE aims to improve the energy efficiency of urban freight distribution at Mediterranean cities through the promotion and implementation of innovative policies and solutions with the support of all available technologies.
- **CO-EFFICIENT – Collaborative Framework for Energy Efficient SME Systems:** The general objective of the project is to induce behavioural and technologic changes in manufacturing and logistics sector SMEs of the project regions and in the MED area, generating positive externalities for the regional economies and environment, in line with sustainable development principles.
- **STIMULO – Multimodal Intelligent Logistics Transport System:** The objective of the STIMULO project is to develop intelligent traffic management systems by predicting in real-time the status of the various components of the transport system (infrastructure, vehicles, goods, users, etc...). The principal elements of the infrastructure under proposal include the simulation model, data mining from heterogeneous sensors in real-time, generating traffic indicators and using these indicators jointly with collective intelligence techniques to provide services linked to the transport system that improve performance and efficiency.

Publications, services and patents related to the project

- Furió, Salvador; Andrés, Carlos; Adenso-Díaz, Belarmino; Lozano, Sebastián: Optimization Of Empty Container Movements Using Street-Turn: Application To Valencia Hinterland. Computers and Industrial Engineering, 66, 2013, Pages 909-9017.
- Palacio, Antonio; Adenso-Díaz, Belarmino; Lozano, Sebastián; Furió, Salvador: Bicriteria Optimization Model For Locating Maritime Container Depots: Application To Port Of Valencia. Networks and Spatial Economics, 2013, Pages 1-18 (ISSN 1572-9427).
- Feo, María; García, Leandro; Sáez, Lorena; Furió, Salvador: The Importance Of The Inland Leg Of Containerised Maritime Shipments: An Analysis Of Modal Choice Determinants In Spain. Transportation Research Part E: Logistics and Transportation Review, Volume 47, Issue 4, Pages 446-460, July 2011. (I.S.S.N.: 1366-5545).

Significant Infrastructures and/or relevant information to the proposal

The Fundación Valenciaport has the appropriate infrastructures, both technological and physical to carry out the work to be developed within the project. Furthermore, the proximate distance and relation with the Port of Valencia and the city, facilitates the tasks such as the coordination of the Valencian Pilot.

Partner	Ferrocarrils de la Generalitat Valenciana			
Short Name	FGV	Type	Public company	
Role	Pilot Partner	Country	Spain	
Website	http://www.fgv.es/			
Brief Description				
<p>Ferrocarrils de la Generalitat Valenciana (FGV) is a public company dependent on the Valencia Regional Government that manages and administers the metric gauge railway lines that run throughout the Valencia Region. FGV’s mission is to offer citizens of the Comunitat Valenciana sustainable public railway transport service through efficient management and maximum quality, safety, transparency and social profitability. The content of this declaration must be present in and permeate all types of communication performed in the company, whether internal or external. FGV was founded in 1986 after state-run Ferrocarriles Españoles de Vía Estrecha (FEVE) finished the process of transferring transport services it had been operating in this territory to the Valencian community. FGV begins offering commercial service in Valencia and Alicante on the 1st of January 1987. As rail public transport company, FGV is part of the following Associations:</p> <ul style="list-style-type: none"> • UITP Union International Transport Public • Alamy Latin-American Association of Metros and Undergrounds • FEFS Forum of Railway Companies for Sustainability • ATUC Association Management Companies Urban Collective Transport • FEFS Innovation Club of Valencia • CCICV Transport Provider Register 				
Main tasks and responsibilities within the project				
<p>The pilot of the city of Valencia, “Intermodal Urban passenger/freight node for collective public & private transport” will be tested in one of the stations directly managed by FGV. For this reason, FGV will be directly involved in the implementation of the pilot in the city of Valencia in WP3 and the tasks devoted to the development of city-specific scenarios in WP3.</p>				
Principal Team Members involved in the project				
<p>Mr. Marcos Roselló Colomar (male) started his career in 2000 FREYSSINET FRANCE: civil construction. After, in 2001, he begins to work in COMSA, as site and production manager and railway construction, where he stays until 2005. In 2005 he starts working in FGV as an Infrastructure construction unit Manager, ascending to different positions until 2017 when he becomes an Engineering and projects Unit manager. His main responsibilities are: to manage new projects, to develop engineering and managing the R&D in the areas of new lines, structures, installations, security, architecture. He has a Master degree in Civil Engineering (ETSICCP, UPV 2001), MBA (PDD IESE 2007), Master degree in Railway design and Operation (2006) and BIM Manager UEV (in course).</p> <p>Mrs. Amparo Correcher Bartual (female) started her career in 2000, as a Site Manager in Torrecámara y Cía de Obras, S.A. In 2008, she begins to work for FGV as head of the area of infrastructure within the unit of Projects and Studies. Then she moves to the Fixed Installations Maintenance Unit, as Manager of Maintenance of Road and Works and Maintenance. After from May 2016 to October 2017, she becomes the Equipment Maintenance manager in the same aforementioned unit. Finally, in October 2017, she becomes the Head of the Accessibility Unit (Customer Management and Accessibility), which is her current position. She has a Degree as a Technical Engineer of Public Works Specialty of Civil Constructions from the Universitat Politècnica de Valencia, a master degree on Railway and Transport (Universitat Politècnica de Valencia) and a degree in Basic management of Entities (Universidad de</p>				

Valencia).
Main relevant networks and experience in National and European Projects
<p>As of 2015, by order of the regional government, FGV has been the railway infrastructure manager of the whole metro and tram network, including management, exploitation, maintenance and new investments. FGV is now managing the whole renovation of existing lines and network extension, with more than 200 Million of Euros of budget planned annually. One of the most important projects in course are the renovation of the 9 lines of TRAM in Alicante, with more than 120 million Euros in 3 years, including new 100 km. of tracks and switches, new structures, consolidation and reinforcement of infrastructures, renovation and modernisation of stations and adaptation to mobility-access requirements, including new railway safety systems according to standards of the 2016 railway safety law. FGV is now writing the projects for the construction of the new 10 line of Metro Valencia at the centre of the city, with more than 6 km length, 3 subway stations and 4 open air stations. This Project in being made entirely with BIM methodology, becoming the first at the Valencian Region in its class. As an Infrastructure manager, FGV is now working in the future mobility plan, integrating the metro and tram network with the other transportation modes at the cities of Valencia and Alicante, including the demand analysis, mobility modes and the planning on new connections.</p>
Publications, services and patents related to the project
<p>FGV uses lots of specific software for managing the operation: CTC Siemens for the train operation management and safety, SCADA software for manage the installation and maintenance, specific software for managing the power-supply, Specific software to manage the customer information and help, communication, the whole of them to manage the operation in the wide sense. For managing the inner part of the Enterprise concerning de OPEX and CAPEX budgets, Gmao, Staff, billing, cost control, they use SAP R3 software and the appropriate modules for the Enterprise management economics, human resources, purchases and maintenance.</p>
Significant Infrastructures and/or relevant information to the proposal
<p>The rail infrastructures managed by FGV in Valencia encompasses the metro and tram that service the city of Valencia, its metropolitan area and areas of influence. It has 133 stations distributed throughout 146 kilometres.</p>

Partner	Ningbo Supply Chain Innovation Institute China			
Short Name	NSCIIC	Type	Research organisation	
Role	Pilot Partner	Country	China	
Website	http://www.nsciic.edu.cn/en/index.html			
Brief Description				
<p>NSCIIC is a full-standing member of the MIT Global Supply Chain and Logistics Excellence (SCALE) Network. It was jointly established by Ningbo government and MIT in 2016 that focuses on the area of logistics and supply chain management. NSCIIC is committed to establishing and developing both degree and non-degree education programs that provide cutting-edge graduate and executive education aimed at fostering talents for international supply chain management. NSCIIC has recruited a group of top faculty and researchers around the world to conduct research that facilitates and improves the management and innovation of supply chains in the Ningbo region and across the globe. NSCIIC is also committed to creating a platform of academic and industrial alliance that promotes productive interaction and mutually beneficial collaboration between academic</p>				

institutions and corporations.

Main tasks and responsibilities within the project

The main role of NSCIIC within the project will be the coordination of Ningbo pilot in WP4 to facilitate the set-up of the pilot. NSCIIC will also play a role in the following tasks:

- Analysing the policy impacts of current and emerging transport solutions in Ningbo in WP3.
- Proposing innovative policy response and navigating future policies that improve Ningbo urban transportation efficiency.
- Developing EU, US, China international cooperation agenda on urban mobility policy.
- Contributing to the EU, US, China international cooperation agenda on urban mobility policy in T7.4.

Principal Team Members involved in the project

Mr. Shaoxuan Liu (male), has worked as the director of NSCIIC since March 2016. He takes charge of the strategic responsibility for the Institute. He performs duties which include conducting research including publication, securing funding, teaching, administration, extensive liaison with internal and external contacts, and team leadership. He serves as a reviewer for premier academic journals such as Manufacturing & Service Operations Management, Production and Operations Management, and Decision Analysis. He also serves as a reviewer for the National Natural Science Foundation of China (NSFC) and the Research Grants Council (RGC) of Hong Kong. Over the years, he has provided consulting and training services to a large number of enterprises such as Dell, Apple, Amazon, SAIC, Cisco, Honeywell, Esquel and Nike.

Mrs. Huan Jin (female) is an assistant professor in NSCIIC since Nov 2016. She obtained her PhD degree in Management Sciences from University of Iowa in 2016. Her responsibilities include produce high quality papers, secure funding, teaching core courses, and administration of a master program in terms of academic director. She has involved in many projects related to urban logistics.

Mr. Bo Li (male) receives his PhD degree in Operations and Supply Chain Management from Texas A&M University and is currently an assistant professor in NSCIIC started from Sep 2016. His duties include perform high quality research in Supply Chain management, funding application, teaching, and serving as a course director for a MBA program of the institute. His work has published on top journals including Production & Operations Management and European Journal of Operational Research.

Main relevant networks and experience in National and European Projects

- Shaoxuan Liu, Principal Investigator, National Science Foundation of China (NSFC) “Supply Chain Coordination under Unreliable Supply”, Duration: 2012-2014. The project looked into the various factors that affect supply reliability and examined how supply reliability is affected by behaviour of independent decision makers. Both the methodology and insights generated in the project will be useful for SPROUT as supply risk also occurs in urban logistics system.

Publications, services and patents related to the project

- Han G., M. Dong & Shaoxuan Liu (2014) “Yield and Allocation Management in A Continuous Make-to-stock System with Demand Upgrade Substitution”. International Journal of Production Economics. 2014 156:124-131.
- Liu, Shaoxuan, So, K. & Zhang F. (2010) “Effects of Supply Reliability in a Retail Setting with Joint Marketing and Inventory Decisions,” Manufacturing & Service Operations Management. 2010 Vol. 12, NO.1, 19-32.

- Bo Li and S. Kumar, 2018, “Should You Kill or Embrace Your Competitor: Cloud-Service and Competition Strategy,” *Production & Operations Management*, 27(5): 822-838.
- Bo Li and A. Arreola-Risa, 2017. “Financial Risk, Inventory Decision and Process Improvement for A Firm with Random Capacity,” *European Journal of Operational Research*, 260(1): 183-194.
- Huan Jin, Rick So, Shaoxuan Liu, “Dynamic Price Incentives in Bicycle Sharing Systems with Dockless Pickup and Dropoff,” working paper, 2018.

Significant Infrastructures and/or relevant information to the proposal

- Ningbo municipal key laboratory for urban transport research
- Complete infrastructure and facility including hardware equipment and software tools for road traffic monitoring, big data collection and analysis, transport planning and traffic simulation
- Ningbo Municipal Intelligent Transportation Collaboration and Innovation Centre, networked with relevant local governmental authorities for efficient and real-time traffic data transfer.

Partner	Ningbo Municipal Commission of Commerce			
Short Name	NBCC	Type	Public authority	
Role	Pilot Partner. International Partner	Country	China	
Website	http://www.nbfet.gov.cn/			

Brief Description

Ningbo Municipal Commission of Commerce is a municipal government department responsible for Ningbo's internal trade, city logistics and foreign economic cooperation. Its responsibilities include: implementing national and provincial laws, regulations, rules and guidelines concerning domestic and foreign trade, foreign investment and economic cooperation; making relevant local regulations and rules and regulatory documents; studying the trend of domestic and international economic development, and proposing development strategies of economy opening and exploring domestic & foreign markets; preparing and implementing plans for domestic and foreign trade and international economic cooperation and development, and being responsible for the related statistics, monitoring, and operational analysis in various business sectors.

Main tasks and responsibilities within the project

- NBCC will be mainly involved in WP4 providing support to setting up, testing and validation activities in Ningbo pilot. NBCC will also contribute to:
- The development of a urban policy system dynamics model for Ningbo (WP5)
 - Building Ningbo’s policy making capacity (WP6)
 - Developing an EU, US, China international cooperation agenda on urban mobility policy
 - Contributing to the EU, US, China international cooperation agenda on urban mobility policy in T7.4.

Principal Team Members involved in the project

Mr. Yan Zhang, (male) born in January 1964, is Director General of NBCC since APR 2017. Mr. Zhang is an expert in transport and logistics policy research, and logistics infrastructure planning. After graduating from the Party School of Zhejiang Province, he served once as Director of the Policy and Regulations Department of Ningbo Municipal Transportation Commission, Deputy General Manager of Ningbo Shipping (Group) Corporation, Deputy Director General of Ningbo Municipal Transportation Commission, and Director of Ningbo Municipal Modern Logistics Planning Institute, Deputy Secretary-General of Ningbo Municipal Government.

Mr. Maoyin Yang, (male) born in November 1969, is Deputy Director General of NBCC. Mr. Yang is an expert in transport policy related fields. He graduated from Ningbo Normal University in 1993, and served once as Deputy Director of the Ninghai County Political Research Office, and Deputy Director of Ningbo Municipal Trading Bureau.


Mr. Shusen Wang, (male) born in March 1973, is Director of Market System Construction Department of NBCC since March 2015. Mr Wang has more than ten years working experience in trade and logistics management. After graduating from the Dalian Political Institute with a bachelor's degree in economic management in 2005, he served once as Director of Market Department of Ningbo Municipal Trade Bureau.

Main relevant networks and experience in National and European Projects

- Planning for Commercial Outlets in Downtown of Ningbo (Joined project in co-operation with Ningbo Municipal Planning Bureau).
- Development of the public information service platform for cool chain logistics (co-funded by Ningbo Municipal Development and Reform Commission).
- Feasibility Study for Urban Public Distribution Project in Ningbo. Research on the development of cool chain logistics industry.

Publications, services and patents related to the project

- Special Plan for Commercial Network in Ningbo City Centre (2005-2020), Release by Ningbo Municipal Government.
- Notice on the Implementation of the Special Funds for Development of Central Service Industry for cool chain logistics in Ningbo, released jointly by NBCC and Municipal Bureau of Finance (Ningbo Commercial Market [2017] No. 2).
- Notice on Special Funds and Project Management Measures for Ningbo Central Service Development (Supply Chain System Construction), jointly released by NBCC and Ningbo Municipal Bureau of Finance (Ningbo Business Circulation Letter [2018] No. 19).
- Implementation Plan for the Construction of Ningbo Community Commercial Neighbourhood Centre (Ningbo Business Market [2017] No. 161).

Partner	Ningbo University of Technology			
Short Name	NBUT	Type	University	
Role	Pilot Partner	Country	China	
Website	http://www.nbut.edu.cn/			

Brief Description

Created in 1983, Ningbo University of Technology is a full-time regular university with the national "Excellent Engineer Training Programme" as selected by the Chinese national Ministry of Education. The Institute of Transportation of NBUT plays a leading role in transport research and development in Ningbo, particularly in the fields of intelligent transport systems and services, urban transport planning and design, and transportation policies. The Institute has established excellent strategic co-operation relationships with all transport relevant local authorities. In last ten years, the Institute carried out more than 100 transport planning, research and implementation projects in Ningbo with a total public funding of more than 40 million yuan. The institute is also leading the Ningbo Municipal Intelligent Transport Collaboration and Innovation Centre involving local governmental authorities, industry leaders, and national and international transport research institutes and universities,

including Hellenic Institute of Transport, Weimar University and PTV. Currently, the transport research team of the Institute involves fifteen full-time experienced researchers, including two professors and three associate professors.

Main tasks and responsibilities within the project

NBUT will be mainly involved in the setting up, testing and validation activities in Ningbo's Pilot in WP4. They will also contribute to the following project tasks:

- Determining the policy impacts of emerging transport solutions in Ningbo (WP3)
- Defining evidence-based early policy alert & action tracking for Ningbo (WP6) and
- Contributing to the EU, US, China international cooperation agenda on urban mobility policy in T7.4.

Principal Team Members involved in the project

Mr. Prof. Renfa YANG (male) joined NBUT in Sept. 2009. He was Dean of Transport and Logistics Institute (2009-2012) and Dean of Transport Institute (2012-2015). His main research fields include intelligent transport logistics, urban transport management, urban public transport planning and management. Examples of the transport research projects he carried out include 1) 'Study on Transport Logistics System under Global Information Space', international cooperation research project supported by the Chinese Ministry of Science and Technology (2010 -2012); 2) 'Creation Mechanism and Bottleneck Identification of Urban Traffic Demand', supported by the National 973 Program (2006-2011); 3) 'Research of Characteristics of Non-Motorised Vehicles in Mixed Traffic Flows' supported by National Natural Science Foundation of China (2014-2016).


Mr. Prof.Dr.-Ing. Xiwen Zhang (male) joined NBUT in July 2012 as Distinguished Professor in Transport. Prof. Zhang has thirty years transport research experience, particularly in the fields of intelligent transport systems and services, public transport management and information systems and services, and traffic simulation. Prof. Zhang has carried out more than 30 transport research and implementation projects in Europe and China. Most relevant ones for the proposed research project are 'Model Application of Intelligent Public Transport Systems and Sustainable Mobility Policies in Ningbo', supported by the EU ASIA URBS Programme (2006-2007) and 'Urban Road Traffic Congestion Estimation System Development and Implementation' supported by Ningbo Municipal Government (2014-2015).

Mr. Prof.Dr. Shuichao Zhang (male) joined NBUT in Sept 2012 is Deputy Dean of Transport Institute. His main research fields include transport planning methodology and public transport management. The recent representative projects include: 'Research of Characteristics of Non-Motorised Vehicles in Mixed Traffic Flows' supported by National Natural Science Foundation of China (2014-2016) and 'Research of Characteristics of Renting Public Bicycles and Planning Methodology' supported by Zhejiang Provincial Natural Science Foundation (since 2017).

Main relevant networks and experience in National and European Projects

- 'Study on Transport Logistics System under Global Information Space', international cooperation research project supported by the Chinese Ministry of Science and Technology, 2010 -2012
- 'Creation Mechanism and Bottleneck Identification of Urban Traffic Demand', supported by the National 973 Program; 2006-2011
- 'Study on the Traffic Characteristics of Mixed Non-motorised Vehicles', 2014-2016, supported by National Natural Science Foundation of China.
- 'Model Application of Intelligent Public Transport Systems and Sustainable Mobility Policies in Ningbo', supported by the EU ASIA URBS Programme (2006-2007)
- 'Research of Characteristics of Renting Public Bicycles and Planning Methodology'

supported by Zhejiang Provincial Natural Science Foundation (since 2017)
Publications, services and patents related to the project
<ul style="list-style-type: none"> • Modelling the Distribution Characteristics of Urban Public Bicycle Rental Duration, Discrete Dynamics in Nature and Society, 2016 (Publication) • Simulation model of speed-density characteristics for mixed bicycle flow-Comparison between cellular automata model and gas dynamics model, Physica A: Statistical Mechanics and Its Applications, 2013392(20): 5110-5118 (Publication) • Combined safety warning road marking lines near bus station for Non-motorised vehicles, 2015 (Patent, CN201410069014.9) • Real-time Traffic Congestion Information and Index Services for City of Ningbo, 2015 (Service)
Significant Infrastructures and/or relevant information to the proposal
<ul style="list-style-type: none"> • Ningbo municipal key laboratory for urban transport research • Complete infrastructure and facility including hardware equipment and software tools for road traffic monitoring, big data collection and analysis, transport planning and traffic simulation • Ningbo Municipal Intelligent Transportation Collaboration and Innovation Centre, networked with relevant local governmental authorities for efficient and real-time traffic data transfer.

Partner	BKK Centre for Budapest Transport			 BUDAPESTI KÖZLEKEDÉSI KÖZPONT
Short Name	BKK	Type	Public authority	
Role	Pilot Partner	Country	Hungary	
Website	www.bkk.hu			

Brief Description

BKK Centre for Budapest Transport is the transport authority of the City of Budapest. BKK was established in 2010 with the aim to be the integrated mobility manager of the Hungarian capital. The organization is responsible for the management of all transport modes and holds more, than 500 employees. As an integrated mobility manager of Budapest, BKK is responsible for: development and implementation of Balázs Mór Plan (BMT), which is Budapest’s first SUMP-based transport development strategy; organizing public transport (Budapest & metropolitan area); determining routes, scheduling, traffic layouts; passenger information service; public bike sharing; making strategic decisions in connection to city-logistics and parking; authorizing taxis (control and qualification of taxi hire services); strategic road network management; development of the extended infrastructure in Budapest.

Main tasks and responsibilities within the project

BKK will participate in SPROUT mainly in the tasks related to Budapest pilot through the following activities:

- Analysis of new sharing economy solutions in Budapest (new dock less bike-, scooter sharing and car-sharing systems).
- Identifying possible intervention fields involving stakeholders (including Budapest Közút – public road operator).
- Data-based analysis and modelling (using the integrated macroscopic transport model for Budapest and its agglomeration).

- Improving regulation framework (currently the business models are not cooperative, land use is unregulated and there is no overall regulation for sharing economy).
- Developing new regulation background, improving institutional cooperation, business models, and decision making processes with special focus on land use planning and demand management, and performing efficiency-building initiatives.
- Assessment of the overall outcomes, results and impacts on strategic level.

Principal Team Members involved in the project

Mr. László Sándor Kerényi (male) is a Hungarian M.Sc. Civil Engineer, pre-degree MBA, qualified technical supervisor of roads and bridges, road safety auditor, civil administration executive. Since 2008, he is managing the mobility of the City of Budapest in different positions, currently he works as Head of Strategy at BKK Centre for Budapest Transport, the transport authority of the Hungarian capital. His tasks and responsibilities include strategic planning, management of the unified transport model for Budapest, preparation of infrastructure projects, participation in international research and innovation projects and international cooperation. He was also involved in the preparatory works of "the BKK Concept", the background of the reorganization of the institutional framework of Budapest transport. He contributed to the creation of the Balazs Mór Plan, which is the first SUMP based transport development strategy for Budapest and the conduction of the related comprehensive public consultation. Formerly he gained 6 years of experience in project management, working on preparation, implementation and supervision of national infrastructure projects. With over 100 conference presentations and 20 publications, he is also active in education and scientific life.

Mr. Máté Lénárt (male) holds an MSc in Transportation Engineering (2010). Lénárt is an expert in city-logistics and urban freight transport, also involved in transport modelling, with a strong focus on operational and strategic decision support. He joined BKK in January 2012 as a freight transport officer responsible for the development of the unified city-logistics concept for Budapest, and recently responsible for international research and development projects. During his studies, Lénárt actively took part in micro and macroscopic transport modelling research projects at the Department of Transport Technology and Economics at Budapest University of Technology and Economics, furthermore gained programming skills during his professional activity.

Main relevant networks and experience in National and European Projects

BKK has solid experience in project management on European R&D projects. Since the establishment in 2010, BKK has successfully participated in several projects (Catch-MR, TIDE, NODES, STARS, CH4LLENGE, FLOW, EMPOWER), and currently works on seven other projects (e.g. MaaS4EU, SUMPs-UP, SUNRISE). BKK also provides external expertise for several EU projects (SOLUTIONS, ELLIPTIC, TRACE, CREATE), and works on several new projects. Our experience in the EU projects will be a good baseline for the management of our tasks in SPROUT.


- **SMART-MR** (INTERREG Europe): During the SMART-MR project, BKK represents Budapest as a metropolitan region and works together with 7 other European metropolitan regions to enhance the quality of implementation of its regional transport policy. BKK will develop and test an innovative methodology and tools for public consultation and institutional cooperation processes for the planning, implementation and monitoring and evaluation processes of IKOP (Integrated Transport Development Operative Program). Available at: <https://www.interregeurope.eu/smart-mr/>
- **MaaS4EU** (Horizon 2020): The main goal of MaaS4EU is to provide quantifiable evidence, frameworks and tools, to remove the barriers and enable a cooperative and interconnected EU single transport market for the MaaS concept, by addressing challenges at 4 levels, (1) business, (2) end-users, (3) technology and (4) policy. BKK will pilot MaaS solutions in Budapest in cooperation with Budapest University of Technology and Economics. One pilot

case will be implemented in Budapest. The experience of creation of a living lab and working together with transport service providers will be utilized during the implementation of Budapest pilot action of RESTRAIN project. Available at: <http://www.maas4eu.eu/>


- **SUNRISE** (Horizon 2020): The SUNRISE mission is to develop, implement, assess and facilitate co-learning about new, collaborative ways to address common urban mobility challenges at the urban district level through “neighbourhood mobility labs” and thus to lay the foundation for a Sustainable Neighbourhood Mobility Planning concept. Main task of the SUNRISE project in Zugló’s Törökör neighbourhood in Budapest is to widen and deepen the existing process of participative planning and establish a sustainable cooperation of the local stakeholders for co-assessing and co-planning mobility-related issues. Available at: <http://www.sunrise-communities.eu/>

Publications, services and patents related to the project

- **BMT Balázs Mór Plan and Sustainable Urban Mobility Planning** (2015). In 2015, BKK has issued BMT Balázs Mór Plan, the first transport development plan of Budapest based on SUMP principles, which document defines the main directions of development and strategic goals until 2030. The English version of the plan will be published at the following website: http://www.sump-challenges.eu/sites/www.sump-challenges.eu/files/bmt2016_eng_v3.pdf
- **FUTÁR – Integrated real time journey planner and traffic management system** (2014). FUTÁR integrated real time journey planner app for web, smartphones and tablets offers both the “door to door” trip planner service and also the accessible route options, gives detailed information on schedules of each stop and also is able to show the real-time position of the public transportation vehicles in operation. All trams, buses and trolleybuses are equipped with a satellite geographical positioning system providing real-time information for traffic control and passenger information as well as for service and performance management purposes. The system also provides input data for better service planning resulting in better efficiency thereby achieving cost-saving. Available at: <http://futar.bkk.hu>
- **Introduction of the Automated Fare Collection (AFC) system**. The new system will bring numerous tangible changes for passengers: paper-based tickets and passes are expected to be replaced by electronic fare payments from 2018 onwards, and new elements are planned for the ticketing system: most notably time-based tickets, daily capping and pay-as-you-go payments using contactless bank cards. By installing automatic access gates on the metro and some suburban railway stations instead of relying on human ticket inspectors, the revenue protection system will be more efficient by reducing fare evasion as well.
- **Development of the MOL Bubi public bike-sharing scheme** (2014). The MOL Bubi public bike-sharing scheme is a new mode of public transport in Budapest, which consists of 124 docking stations and 1486 bicycles. The system is suitable for users to get automated access to Bubi-bikes in all seasons around the clock and to return the bikes to any station. MOL Bubi features innovative solutions such as solar cell-operated docking stations and terminals with large-screen touchpads. The transportation of bicycles between docking stations are performed in an environment-friendly way mostly by special electric bikes which are also used by mechanics to reach the locations to carry out on-the-spot repairs.
- **Development and operation of the Integrated Macroscopic Transport Model for Budapest and its agglomeration** (2015).

Partner	Budapest Közút Zártkörűen Működő Részvénytársaság			
Short Name	BPKozut	Type	Public company	
Role	Pilot Partner	Country	Hungary	
Website	www.budapestkozut.hu			
Brief Description				
<p>BPKozut is owned by Municipal Government of Budapest. BPKozut is responsible for the operation and maintenance of the roads, bridges, works of art and traffic facilities owned by the City. BPKozut treats approximately 5000 km. of road network, identifies changing needs of traffic and puts the modifications into effect. BPKozut is responsible for the continuous and safe operation of the following infrastructures:</p> <ul style="list-style-type: none"> - 133.000 traffic plates - 457.000 m2 pavement signs - 1.071 traffic light junction - 320 road and pedestrian bridges and overpasses <p>BPKozut repairs the identified potholes, implements temporary and final traffic engineering plans, produces traffic signs.</p>				
Main tasks and responsibilities within the project				
<p>BPKozut will be a partner in the Hungarian pilot and will contribute with tasks such as:</p> <ul style="list-style-type: none"> • Analysing and modelling the issues about the capacity of public roads, bike roads (BKozut's core business is maintaining the road infrastructures in Budapest). • Developing new regulation background, with special focus on land use planning and demand management, and performing efficiency-building initiatives (BKozut is responsible for the management/control of the traffic in Budapest). • Analysis of new sharing economy solutions in Budapest. 				
Principal Team Members involved in the project				
<p>Mr. Dénes Kovács (male) is working for the BPKozut (and its legal predecessors) since 1997. His department is responsible for the daily operation of the Capital's traffic management system. He is also the vice president of the ITS Hungary Association. He graduated (in 1981) at Transport and Telecommunications Technical College, Győr as road construction and maintenance engineer. He is also a Responsible Technical Manager for traffic construction/development projects</p> <p>Mr. Tamas Tóth-Báló (male). Before BPKozut Mr. Tóth-Báló worked for the Ministry for National Economics. His main responsibility was to develop the electromobility strategy of Hungary. He graduated (in 2011) at Corvinus University of Budapest as economist, specialized to entrepreneurship. He had a scholarship at EIT in the "Pioneer into Practice" program. During this 2 months he was working on several projects linked to electromobility and sharing mobility (press Toyota Motor Poland, and IFKA Public Benefit Non-Profit Ltd. for the Development of Industry).</p>				
Main relevant networks and experience in National and European Projects				
<ul style="list-style-type: none"> • Crocodile (TEN-T Action 2013-EU-50003-P) <ul style="list-style-type: none"> ○ developing and expanding traffic data collecting, processing and monitoring system. ○ expansion of the communication network of traffic monitoring system. ○ Installation of traffic data collection and monitoring devices. • Easyway Project phase II. <ul style="list-style-type: none"> ○ implementation of adaptive traffic management system. ○ installation of variable message sign for traffic signs/information. • Crocodile 2 (CEF Action 2014-EU-TM-0563-W) <ul style="list-style-type: none"> ○ Implementing infrastructure and processes to ensure the accessibility, exchange, 				

<p>reuse and update of road and traffic data for the provision of real-time traffic information services. All implementations will be done in accordance to the priority action b Delegated Regulation.</p> <ul style="list-style-type: none"> ○ Implementing infrastructure (e.g. DATEX II nodes) and processes (e.g. data exchange) in accordance to the needs identified in Commission Delegated Regulation (EU) No 886/2013 as well as Commission Delegated Regulation (EU) No 885/2013. ○ Fostering cross-border, cross-regional co-ordination of strategies and services (e.g. Traffic Management Plans). ○ Providing information services to truck drivers on parking space availability along the Hungarian sections of CROCODILE 2 corridors.
<p>Publications, services and patents related to the project</p> <ul style="list-style-type: none"> • Sharing mobility solution’s main problem is that the potential user comes from for ex. the agglomeration with own car and needs to stop at the edge downtown and change travel mode. BPKozut operates 22 P+R facility all around Budapest (more than 4000 parking spaces) which can be used/integrated to the sharing mobility solutions. If there will be a need for ex. to designate a new transportation route, BPKozut could undertake the full implementation.
<p>Significant Infrastructures and/or relevant information to the proposal</p> <ul style="list-style-type: none"> • Centralized traffic management system • Own 3D mobile LIDAR based urban mapping solution

Partner	Municipality of Padua			
Short Name	CDPA	Type	Public Body	
Role	Pilot Partner	Country	Italy	
Website	http://www.padovanet.it/			

<p>Brief Description</p> <p>Padua is located in Veneto, 20km west of Venice lagoon, with a well-defined historic settlement, and a Roman “consular” development alongside the main street infrastructures, connecting to neighbouring municipalities. 17 of these were recently grouped in the Functional Urban Area “Metropolitan Community of Padova” as per the Intermunicipal Spatial Plan. Population: 210.401 inhabitants (430.000 in Metropolitan Community). Around 15% of resident population is not native. As a general rule, the majority lives in welldeveloped urban areas in and around the city centre. Economy: Padova is among the most industrialised cities of the country, accounted with 20% of Veneto added value and 1.80% of total produced in Italy. Tertiary sector is the most developed one (63,4%), Industry sector (34,9%) and the agricultural sector (1,8%). Climate change adaptation and sustainable land use are among major issues. Policies under development/revision: SUMP, SECAP, Urban Green Regulation, Building Reg.</p>
<p>Main tasks and responsibilities within the project</p> <p>CDPA will be a partner of the Italian pilot in WP4. CDPA is the public body in charge of the mobility planning & policy. They will be mainly in charge of: (i) Test-drive of the autonomous electric pods in selected areas; (ii) proceedings for authorizing the test of the service (iii) promoting the test of the service to the users; (iv) running ad hoc services on</p>

selected routes; (v) mainstreaming the pilot results into the new regulatory framework

Principal Team Members involved in the project

Alessandra Rossi (f) is a civil engineer of the Mobility Office of the Municipality of Padova. She is the administrative responsible for the activity of Public transport services and parking. She is also Corporate Mobility Manager. She has worked as project partner in several EU, national and regional projects

Daniele Agostini (m) is the Head of the Mobility Office (Urban planning, cadastral services and mobility Dept). of the Municipality of Padova. He is an expert in mobility planning and has a degree in Urbanistics, working since 1996 in the areas of sustainable transport and urban development. He has worked as project partner in several EU, national and regional projects

Luca Coin (m) is a transport Engineer of the Mobility Office of the Municipality of Padova. He is an expert in multi-modal transport systems and has a degree in Engineering (University of Padova) working since 1997 in transport systems planning. He has worked as project partner in several EU, national and regional projects.

Main relevant networks and experience in National and European Projects


- The «Bicapolitana» project will double the cyclepaths currently in use, reaching 300km by 2030.
- The city is realising an innovative cycle-pedestrian path connecting the railway station to Padova industrial district, using draining materials and environment friendly construction methods, as well as data collection via sensors system.
- My city (POR FESR 2014-2020): Urban Mobility - Digital infrastructuring (installing sensors for acquiring big data and real-time remote monitoring of operations)
- H2020 Reveal: ReVeAL (2019-...) consortium will combine conceptual work and case study research with hands-on UVAR implementation in six pilot cities (Padua in one of this) and systematic stakeholder interaction and professional communication activities.

Publications, services and patents related to the project

- Night bus on demand via mobile app
- Mobile app about public transport

Significant Infrastructures and/or relevant information to the proposal

The municipality has made available with a council resolution an area (Kioene Arena) destined entirely for the SPROUT pilot test.

Partner	Venice International University			
Short Name	VIU	Type	University	
Role	Pilot Partner	Country	Italy	
Website	http://www.univiu.org			
Brief Description				
<p>Venice International University (VIU) is a consortium of 17 universities from all over the world located on an autonomous campus on the island of San Servolo, Venice, Italy. VIU was founded on December 15, 1995 and is a legally recognized association operating under Italian private law. Its status as a non-profit association carries full patrimonial autonomy. The Italian Ministry for</p>				

University Education and Scientific and Technological Research formally recognized the Venice International University consortium as an international centre of higher education and research by Ministerial Decree on 23 October 1997. The mission of VIU is to foster cooperation among VIU member institutions while facilitating the exchange of knowledge and ideas, by developing, promoting and organising joint academic, research and training/capacity-building programmes. VIU thereby contributes to, and is an integral part of the internationalisation strategies of the member organisations. Since its foundation in 1995, VIU has increasingly worked to promote the research triangle of stakeholders – industry, academia and government – through research projects, advanced training programs targeting professionals and policy-makers, internships for university students and by inviting experts in chosen fields to recount their experience to VIU students. VIU Programs carry out research and training activities addressing the new global challenges such as sustainable development, climate change and energy, global logistics and supply chain management, food and water security, circular economy, urban growth, welfare, ageing populations, creativity and innovation, cultural heritage.

Main tasks and responsibilities within the project

VIU will be mainly involved in the development of the pilot activities related to Venice in WP4. It will also actively participate in WP3 and WP5, assessing the impacts of emerging urban mobility environments in Venice and formulating a city-led innovative policy response. VIU has gained a significant experience in EU projects related to urban mobility and logistics, in particular within the NOVELOG project, where a preliminary assessment of disruptive business models and policies - related to the novel concept of cargo hitching - was carried out. By working in close cooperation with the Metropolitan Area of Venice, the overall impacts on policy-making and regulatory framework will be thoroughly determined. SUMP-related measures will then be proposed and implemented. As a research centre, VIU has developed relevant experience in the understanding of urban mobility and logistics, particularly when considering key trends, factors and current drivers. Moreover, thanks to the development of an EU network of cities and research centres testing and implementing cargo hitching solutions and policies, VIU has the opportunity to assess the transferring of proposed policies to other urban contexts as well as the implications for future initiatives.

Principal Team Members involved in the project

Mrs. Lucia Di Gioia (female), Architect, Executive Director of the TeDIS Program of the VIU, she has been working at VIU since 1999. She coordinates the training and research activities of the Program and has a senior expertise as Project Manager, specifically within European co-funded projects such as Horizon 2020, Europe Aid, Interreg, Fp7. She is responsible for the administrative and reporting activities of the projects, during their lifecycle. She was tutor of the European projects training center from 2010 to 2013; consultant at Formez (Special Agency of the Italian Government for the innovation in Public Administration); Project Coordinator of the CLIMA Project, financed under the Asia Link Program and led by Ca' Foscari University of Venice.

Mr. Marco Mazzarino (male) is Professor of Logistics and Supply Chain Management and of Transport Economics and Policy at IUAV University of Venice. He has been with VIU since 2004 as founder and scientific coordinator of the research unit “Sustainable Logistics” of the TeDIS Program, whose researches focus on transport, logistics and supply chain management in both local contexts and the global economy. He has been actively participating in many EU projects, including - among the most recent and/or current ones: PERIPHERAL ACCESS, NOVELOG, LOCATIONS, SUPAIR, SMARTLOGI.

Mr. Paolo Menegazzo (male), Transport Engineer at Port Authority of Venice in the Strategic Planning and Development Direction. He has been working at VIU since 2006 as member of the “Sustainable logistics” research group team. He was involved in several projects benefiting from European Union and European Commission funds, with particular reference to maritime transport,

regional and urban logistics. He works at the Port Authority of Venice mainly on topics related to transport market analysis, transport market trends and externalities' assessment. He has been part of the VIU research team involved in the NOVELOG project where a case study of cargo hitching solutions in the Venice Lagoon was carried out.

Mr. Lucio Rubini (male), Architect, transport and land use planning expert; research fellow at IUAV University of Venice; program tutor of the Master URise in Urban Regeneration and Social Innovation. He has been consultant of public institutions such as: Consortium for the Coordination of Research Activities of the Venice Lagoon System; Municipality of Venice, Mobility and Transport Department; Veneto Region European project ALPCHECK2, financed under the European Territorial Cooperation, Alpine Space 2007-2013; Municipality of Treviso, Territorial Planning Plan (PAT) analysis and design of the transport and mobility system. Lucio Rubini is part of the VIU research team of the Sustainable Logistics Unit of the TeDIS Program and he has been working at VIU since 2010 in several European projects. Main projects: Peripheral Access, Interreg Central Europe; Novelog, Horizon 2020; ACROSSEE, Interreg South-East Europe; ADRIA-A., Interreg, Italy Slovenia.

Main relevant networks and experience in National and European Projects


- **SUPAIR: Sustainable Ports in the Adriatic-Ionian Region** (2018/2020): It is a project financed by the Adriatic-Ionian Programme INTERREG V-B Transnational 2014-2020. Ports are core nodes for multimodal transport in the Adriatic-Ionian basin and strategic key drivers for economic growth: reducing negative environmental impacts is essential for a sustainable development of the area. The project goal is the reduction of emissions from shipping and on-shore port operations, enhancing port authorities' capacity to plan and implement low-carbon and multimodal transport and mobility solutions.
- **Peripheral Access: Transnational cooperation and partnership for better public transport in peripheral and cross-border regions** (2017/2020): It is a project financed by Central Europe Program. Peripheral Access improves mobility in specifically peripheral areas such as rural, remotely located or border regions. This is crucial, as 93% of the EU territories are peripheral areas. The project analyse this situation in detail and implement innovative pilot actions.
- **Novelog: New Cooperative Business Model and Guidance for Sustainable City Logistics** (2015/2018): It is a project financed by H2020 Programme. The scope of the project is to enable the knowledge and understanding of freight distribution and service trips by providing guidance for implementing effective and sustainable policies and measures. This guidance will support the choice of applicable solutions for urban freight and transport services, and will facilitate stakeholder's collaboration and the development, field-testing and transfer of the best governance and business models.
- **Sus Freight: Sustainable Freight Transport** (2013/2014): It was a project co-financed by the Alpine Space Program. SusFreight aimed at addressing the environmental problems related to transports through the natural bottleneck represented by the regions composing the Alpine Space geographical area.
- **TRIM: Transport Infrastructure Monitoring** (2008/2011): The project was co-financed by the Interreg IV Italy Austria, European territorial cooperation 2007/2013. The main objective was to guarantee the accessibility and reach the green goals through:
 - Improve traffic informatics infrastructure for the long term street management planning
 - Harmonize the structure of the graphic street signs contents to better manage the traffic and the management of the street security.
 - Improve the transfer of information and the clearness of regulation for the better usage of graphics and infrastructure.

Publications, services and patents related to the project

- Mazzarino M., Rubini L., (2018), “**Policies and innovative solutions of freight urban transport: some results from a case study in the Venice Lagoon**” in Urban and Regional Studies, (under review).
- Rubini L., (2015), Le aree della stazione di Mestre: dal miglioramento funzionale a opportunità di rigenerazione urbana (**The railway station areas of Mestre: from the functional improvement to the urban renewal**) in TRIA-Territorio della Ricerca su Insediamenti e Ambiente. Rivista internazionale di cultura urbanistica, n.14 (1/2015)
- Mazzarino M., (2013), “Scenari mediterranei: il ruolo del trasporto e della logistica nell'ambito della teoria della New Economic Geography - un contributo originale” (**Mediterranean scenarios: the role of transport and logistics within the New Economic Geography theory**), in “L'Europa e il Mediterraneo. Profili giuridici ed economici”, curators: Campailla S. and Mosconi F., edited by Il Mulino, Bologna.
- Mazzarino M., (March 2012), “**Strategic scenarios of global logistics: what lies ahead for Europe?**”, in “European Transport Research Review”, vol.4, issue 1, pages 1-18.
- Mazzarino M., (2011), “**Tomorrow’s supply networks: future challenges, global perspectives and some opportunities for Europe**”, proceedings of the P&G Supply Network Forum 2011 – Tomorrow’s Supply Networks: Agility and Full Asset Utilization, Bruxelles, March 29-30.

Significant Infrastructures and/or relevant information to the proposal

The Sustainable Logistics Unit of the TeDIS Program manages an international network of researchers and institutions developing projects in the field of transport, logistics and supply chain management. The projects developed benefit from funding from the European Union and European Commission providing innovative solutions and policy guidance to the sustainability of the logistics sector at any territorial level.

Partner	Tel Aviv –Yafo Municipality			
Short Name	TLV	Type	Public authority	
Role	Pilot Partner	Country	Israel	
Website	https://www.tel-aviv.gov.il/en/Pages/HomePage.aspx			

Brief Description

Tel Aviv is the economic and cultural centre of Israel. The city is situated on the Mediterranean coastline on a land area comprising 51.8 sq. kilometres. It is the largest and most populous city in the metropolitan area. The estimated city’s population numbers 438,820 and is steadily growing, according to Israel Central Bureau of Statistics (CBS). As of 2008 (the last population census) Tel Aviv’s population is growing at an annual rate of 1.1% and is expected to reach 489,100 by 2025. There are around 3.8 million people in the metropolitan area, which covers an area size of 1,519 sq. kilometres. In order to preserve its predominant role as a major city, Tel Aviv strives to improve the quality of all transportation modes and to reduce congestion and the negative environmental impacts of traffic. Tel Aviv was awarded the title Best Smart City in the World and won first prize at the World Smart Cities Awards, in the Smart City Expo World Congress in Barcelona in 2014. Tel Aviv has been recognized as a start-up city that has undergone a digital revolution with the introduction of the DigiTel platform and city app and the implementation of free Wifi throughout the city. The DigiTel Residents’ Club and city app are personalized web and mobile platforms providing residents with individually tailored, location-specific information and services. The city of Tel Aviv has also won second place at the 2017 European Capital of Innovation and is a member now of the iCapital Network. Tel Aviv is the first Israeli city to become a member of the C40 network of cities. The city has joined the C40 Cities Climate Leadership Group, affirming the commitment of the city to reduce air pollution carbon emissions and tackling other climate change. Tel Aviv is also an active member

of 100 Resilient Cities and has signed the Milan Urban Food Policy Pact and will host its next annual Summit this year.

Main tasks and responsibilities within the project

The Municipality of Tel Aviv-Yafo will coordinate the city's pilot and will be in charge of the demonstration activities as well as lead the evaluation process in WP4. The municipality will lead the tasks of Planning public sphere re-allocation and stakeholders' engagement and will be involved in all other tasks.

Principal Team Members involved in the project

Mrs. Sharona Hershko (female) is the Director of Infrastructure and Construction Administration at the Tel Aviv – Yafo Municipality. Mrs. Hershko is responsible, inter alia, for the Municipality's infrastructure systems; development of new neighbourhoods, renovation and upgrading; redesigning the street, giving priority to pedestrians and cyclists. Ms. Hershko was previously Head of the Residence Administration of the Security Forces, responsible for establishing housing for military personnel in civilian neighbourhoods. Prior to this position as a Lt. Col. she was the Commander of the Construction and Infrastructure Unit at the Tel Nof Airbase. Mrs. Hershko was the head of the municipal steering committee of the EU-funded project CIVITAS -2MOVE2. Mrs. Hershko holds a BSc in Electrical Engineering from the Technion Israel Institute of Technology and an MA in Political Science from the University of Haifa, and is a graduate of the Israeli National Security College

Mr. Haggai Yaron (male) is the Director of the Tel Aviv-Yafo Municipality Mass Transit Planning department. Mr. Yaron holds a B.A. in Social Sciences (Sociology and Economics) and a Magister of Sciences at Urban and Regional Planning, Faculty of Architecture and Town Planning, The Technion- Israel Institute of Technology. In 2003-2014, Mr Yaron has joined the Tel Aviv Municipality as a consultant to the Municipality Mass Transit unit. He was in charge of coordinating preliminary plans for Light Rail Transit lines in the metropolitan area and participation in the planning team for Public Transport Authority (PTA) of the Tel Aviv Metropolitan area. Since 2014 he is the Director of the Tel Aviv-Yafo Municipality Mass Transit Planning department. Between 2012-2017, he was the Site Coordinator in the EU-funded project CIVITAS -2MOVE2.

Main relevant networks and experience in National and European Projects

- **Civitas 2MOVE2** - An European mobility project under the CIVITAS Plus II programme with four city partners, Stuttgart as project coordination-, Brno, Malaga and Tel Aviv-Yafo. The cities were flanked by the transport engineers SSP Consult, the University of Stuttgart, the public transport company of Brno and the *Technion* - Israel Institute of Technology 2MOVE2's main objective was to improve urban mobility by creating sustainable, energy-efficient urban transport systems in the participating cities. Specific emphasis was given in 2MOVE2 to the deployment and validation of innovative mobility solutions for urban passenger and freight transport. Topics addressed by 2MOVE2 range from e-mobility, freight, ITS-based traffic management to sustainable urban mobility planning (SUMP), cycling, public transport and corporate mobility management.
- **100 RC – 100 Resilient Cities** - Pioneered by The Rockefeller Foundation (100RC), helps cities around the world become more resilient to the physical, social, and economic challenges that are a growing part of the 21st century. 100RC provides assistance through funding for a Chief Resilience Officer in each member city to lead resilience efforts; resources for drafting a resilience strategy; membership in a global network of peer cities to share best practices and challenges.
- **C40** – Tel Aviv is the first Israeli city to become a member of the C40 network of cities. The city has joined the C40 Cities Climate Leadership Group, affirming the commitment of the

city to reduce air pollution carbon emissions and tackling other climate change.


- **iCapital Network**- The city of Tel Aviv has won second place at the 2017 European Capital of Innovation award competition and is a member now of the iCapital Network. The iCapital network will enable European cities to collaborate in developing and executing innovation strategies for their cities, in developing new and practical methodologies to involve and encourage citizens to innovate.

Publications, services and patents related to the project

- **Sustainable Strategic Transportation Plan** – The municipality has recently completed a strategic planning process of a long term transportation strategic plan which sets forth the development of a sustainable multi-modal efficient transport system that promotes all transportation modes (bicycle, walkability, public transport, sharing mobility, electric mobility, smart mobility and etc.). This plan not only describes the vision but also implements means of measurements and clear goals.
- **Smart Mobility Road Map for 2030** – The municipality is finalizing these days a plan with 31 projects/initiatives of smart mobility and transportation in 4 categories: Data driven, Electric, Shared and Autonomous/driverless.
- **Mobility management.** The Tel Aviv Yafo traffic management and control centre utilizes an innovative intelligent traffic management system, AVIVIM, which identifies non recurrent congestion and provide the operators with tools to relieve the congestion, giving priority to public transport and pedestrian movement.
- **Bike Sharing scheme. "Tel-O-Fun"** - the city's bike sharing rental system includes 198 bike stations which are located around the city with over 2,000 bicycles. Tel-O-Fun enables registered users to ride all over the city and return the bicycle to any of the stations placed next to residential areas, commercial, entertainment and employment centres.
- **Car-sharing scheme. "AutoTel"** – A municipal car-sharing scheme: let users rent one of 260 vehicles that are dispersed around the city on a short-term basis (A to Z model). Users can pick up or park a car in one of the 520 reserved places or (in an alternative unique to the Tel Aviv program) at a blue-and-white street-parking spot.

Significant Infrastructures and/or relevant information to the proposal

Information related to traffic data will be made available for project purposes. The city will explore new information sources in order to better understand the citizens travel habits and mobility needs. By performing robust civic engagement focused on relationship and community building, the city hope to enhance collaboration and foster knowledge transfer, dialogue and public engagement, involving citizens from different ages. Public participation processes, periodically conducted by the municipality, will serve as a platform for discussing alternatives of urban and transport planning.

Partner	Technion Israel Institute of Technology			 TECHNION Israel Institute of Technology
Short Name	TECHNION	Type	Research organisation	
Role	Pilot Partner	Country	Israel	
Website	http://tri.net.technion.ac.il/en/			

Brief Description

The Technion, founded in 1912, is Israel’s oldest university. It offers undergraduate and graduate degrees in science and engineering, and related fields. It has 18 academic departments and about 60 research centres. The Transportation Research Institute (TRI) is one of the Technion's' research institutes. TRI serves as a centre and framework of cooperation for faculty members from various Technion units whose research covers a wide spectrum of transportation subjects. This research is

primarily directed at solving problems of crucial national importance – Traditional and innovative public transport services, Travel behaviour and quality of service, Traffic Management and traffic congestion, emission control and road safety. TRI researchers are conducting innovative research in using crowd sourcing as a basis for improving pro-active traffic management. Data extracted from Social Networks as well as real-time location-based information from PMD are the fundamental elements in the development of cooperative models. These models aim to predict travel patterns in different time horizons and implement the most suitable traffic management strategies. TRI researchers participated in many European projects such as SafetNet, CyberCars and CyberMove, CityMobil, EU ARTEMIS, COST346, CANTIQUE, CONDUITS, 2MOVE2, SOLUTIONS and PETRA. The Technion team has gained significant expertise and experience in the development of mobility-related decision making methodologies and tools, while using state-of-the-art methods for data fusion and Big Data analysis. The team has been closely cooperating with major local authorities in Israel for over 25 years and was engaged in several international projects, particularly EU projects.

Main tasks and responsibilities within the project

Technion will be involved in the overall planning of Tel Aviv pilot and demonstration activities in WP4. The Technion will lead three of the technical subtasks that will be executed within the pilot: Exploring New information sources, Advanced data analysis, and Data-driven decision making. These tasks will include predicting trajectory patterns, and visualization of data analysis results to support decision-making processes. In addition the Technion will be involved in the Planning public sphere re-allocation specifically the pilot's sub-task Planning and applying Traffic management strategies supporting priorities among transport modes and vulnerable road users. The Beneficiary Technion – Israel Institute of Technology (“Technion”) will involve Technion Research & Development Foundation Ltd. (“TRDF”), in order to handle the financial and administrative aspects of the Technion’s involvement in the Action — including the tasks that include, among others, the employment and payment of personnel, purchase of equipment, or consumables that TRDF puts at disposal of Technion to carry out the work of the Action – with the aim to improve and rationalize the administrative and financial management of the Technion's externally funded research grants. The estimation of the costs budgeted for the in-kind contributions provided by TRDF to the Technion is € 99.476,00 which costs constitute an integral part of the total Technion budget in the Action. The in-kind contributions will be provided at the premises of Technion. Responsibility towards the EU lies fully with the Beneficiary Technion. TRDF will be providing such in-kind contributions to the Technion, under the provisions of Article 11 of the Grant Agreement.

Principal Team Members involved in the project

Dr. Shlomo Bekhor (male) is Associate Professor in the Faculty of Civil and Environmental Engineering at the Technion, and currently the Head of the Transportation and Geo-Information Division. He has a B.Sc. in Aeronautical Engineering from ITA – Aeronautical Institute of Technology, Sao Jose dos Campos, Brazil. His M.Sc. and Ph.D. degrees in Transportation Engineering were obtained at the Technion. He spent a two-year Post-Doc at the Massachusetts Institute of Technology. He teaches and conducts research in transportation planning and network equilibrium models, and has special interest in route choice modeling. He has also participated in several consulting projects related to transportation demand forecasting. He has published more than 80 papers in refereed journals and presented more than 100 papers in international conferences. He has participated in several projects funded by the European Commission: CyberCars, CyberMove, CityMobil, CATS, 2MOVE2, SOLUTIONS and PETRA.

Mrs. Ayelet Gal-Tzur (female) is a researcher at the Transportation Research Institute of the Technion. Dr. Gal-Tzur received her B.Sc. and M.Sc in Industrial and Management Engineering and her D.Sc in Transportation Engineering all from the Technion. For the past 25 years she has been involved in research projects in the area of mobility management, Intelligent Transportation Systems (ITS) and exploiting the potential of data mining and text mining for improving transportation services. Dr. Gal-Tzur was involved in several National and EC projects (CONDUITS, 2MOVE2,

SOLUTIONS and PETRA).


Main relevant networks and experience in National and European Projects

- PETRA - Personal Transport Advisor: An Integrated Platform of Mobility Patterns for Smart Cities to enable Demand-Adaptive Transportation Systems.** The objective of the PETRA project was to develop a service platform that connects providers & controllers of city transport with the travelers in a new way. Cities get an integrated platform to enable the provision of citizen-centric, demand-adaptive city-wide transportation services. Travelers get mobile applications that facilitate them in making travel priorities and choices for route and modality. The result of the project is a city-wide transportation system comprised of several sub-systems that involve transportation services and policies to be adaptive to the travel demand of the citizens. EU FP7 Research Programme (2013-2016).
- 2Move2 - New forms of sustainable urban transport and mobility.** The main aim of 2MOVE2 was to improve urban mobility by implementing sustainable, energy-efficient urban transport systems for the benefit of all citizens, society and climate policy, respecting environment and natural resources. A special focus was laid on the deployment and validation of innovative mobility solutions for urban passenger and freight transport. Topics addressed by 2MOVE2 range from e-mobility, freight, ITS-based traffic management to sustainable urban mobility planning (SUMPs), cycling, public transport and corporate mobility management. EU FP7 Research Programme (2012-2016).
- Modeling and evaluating the potential of new Information and Communication Technologies in changing travel behavior among different sectors of travellers.** The project aimed to estimate the impact of pre-trip and en-route information on travel mode choice for daily commuters and understanding the potential of social media (Question & Answer forums), as a platform for disseminating transport-related information for tourists. The project involved a simulation framework of mobility of different segments of the population and a survey aiming to understand the needs of certain populations as a basis for designing appropriate measures to promote sustainable policy. Ministry of Science, Space and Technology, Israel (2015-2018).
- Development of a methodology for fusing several information sources as a basis for traffic management decision making.** The aim of the project was to develop a methodology for the fusion of several types of traffic information from various sources in signalized urbanized environment, in order to improve the reliability of congestion detection and reduce the delay in detection of congestion. The project surveyed several data fusion models and the identification of those most appropriate for fusing traffic data. The conclusions and results of the project will provide a starting point for the fusion models required in SPROUT. Ministry of Transport, Israel (Chief Scientist) (2016-2018).

Publications, services and patents related to the project

- Bekhor S., and Blum Shem-Tov I. (2015). **Investigation of Travel Patterns using Passive Cellular Phone Data.** Journal of Location Based Services, 9(2), pp. 93-112.
- Haas I., Bekhor S. (2017). **Network Design Problem Considering System Time Minimization and Road Safety Maximization: Formulation and Solution Approaches.** Transportmetrica A: Transport Science 13(9), pp. 829-851.
- Nahmias B., Han Y., Bekhor S., Zhao F., Zegras P.C., Ben-Akiva M. (2018). **Enriching Activity-Based Models Using Smartphone-Based Travel Surveys.** Accepted for publication in Transportation Research Record.
- Gal-Tzur A., Grant-Muller S.M., Kuflik T., Minkov E., Nocera S., Shoor I., (2014). **The potential of social media in delivering transport policy goals.** Transport Policy, Volume 32, PP. 115-125
- Sdoukopoulos, E., Kose, P., Gal-Tzur, A., Mezghani, M., Boile, M., Sheety, E., & Mitropoulos, L., (2016). **Assessment of Urban Mobility Needs, Gaps and Priorities in**

Mediterranean Partner Countries. Transportation Research Procedia, Volume 14, PP.
1211-1220

Partner	Instytut Logistyki i Magazynowania			 Instytut Logistyki i Magazynowania
Short Name	ILiM	Type	Research organisation	
Role	Pilot Partner	Country	Poland	
Website	www.ILiM.poznan.pl			

Brief Description

The Institute of Logistics and Warehousing is widely acknowledged as Poland's centre of competence in logistics and a strategic partner of GS1 Poland. It is an interdisciplinary, state-owned R&D unit where logistics is perceived as both a subject of research as well as the field of practical application. The Institute's main areas of competence embrace logistics including optimisation and designing of logistics processes, transport systems, distribution networks, hubs and warehouses, etc. Moreover, it develops solutions in the field of Internet of Things digitalising supply chains and introducing EPC/RFID technology in variety of implementations. It also introduces GS1 communication and identification standards in different sectors (health, food, transport) and for different use. The Institute has been involved in above 50 European research projects (as Coordinator, WP Leader, or Partner) in Framework Programmes, CIP - ICT PSP, CEF, Era-Net and Interreg as well as EC tenders.

Main tasks and responsibilities within the project

ILiM will support the Kalisz Demo that will develop and validate the concept of organization and management of the loading/unloading operations in the city centre based on the sensor network using IoT technology enabling access to transport data in real-time and dynamic management of unloading operations in the city. Main tasks are the following:

- Identification of optimal loading space locations
- Designing and construction of loading/unloading space infrastructure (sensors, integration with IoT network)
- Developing of IT application for loading/unloading space management
- Defining of new operating and business models
- Test case validation
- Recommendations for Urban Mobility Policy.

Principal Team Members involved in the project

Mrs. Malgorzata Kirchner (female) is head of a Market Operations Unit at the Institute of Logistics and Warehousing. Responsible for implementation of research developments enabling effective and efficient roll-out of research solutions throughout logistics sector. Experienced project manager involved in a number of EU projects. Graduated from A.Mickiewicz University, management and marketing (Master's degree).

Mr. Michal Grabia (male) is Head of the Identification Technologies Laboratory and head of RFID research area at the Institute of Logistics and Warehousing, lecturer at the Poznan School of Logistics and trainer in identification technologies. He is a co-founder of the National Laboratory of EPC/RFID Technology and the European GS1 in Europe Lab Network, an author of publications in specialist journals and a member of many international organizations and working groups dealing with the development of new standards in the field of identification technologies, including RFID. He has many years of experience in managing and implementing projects related to developing concepts, designing and implementing innovative technological solutions, including in particular identification and location technologies. Graduated from the Faculty of Electrical Engineering at the Poznan University of Technology and Faculty of Mathematics and Computer Science at the A.Mickiewicz University in Poznan. A.Mickiewicz University and Executive MBA studies conducted at the

Wielkopolska Business School in cooperation with Nottingham Trent University at the University of Economics in Poznan.

Mr. Marcin Foltynski (male) is project manager and senior consultant at the Institute of Logistics and Warehousing – Logistics Expertise Department, lecturer at the Poznan School of Logistics. Master degree at the Poznan University of Economics and Business, specialization: transport and logistics. Post graduate studies: Financial and Strategic Analysis and Pedagogy. Currently PhD student at the Poznan University of Economics and Business. Experienced consultant in transport policy, green transport, city logistics, freight transport and logistics and management of international transport corridors, involved in many research and commercial projects. Author of many scientific articles, analysis and expert opinion on transport policy, logistics and intermodal transport and on the development of Pan-European transport corridors and European TEN-T network.

Main relevant networks and experience in National and European Projects


- **SULPITER** (INTERREG CE) aims to support policy makers in improving their understanding of FUAs (Focus Urban Area) freight phenomena in an energy and environmental perspective. It aims to enhance their capacity in urban freight mobility planning in order to develop and adopt Sustainable Urban Logistics Plans (SULPs).
- **eImpact** – (CEF transport) ILiM coordinates one of the project business case aiming to develop an e-Freight information system for synchromodal operations in ports. The main project objective is to establish an e-Freight pilot that enables proper ICT integration at port level and at multimodal service integration level, including the adoption of capacity publishing/sharing between inland terminals/terminal operations.
- **CLOUD** – (EraNet) ILiM coordinates a CLOUD project aiming to develop a virtual Logistic Single Window (LSW) as an ecosystem with services products & applications for all transport and supply chain stakeholders.
- **HubHarmony** – (EraNet) supports the harmonization of operational procedures and services offered at inland multimodal hubs to foster seamless operations.
- **ENCLOSE** (IEE) aimed to support the development of Sustainable Urban Logistic Plans (SULPs) in the 9 ENCLOSE forerunner and learner cities building up a suitable framework for the definition of SULPs for Small-/Mid-size historic towns.

Publications, services and patents related to the project

- **Development directions and barriers of intermodal transport in Poland with the perspective of logistics service providers** - Marcin Foltynski, Marcin Switała, Krzysztof Zowada, Publishing House of University of Economics in Katowice, 2018
- **Management tool for streamlining city logistics** - Marcin Foltynski, Transportation Research Procedia, 2016, vol. 16, s. 89-103
- **Electric fleets in urban logistics** - Marcin Foltynski, Procedia - Social and Behavioral Sciences, 2014 vol. 151, s. 48-59
- **Barriers limiting the development of intermodal transport in Poland - the perspective of businesses and public administration** - Marcin Foltynski, LogForum, 2014 nr 2, s. 51-59
- **Design of a DASH7 low power wireless sensor network for Industry 4.0 applications** - Tomasz Markowski; Michal Grabia; Jakub Mruczkiewicz; Krzysztof Plec

Significant Infrastructures and/or relevant information to the proposal

- Multimodal, multichannel base stations of a sensory network
- Multimodal beacons (DASH7, UHF RFID, LoRA) with sensors on board

Partner	Miasto Kalisz			 Kalisz Dopisz swoją historię
Short Name	KALISZ	Type	Public authority	
Role	Pilot Partner	Country	Poland	
Website	www.kalisz.pl			
Brief Description				
<p>Kalisz is a city in West-Central Poland, situated on the Prosna River. The excavations of a prehistoric village and mention of the settlement as Calisia by the astronomer-geographer Ptolemy in the 2nd century CE are evidence of the town's antiquity. A powerful castle stood there from the 12th to the 14th century. Kalisz obtained town rights in 1282. Now industrialized, Kalisz specializes in textile production, a trade begun during the 15th century. Engineering and food processing are also important to the local economy. One of the most important and innovative sectors in the city is the aviation industry. The city contains many scenic parks and historic churches, as well as a theatre and regional museum. It is represented in this project by the Municipality of Kalisz.</p>				
Main tasks and responsibilities within the project				
<p>The city will be involved especially in WP4 as a pilot city. The city aims at creating new, practice-based knowledge on how to navigate urban mobility policy through transition. The main tasks in which the city will be involved are:</p> <ul style="list-style-type: none"> • striving for sustainable mobility • use of new technologies in transport infrastructure • identifying the mobility and urban planning problems • defining of new operating and business models • examination of social factors 				
Principal Team Members involved in the project				
<p>Ms. Agnieszka Wypych (female) is Deputy Head of the Department of the Building, Urban Planning and Architecture. She is responsible for coordinating spatial development projects and management of a team of employees. She is an experienced project manager involved in EU projects and graduated from University of Science and Technology in Wrocław, urban planning (Master's degree).</p> <p>Ms. Hanna Zalewska (female) is Deputy Inspector of the Department of the Building, Urban Planning and Architecture. She is responsible for working on a landscape resolution regarding the restriction of advertising in the city. She deals with issues of aesthetics in the city's public space. She graduated from Cracow University of Technology, landscape architecture and has a master's degree in urban planning.</p>				
Main relevant networks and experience in National and European Projects				
<ul style="list-style-type: none"> • Project of the City of Kalisz “Development of the low-emission public transport system with the modernization of street lighting increasing its energy efficiency”, co-financed from the European Regional Development Fund under the Wielkopolska Regional Operational Program for the years 2014-2020. The main goal of the project is to increase public awareness of sustainable urban mobility and inclining the inhabitants of Kalisz and Kalisko – Ostrowska Agglomeration to sustainable mobility behaviors. The aim of the project is to make collective and non-motorized transport will be chosen more often than the car as the basic means of movement within the city and the Agglomeration. • Project of the City of Kalisz “Construction of the Integrated Traffic Management System in Kalisz”. The main goal of the project is improvement of accessibility to the regional and supraregional road system. 				

- Project of the City of Kalisz “Construction of the Integrated Traffic Management System in Kalisz”. The main goal of the project is development of intelligent transport systems.
- Project entitled "**Partnership for improving the quality and efficiency of administrative services in cities in the field of local taxes and fees and real estate management**" co-financed under the Operational Program Knowledge Education Development 2014-2020. The project is carried out until October 2018 in partnership with the Association of Polish Cities.


Publications, services and patents related to the project

- Development strategy of the City 2014-2024
- Spatial development plans:
 - "Local spatial development plan of the Regional Economic Zone Rypinek - II"
 - "Local zoning plan in the area of Budowlanych street"
 - "Local spatial development plan for a residential development complex in the Tyniec housing estate"
 - "Local spatial development plan - Grounds Przydworcowe III - part A"
 - "Local spatial development plan – Huby"

In connection with the preparation of the local spatial development plan, the local plan is publicly available for public viewing. Other services are: preparation of outlines and outlines from the local plan as well as public consultations.

Significant Infrastructures and/or relevant information to the proposal

- Content of local spatial development plans
- Network of bicycle paths
- Network of intelligent street lighting

Partner	Fundacja Kaliski Inkubator Przedsie Biorzosci			
Short Name	KALISZBIF	Type	Business Support Organization, NGO	
Role	Pilot Partner	Country	Poland	
Website	www.kip.kalisz.pl			

Brief Description

The Kalisz Business Incubator Foundation for more than 20 years has been initiating and acting for the socioeconomic development of Wielkopolska region. Its mission involves designing and offering solutions for business at each stage of its development. The offer of Kalisz Business Incubator includes information, advisory, training and financial services as well as space renting. The Foundation’s services are addressed to micro-, small- and medium--sized enterprises interested in:

- seeking funds for development,
- launching international commercial cooperation,
- a further development of their business activity in the European Union,
- developing companies’ business competencies and abilities.

The Foundation also performs numerous activities to support non-government organizations and informal groups.

Main tasks and responsibilities within the project

The Kalisz Business Incubator Foundation will provide technical support for the City of Kalisz especially in WP4 to execute the Polish pilot.

Principal Team Members involved in the project

Mrs. Zuzanna Szczudlik (female) is CEO of the Kalisz Business Incubator Foundation. She is responsible for strategy development and implementation, carrying out projects, monitoring operational activities, organisation development through designing and implementation of tools and processes supporting everyday actions, personnel management. She is an experienced project manager involved in a number of EU projects. She graduated from Poznan University of Economics, Poland Management and marketing, logistics and transport (Master's degree) and postgraduate studies in project managing with emphasis on the use of information technology, in coaching and in NGOs and social economics.

Mr. Pawel Kurasz (male) is Deputy CEO of the Kalisz Business Incubator Foundation. He is an experienced project manager involved in a number of EU projects. He has a master's degree in "Organization and Management" specialization "Business Administration", Poznan University of Economics and postgraduate studies in the field of Banking, Poznan University of Economics.

Main relevant networks and experience in National and European Projects

Their services are aimed in particular at micro, small and medium-sized enterprises. Local SMEs, as well as local NGOs are offered comprehensive information support and professional advisory services. What is more, both businessmen and aspiring entrepreneurs are welcome to get a loan, leasing, or help in finding other sources of financing in order to boost the development of their companies.

- Since 2008 KALISZBIF has been engaged in a project co-financed under the **European Union's programme for the competitiveness of SMEs (COSME) – Enterprise Europe Network**, helping businesses innovate and grow on an international scale. Our local contact point provides support for small and medium-sized enterprises with international ambitions, offering personalized services, such as finding opportunities for business cooperation worldwide. Enterprise Europe Network (co-funded by the European Union's COSME and Horizon 2020 programmes): aims to help micro, small and medium-sized enterprises innovate and grow internationally
- **"PRONETWORK - Enhancing visibility of Enterprise Europe Network through creation of network of local stakeholders"**. The Executive Agency for Competitiveness and Innovation (EACI)/The Executive Agency for Small and Medium-sized Enterprises (EASME).
- Kalisz Business Incubator Foundation has been a financial intermediary of the **JEREMIE Initiative (Joint European Resources for Micro-to-Medium Enterprises)** since 2010 - granting preferential loans to micro, small and medium-sized enterprises, as well as start-up companies without a credit history or any sufficient collaterals. Until now KALISZBIF has granted loans worth over 100 mln zlotys (approx. 23, 369, 946 €).
- The Project „Zapewnienie usług z zakresu rozwoju firmy dla przedsiębiorców oraz osób zamierzających rozpocząć działalność gospodarczą w formule one-stop- shops” (**company development for entrepreneurs using the one-stop-shop formula**). Consulting services for the SMEs as far as marketing, company management, and finances are concerned.
- The Project „Subregion kaliski inwestuje w kadry!” (**investing in human resources, aimed at locally based companies**). The key objective is the reimbursement aimed at local SMEs. Companies (both employees and managerial staff) from the Kalisz subregion are offered a wide range of trainings and consulting services available by the means of an online platform Baza Usług Rozwojowych.

Publications, services and patents related to the project

The Kalisz Business Incubator Foundation offers a broad range of services for growth-oriented SMEs : **ADVISORY SUPPORT** and **INNOVATION SUPPORT**:

- advice and help for innovative SMEs to access R&I funding (H2020, SME Instrument ...),

- personalised support to help shape innovation potential into international commercial success,
- help in finding the right technology to improve your innovation,
- help in finding the finance it needs to grow,
- searching funds for development (loans, grants, leasing),
- establishing international trade cooperation,
- extending local enterprises’ business activities into the European Union markets, and
- development of activity by means of innovative technologies.

Partner	Municipality of Ioannina			 Δήμος Ιωαννιτών
Short Name	MoI	Type	Public authority	
Role	Validation Partner	Country	Greece	
Website	https://www.ioannina.gr/			

Brief Description

Ioannina is the capital and largest city of Epirus, an administrative region in north-western Greece, with a population of 112,486 (2011 census). It lies at an elevation of approximately 500 m above sea level, on the western shore of Lake Pamvotis and is located 450 km northwest of Athens –Capital and 290 km southwest of Thessaloniki, the two biggest cities of Greece. The Municipality of Ioannina constitutes the traditional dynamic urban centre of the Region of Epirus and the main urban centre of Western Greece, after Patras. With a population of approximately 112.486 inhabitants the Municipality of Ioannina is one of the 10 largest Municipalities, in terms of inhabitants, in Greece. Located at the north-west of the Greek Peninsula it is found at the cross-border area between Albania and Greece. Geographically, the Municipality of Ioannina is found in the internal area of the European Union and specifically at the cross-border region between Greece and Italy. Strategically, the Municipality of Ioannina forms a geopolitical crossroad of the development axis of north Greece, especially after the construction of the EgnatiaOdos Motorway. Combined with the Ionian Odos Motorway and the E65 motorway, Ioannina is a strategic Interchange Node of combined transportation due to its proximity to the country's international gateway, the port of Igoumenitsa. The city's modern development is marked by its advancement in arts, literature, trade and tourism and is supported by the development of the regional infrastructure including Ioannina National Airport (King Pyrrhus), the Water Sports Center, the motorways and the city’s hospitals. The University of Ioannina, with its extensive research and technological activity, and the Technological Institute of Education (T.E.I.) of Epirus, also help the rate of progress and development of the city. The Regional Unit of Ioannina produces 56,5% of the total GDP of the Region of Epirus. For 2009, GDP per capita, for the regional Unit of Ioannina, was at a level of 79% compared to that of the average EU 27 (Eurostat 2009). Infrastructure investments (Egnatia road, Ionia road, Igoumenitsa port, etc.) over the last decade have better connected the region both nationally and internationally.

Main tasks and responsibilities within the project

The City of Ioannina is a 2nd layer validation city of the wider applicability of the pilot results in WP5, and will be actively involved in the activities within WP6 “Building cities’ policy making capacity”.

Principal Team Members involved in the project

Mr. Georgios Antoniou (male) is the Special Advisor to the Mayor of Municipality of Ioannina in issues of Programming and Development. He holds a BSc in Environmental Sciences and an MSc in Environmental Policy and Management. He specializes in strategic planning and he has contributed

in the formation of the strategies of the Municipality concerning Sustainable Urban Development, Sustainable Energy and Sustainable Mobility. Moreover, he oversees all co-funded projects of the Municipality with a special interest in European funded projects.

Mr. Vasileios Floudas (male) is the director of the Department of Programming and Development. He holds a BSc in Economic Studies and an MSc in Management of Cultural Assets. He is the particularly concerned about the interface of Economy with Culture, Society and the Environment. In the past he has been managing several National or European co-funded projects

Mr. Athanasios Mantalovas (male) is the Deputy Mayor in Issues of Programming and Development. He holds a BSc in Chemistry. He has been working for the Management Organisation Unit Of Development Programmes assists public authorities in the effective management of EU-funded programmes. He has great experience in management and control of EU funded projects. Before the Municipality he worked for many years as a member of the Intermediary Authority of the Operational Program “Epirus” that manages all structural funds in the region of Epirus.

Main relevant networks and experience in National and European Projects

- **“COproductionN with NatureE for City Transitioning, Innovation and Governance ACRONYM: “CONNECTING”** The Connecting Nature project aims developing financial and innovation models for nature-based solutions for scaling-out in the fast-follower cities. The objectives in this work package are:
 - To engage the fast-follower in capacity-building and experiential learning using a curatorial planning process;
 - To develop masterplans, and to submit applications for the funding to realise these masterplans, for rolling-out nature-based solutions in the fast-follower cities;
 - To develop sustainable support for innovation, exploitation and enterprise development using selected and promising new nature-based solution exemplars in the fast-follower cities;
 - To feedback experiences and knowledge gained into the reference framework for nature-based solutions.
- **Promoting citizens’ active involvement in the development of Sustainable Travel Plans in Med Cities with Seasonal Demand (MOTIVATE).** The MOTIVATE project is promoting citizens' engagement in urban sustainable mobility planning. Through the use of social media and crowdsourcing applications, citizens are asked to contribute to the decision making procedure by:
 - providing data for their daily trips
 - evaluating the current transport services, and
 - assessing the usefulness of proposed/planned mobility interventions
 Citizens' contribution is estimated to influence the effectiveness of SUMP's development (enhancing the implementation of the 11 steps of SUMP cycle) and result in acceptable and long lasting sustainable mobility measures. The Municipality of Ioannina is preparing a pilot action and working in the 1st e-parking application for 100 parking spots in the city.
- **URBACT:** The cities in the URBACT Resilient Europe network worked together to learn and share experiences with the aim to foster resilience and sustainability. Becoming more resilient means that a city strives to enhance its ability to bounce back and grow even stronger and better in the face of the chronic stresses and acute shocks. As such, city resilience is a continuous challenge for individuals, communities, institutions, businesses and infrastructure systems to address current trends and future transitions. We will look at the challenges of achieving resilience in and of our cities in a comprehensive and holistic way. The approach of Resilient Europe is to apply the lessons from the innovative governance approach of Transition Management. Transition Management is a process-oriented and participatory steering approach that enables social learning through iterations between collective vision development and experimenting.


- Cycling Cities - Local Opportunities for Sustainable Mobility and Tourism Development (Cyclo):** CYCLO was aimed at contributing to the creation of sustainable mobility in some small and medium towns and cities of the MED area through the realization of experimental actions implying a stronger use of the bicycle. The project focused on the idea that sustainable mobility in small and medium urban contexts should involve a strong impulse to the use of the bicycle as a means at low environmental impact, able to develop a new approach to the quality of life and air in our towns and cities. The creation of new services and facilities, as well as the application of innovative, integrated solutions supporting bike use are a premise to enhance citizens and tourists' quality of life and health. The urban areas involved in CYCLO tried to transform into more accessible systems. Besides, the concept of accessibility has to be meant as deeply interrelated with the concept of welcoming systems. Moreover, the effort made to improve bike use in daily life in the CYCLO context implies the involvement of decision-makers for the creation and implementation of specific policies supporting bike use (for example the subscription of agreements promoting intermodality and multimodality - bike-train, bike-car, bike-bus, etc.).

Publications, services and patents related to the project

- Public bikes
- Sustainable Urban Mobility Strategy – undergoing
- Close cooperation with stakeholders (urban and peri-urban bus, federation of people with movement disabilities)

Significant Infrastructures and/or relevant information to the proposal

The city of Ioannina is preparing a smart parking (e-parking) application that is relevant to the project.

Partner	Stad Mechelen			
Short Name	MECH	Type	Public authority	
Role	Validation Partner	Country	Belgium	
Website	http://www.mechelen.be			

Brief Description

Mechelen, a local government, is a medium-sized city and municipality in the province of Antwerp, Flanders, Belgium. The municipality comprises the city of Mechelen proper, some quarters at its outskirts, the hamlets of Nekkerspoel and Battel, as well as the villages of Walem, Heffen, Leest, Hombeek, and Muizen. Mechelen lies on the major urban and industrial axis Brussels–Antwerp, about 25 km from each city. Inhabitants find employment at Mechelen's southern industrial and northern office estates, as well as at offices or industry near the capital and Zaventem Airport, or at industrial plants near Antwerp's seaport. It has 85.000 inhabitants and it is estimated that it will grow to 100.000 inhabitants by 2030. The city has attracted in the last years more inhabitants, entrepreneurs, employers, visitors and tourists which imply a lot more traffic and transport flows. On the other hand Mechelen has an historic center with a busy shopping center and the ambition to create a car-free pedestrian shopping triangle. In 2012, Mechelen took a big step in installing a car-restricted inner city.

Main tasks and responsibilities within the project

As a 2nd layer city in SPROUT, the city of Mechelen will validate the pilot's results in WP5. It will be also involved in the activities within WP5. The city will exchange knowledge and expertise and can learn from implemented pilots in order to evolve to a Sulp (Sustainable Urban Logistics Plan).

It is mainly interested in following the experiences of the pilot in the city Kalisz, Poland that will develop and validate the concept of organization and management of the loading/unloading operations in the city centre. Mechelen has the ambition of doing the same.

Principal Team Members involved in the project

Mrs. Leen Schaerlaekens (female) is a senior expert project coordinator in the Department of Mobility. She has a master in social-economical geography & traffic management. Leen has been a mobility expert for the city since 2006. She mainly works on the general mobility policy but also follows all technological developments in mobility. She was also involved as senior expert in the European projects Cyclelogistics Ahead and Novelog.

Mrs. Anne Recour (female) is a senior expert subsidy advisor for the City. She has a master in communications. Anne Recour started her career in 2015 at the City of Mechelen as a project coordinator for the European Project Novelog (Horizon 2020) at the department of mobility. In a short time she built a network within the logistics (academic) world and market. With this experience she also gathered relevant know-how on sustainable distribution alternatives. She made the switch then to the function of subsidy advisor for the city and is now responsible for the search, candidature and follow-up of any interesting European or interregional project.

Mrs. Veerle De Meyer (female) is project manager for the city. She has a master in political and social sciences and is a postgraduate in economics and marketing. Veerle has worked for the mobility department since 2016. She started as project coordinator for the European Project Cyclelogistics Ahead (FP7). Next to the start-up of a cyclelogistics company in the city, she worked on the built-up of awareness of cyclelogistics with all the different stakeholders and sets up pilot projects with regards to first and last mile. She is now project coordinator for the European Projects Novelog (Horizon 2020) and Surflogh (Interreg NorthSea Region). The focus lies here on data analysis and creation of a data model and implementation of pilot projects with focus on consolidation (for example: smart lockers, micro-hubs, loading & unloading zones).

Main relevant networks and experience in National and European Projects

Mechelen has been investing in European cooperation since 2007. The city has been both project partner and lead partner in Interreg projects (**2Seas, NorthSea Region and Flanders - The Netherlands**). To keep the city accessible and stimulate sustainable and smart mobility & logistics Mechelen participated in 2 projects: **Cyclelogistics Ahead** (FP7: cargo bike transport and business models) and **Novelog** (Horizon2020: understanding urban freight to implement sustainable measures and facilitate stakeholder collaboration). It gave Mechelen experience in stimulating new alternatives and developing a regulatory framework. With the participation in 2 European Projects Cyclelogistics Ahead and Novelog, Mechelen had the opportunity:


- To build experience in sustainable transport, such as cyclelogistics.
- To build a network with stakeholders, such as shop owners and logistic service providers.
- To experiment with different alternative sustainable logistic solutions.

The city has won an award with the **ESF project Café Herman**. The city is also participating in a **COSME project** (bringing together greenways and UNESCO world heritage, in combination with virtual tourism). The city believes in the added value of European cooperation and has prepared its administrative processes to cope with European projects most efficiently.

The city is currently partner in an Interreg NorthSea Region project called **Surflogh**. Surflogh stands for **Smart Urban Freight Logistics Hubs**. Mechelen is lead of the work package 'pilot projects'. It will implement itself pilot projects on a network of smart lockers and smart loading and unloading zones that will be monitored via a mobile app. This aligns perfectly with the SPROUT project scope and therefore it is interesting for the city to function as a 2nd layer city.

Publications, services and patents related to the project

- Publication of the mobility plan for the city’s legislature 2012-2018.
- Set-up and support of a bike courier company.
- Advertising campaign 2016 for bike delivery companies.
- Signing of the European Mayor’s covenant (reduce CO2 emission with 20% by 2020).
- Publication of a sustainable development plan: strategy to become a climate neutral city.

Partner	Municipiul Arad			
Short Name	ARAD	Type	Public authority	
Role	Validation Partner	Country	Romania	
Website	http://www.primariaarad.ro/index.php			

Brief Description

Arad is the main Western gateway of Romania. Located on one of the main Pan-European road and rail corridors, the city of Arad is one of the most prosperous and dynamic Romanian cities, gifted with a rich architectural heritage and a generous natural environment, mainly due to the Mureş river. Arad has traditionally been a city of trams, with the largest network in Romania, after Bucharest (171 km), notable for its coverage and accessibility. Arad is also a city of bicycles, with the longest urban network of cycle lanes in the country (135 km) and the highest rate of bicycle use nationally (8.2%). Over the past 10 years, the Municipality has stepped up its efforts to rehabilitate and develop its urban traffic infrastructure, with the top priority being to breathe new life into the public transport system by modernising it, improving the quality of services and promoting the use of bicycles. The local infrastructure enables people to get around the city by public transport (trams and buses) and private cars, bicycles and a modernised pedestrian network which has been made accessible to persons with impaired mobility or other special needs. Economic development, loan agreements signed with international financial institutions (EBRD, IBRD) and access to European funds have provided the resources necessary for public works to rehabilitate large-scale infrastructures. The quality of the environment has improved significantly as a result of the transformation in industrial activities and the positive impact of investments in local transport, the waste water collection and treatment system, the development of green spaces, and the upgrading of the thermal power plant. Arad’s priorities for the 2014-2020 period are furthering the city’s sustainable development, primarily in terms of urban mobility, green spaces and the energy sector, in close association with efforts to engage the community and all interested parties, so that the whole community will play a part in the city greening plan. By 2020, the city of Arad will become an important regional metropolis with a high quality of life in a healthy environment, and a major hub for tourism. Arad has also committed to a target of reducing its carbon emissions by 23% by 2020. It is represented by the Municipality of Arad in this project.

Main tasks and responsibilities within the project

Arad’s main role is that of a Validator City that corroborates the outputs of the pilot cases in WP5 and WP6. As part of the project, Arad shall benefit from capacity building activities that include training on the tools developed through webinars, e-courses and capacity building workshops. As a city in constant development with the need of new approaches and logistics in urban mobility, the project shall greatly influence city planning and the overall view on how challenges and emerging technologies in mobility could be tackled, while giving important insight for cities with similar geographical and cultural environment.

Principal Team Members involved in the project

Mrs. Laura Bocancios (female) is Head of the European Development Programmes Department

within the Municipality of Arad since June 2011. Mrs. Bocancios has various experience as a project manager and communication officer on European projects, including multi-partner international projects, from 2005 to present time. She has been actively involved both in the development of SEAP and of the City's Green Strategy, as well as in the City's adhesion to the Covenant of Mayors and to the Polis Network, being also in charge with the City's activity as a member of international associations and networks.

Mrs. Clementina Iucu (female) is Head of the Roads Maintenance and Repair Department within the Municipality of Arad since June 2007. Mrs. Iucu has an extended work experience both in the private and public sector. She worked as an engineer for the state railway operator CFR, as a general manager for the company Victoria Construct in Reșița, as a public officer within the County Council Caras-Severin and, as head of department, is currently involved both in contracting and supervising the roads, rails and bridges maintenance and repair works and in various projects related to urban mobility. One of her main responsibilities is that of an adviser on specialized technical issues.

Main relevant networks and experience in National and European Projects

- **“Arad Urban Transport” Project** (“Rehabilitation of tramlines and roads on the main north-south axis of the Municipality of Arad”) is the biggest project to modernise Arad’s tram infrastructure. It was implemented between 2005 and 2013 and funded by two loans from the European Bank for Reconstruction and Development (EBRD), which guaranteed compliance with environmental standards by means of its strategic objective of promoting projects which bring significant social and environmental benefits. In parallel with this project, some other large-scale works to rehabilitate the network of lines were carried out with funding from the local budget. Using the same Agreement with EBRD, Arad is also implementing the **Arad Urban Transport Project Phase III – Modernisation of Tram Depot**. This project includes the procurement of new trams, the modernisation of the tram depot and the implementation of an e-ticket system with a loan from EBRD for better mobility.
- **“Urban regeneration of the public spaces within residential blocks in the districts Alfa, Faleza Mureș, Confecții, Micălaca, Vlaicu and City Centre, including the protected area in the City of Arad”**. The project is financed by a loan from EBRD and aims at building parking spaces and a better parking policy, and the rehabilitation of major urban areas (pavements, sewerage, urban furnishing, green spaces) in order to also improve mobility. 8 works contracts signed June 2018 (ongoing).
- **Creation of a network of cycle lanes** covering a distance of 135 kilometres, financed by European funds and funds from the local budget, at a total cost of approximately EUR 2 million. The network was designed so as to cover the urban area as well as possible, linking together all districts of the Municipality and interconnecting the peri-urban area, the Mureș Floodplain Park leisure area, the banks of the Mureș, and the central zone. In 2016, the Local Council approved a study on the implementation of a bike-sharing system.
- **Rehabilitation of the Old Historic Centre of the Municipality of Arad project**, which was co-financed through the Regional Operational Programme 2001-2013, and led to an increase in traffic fluidity between the city centre and the Aradul Nou district, including towards Timișoara.

Publications, services and patents related to the project

- Signed the Covenant of Mayor for Climate and Energy to reduce CO2 emission with 23% by 2020, which resulted in the development and publication of the **Sustainable Energy Action Plan (SEAP) – 2012-2020**;

- **Integrated Urban Development Strategy (SIDU) – 2014 – 2030;**
- **Strategy for the Transformation of the Municipality of Arad into a Green City – 2016 - 2025**
- Publication of the city’s **Sustainable Urban Mobility Plan (SUMP) – 2016 – 2023** - to strike a balance between mobility of the public and goods, economic performance and social wellbeing, and to reduce the impact of urban activity on the environment

Partner	Gemeente’s Hertogenbosch			
Short Name	HTB	Type	Public Authority	
Role	Validation Partner	Country	The Netherlands	
Website	https://www.s-hertogenbosch.nl/			

Brief Description

The city of ‘s-Hertogenbosch is located in the Southern of the Netherlands with a population of approximately 153,000 inhabitants, size 11.807 ha. It is the capital of the province of North Brabant. The mediaeval city centre is a touristic hotspot for shopping, dining and leisure. The district near the Central Station is in development as a modern extension of the old city with high-rise buildings and a more urban feel. The traffic and transport network in ‘s-Hertogenbosch consists of five components: a high-quality bicycle network, public transport (railway stations and bus lines), an optimized road network, parking facilities in the inner city as well as at park & rides, and room for cyclists and pedestrians. In 2011, ‘s-Hertogenbosch was proclaimed Cycling City of the Netherlands.

Main tasks and responsibilities within the project

As a validating city ‘s-Hertogenbosch will have to ensure that the project outcomes can be effectively transferred to other cities and are enough innovative to renew mobility planning and operational policies through the activities carried out in WP5 and WP6.

Principal Team Members involved in the project

Dr. Eline Heyms-Scheepers (female) joined the municipality of ‘s-Hertogenbosch in July 2018. She completed her doctoral thesis (named: “Opportunities to stimulate active transport”) in 2016 and worked for over 2 year at the KiM Netherlands Institute for Transport Policy Analysis, followed by working at a transport consulting firm. During her career Eline published several papers in journals as well as on scientific conferences. Eline has a wide experience in investigating mobility behaviour.

Dr. Annelies de Ridder (female) joined the municipality of ‘s-Hertogenbosch in May 2016. She is Team Leader of the team which makes the urban mobility plan. This plan consists of long term goals – both for mobility as well as sustainability in traffic – and short term actions and innovations. Annelies has a PhD in coalition formation and worked in consultancy for nine years. Her assets are combining governance / management and the world of mobility.

Mr. Ron Bos, MSc (male) joined the municipality of ‘s-Hertogenbosch in June 2016. Ron is co-responsible for the urban mobility plan of the city. He graduated in Urban Planning at Wageningen University and has over 10 years of experience in urban mobility planning both in a consultancy firm and several Dutch municipalities. Ron was involved in the COST Action Programme ‘Accessibility instruments for planning practice in Europe’ which compared over 20 different accessibility instruments across Europe (www.cost.eu/COST_Actions/tud/TU1002).

Main relevant networks and experience in National and European Projects

- **Brabantstad** – a cooperation of the province, five big cities in Noord-Brabant, business, operators and knowledge institutes (<http://www.brabantstad.nl/en/>). Brabantstad strives to maintain its position in the top 5 European knowledge and innovations regions, and aims to strengthen the collective force and international competitive power of Brabant. At the core of the collaboration within Brabantstad, lies a strategic agenda according to four development goals: 1) Economic strengthening through knowledge, innovation and valorisation; 2) increase international allure; 3) promote (international) accessibility; and 4) enhance spatial structure.
- **National Municipal Network for Mobility and Infrastructure** (GNMI: “National Gemeentelijk Netwerk voor Mobiliteit en Infrastructuur”) (<https://gnmi.nl/hoofdpagina/>). GNMI is a network of municipalities working together on better local mobility policies.
- Innovation program “Mobiele stad” (<http://www.mobiele-stad.nl/>). This innovation program conducts pilots/experiments targeting the development and testing of innovations on the integration of mobility, technology and space in cities and environmental regions. This programme is under the lead of Technical University of Twente and the Technical University of Eindhoven.
- Partner in the **ENCLOSE (ENergy efficiency in City LOGistics Services for small and mid-sized European Historic Towns)** project. ENCLOSE has the main objective of raising awareness about the challenges of energy efficient and **sustainable urban logistics in European Small-/Mid-size Historic Towns** (SMHTs) and about the concrete opportunities to achieve highly significant improvements and benefits by implementing and operating suitable and effective measures, schemes and framework approaches specifically targeted to such class of urban environments. Within ENCLOSE 9 European cities shared their experiences. Outcomes of the project are used in ‘s-Hertogenbosch for a “Sustainable Urban Logistics Plan” (<http://www.enclose.eu/content.php?lang=en>).
- Member of the **CIVITAS network** (<http://civitas.eu/content/civitas-network>)

Publications, services and patents related to the project


- Strategy document for mobility policy in the municipality of ‘s-Hertogenbosch (“Actualisatie Koersnota, 2017”).
- Mobility as a service pilot conducted in the city in cooperation with the chair of Smart Mobility Planning of the University of Twente, Netherlands. (publication following in 2019)
- Hoe doede gij da? Smart mobiliteitsbeleid in Brabant. Paper reflecting on the ‘smart mobility discourse’ in Dutch mobility policy making. Presented at CVS-conference 2016 (the main Dutch conference on mobility practices and research). Won the 6th price.
- ‘Are you getting it?’ Vier persona’s voor de verkeerskundige van morgen. Paper discussing the role and characteristics of the ‘traffic planner 2.0’ within the ‘smart mobility discourse’ Presented at NVC-conference 2017 (the second Dutch conference on mobility practices).

Significant Infrastructures and/or relevant information to the proposal

- BMN communities of (business)stakeholders tackling mobility topics together. We cooperate in a provincial programme consisting of 13 ‘communities of practice’ which address mobility issues and co-create mobility projects with government, businesses, educational institutions and citizens.
- The implementation of 35 i-VRI’s (Intelligent traffic lights) in the city’. The city of ‘s-Hertogenbosch is the first city implementing smart-traffic light software on a city scale, this is not a pilot project but now is fully operational.
- The implementation of the ‘Schwung app’ which enables cyclists to cycle faster within the city. The app detects traffic lights and sends a signal which gives cyclists more and faster ‘green time’, reducing waiting time. Over 2000 cyclists are currently using the app. The city of ‘s-Hertogenbosch is the first city implementing this software on a city scale, this is not a

pilot project but now is fully operational.

- Free monitored bicycle parking facilities in the inner city and at railway stations.
- Park and ride facilities at the outskirts of the city from where you can continue your journey by bus or bicycle (rental bikes available).
- In 2019 they will start our own pilot on sustainable ways of transporting supplies to the city centre.

Partner	Region Ile de France			
Short Name	IDFrance	Type	Public authority	
Role	Validation Partner	Country	France	
Website	www.iledefrance.fr			

Brief Description

Île-de-France is one of the 18 regions of France and includes the city of Paris. It covers 12,012 square kilometres (4,638 square miles) and has its own regional council and president. It has a population of 12,005,077 as of January 2014, equivalent to 18.2% of the population of France. The region is made up of eight administrative departments: Paris, Essonne, Hauts-de-Seine, Seine-Saint-Denis, Seine-et-Marne, Val-de-Marne, Val-d'Oise and Yvelines. The GDP of the region in 2016 was €681 billion. It has the highest per-capita GDP among regions in France and the third-highest of regions in the European Union. It has one of the densest subway networks in the world, one of the busiest urban highway systems in Europe, and its rail traffic accounts for nearly half of all regional trains operating in the country. The Region has the competency to organize transports through infrastructures investments and urban planning. The IDF Region strives to become a leading urban territory in the experimentation and implementation of innovative solutions towards sustainable and innovative urban mobility, for passengers and freight as well. The IDF Region has set up 2 strategic plans focusing on innovation in urban mobility: one aiming at reducing traffic congestion by accelerating the implementation of innovative technologies and the other one to foster urban logistic efficiency in order to reduce the negative externalities and develop Paris Region businesses’ competitiveness. The IDF Region has implemented the resources and dedicated organization required to guarantee its long-term commitments. IDF develops strategic public and private partnerships to promote a collaborative approach.

Main tasks and responsibilities within the project

As a validating city, the IDF Region will have to ensure that the project outcomes can be effectively transferred to other cities and are enough innovative to renew mobility planning and operational policies through the activities carried out in WP5 and WP6.

Principal Team Members involved in the project

Mrs. Nathalie Granes (female) works at the Ile-de-France Region since 2003 and has 15 years of experience in urban mobility and logistics .Since 2017, she is Head of the “Freight and innovative mobility solutions” unit, in charge of the freight and urban logistics regional strategy and contact point of the Transport direction for private transport companies. From 2011 to 2016, she was Head of the ‘Eco mobility and SUMP’ unit, in charge of the revision of the regional SUMP and of the regional mobility management policy, and from rom 2003 to 2011 Transport engineer in charge of the implementation of the 1rst regional SUMP, and leading partner in the European COMMERCE project. Finally, from 1997 to 2003, she was head of the audit section in the Budget and Finance department in charge of monitoring associations and semi-public development company.

Mr. Pierre Launay (male) is a Ph.D. that joined the “Freight and innovative mobility solutions” unit of the Ile-de-France Region in August 2018 after a 4 years’ experience in the academic world.

He completed his doctoral thesis in Transportation and Logistics at Paris-East University (IFSTTAR) in March 2018, four years after graduating from Paris 1 Pantheon-Sorbonne University with a master's degree in Urban Planning. His research works have focused on Less-than-truckload transportation, urban logistics, warehouses location and logistics vehicles trips. Pierre have published 4 papers in scientific peer-view journals and presented his works at several conferences on Transport and Logistics across the world (TRB, WCTR, I-NUF).

Main relevant networks and experience in National and European Projects


- **COMMERCE** (supported by “Intelligent Energy”): develop companies’ mobility plan all over Europe : conducted from 2007 to 2010, its objective was to develop, deliver and mainstream activities within the framework companies mobility plans to reduce car use amongst Europe’s commuting public and ultimately to reduce associated Co2 emissions. LNG Motion (supported by CEF Transport 2015) : from 2016, deployment of a dense natural gas distribution network on the TEN-T corridors and multidisciplinary study on the logistical challenges of gas ;
- **Tornado** (IDFrance projet -), since September 2017, financing and accompanying innovative industrial groups and local cities to implement on-demand transport services using a fleet of autonomous vehicles in peri-urban and rural areas.

Publications, services and patents related to the project

- Regional strategy for freight and logistics: a new strategic positioning acting for a controlled efficient and active logistics.
- Region plan to reduce traffic congestion by accelerating the implementation of innovative technologies and services.
- Region plans promote Cycling use in commuting.
- Ile-de-France Smart Region Initiative: use the contributions of the digital revolution (artificial intelligence, big data, IoT, collaborative economy) to improve individual and collective well-being by offering new services and equipments.

Significant Infrastructures and/or relevant information to the proposal

- 2 International airports with logistic area: Roissy Charles de Gaulle (with a large logistic center dedicated to air freight) and Orly (with the largest national logistic area dedicated to fresh products in Rungis)
- Waterways infrastructures along the Seine River and many ports inside Paris city center, playing a role as hinterland of the seaports of Le Havre and Rouen.
- Large multimodal infrastructure network connecting the city center to more remote areas of the regional territory: port of Gennevilliers, Port of Bonneuil, combined road-rail platform in Valenton.
- 17 millions square meters of logistic real estate.

Partner	Camara Municipal de Almada			
CMA	CMA	Type	Public authority	
Role	Validation Partner	Country	Portugal	
Website	http://www.m-almada.pt/xportal/xmain?xpid=cnav2			
Brief Description				
<p>Serving a population of 175,000 people, Almada City Council has responsibility for local environmental actions, planning and management. As an urban Council with no heavy industry, the major focus in terms of climate change impacts is on mobility and buildings sector. Almada has adopted a Local Development Strategy, which has been used as the framework for the local activity for the last 3 decades. Each of these decades has then been devoted to a particular topic related to the local needs and reality at each moment, which has allowed the City Council to follow a balanced, smooth and coherent development pattern, based in solid sustainability criteria. For the current decade, Almada City Council has adopted the motto “Almada+: Sustainability, Solidarity and Eco-Efficiency”. These guiding principles are expressed in the different development axis that implement this strategy and pursue the objectives stated above. In the field of “Environment, Biodiversity and Energy”, Almada has been implementing its Local Strategy for Climate Change, which comprises the dimensions of mitigation and adaptation. The mitigation component addresses the reduction of energy related carbon emissions, by reducing energy use through the improvement of the efficiency in the use of energy and the replacement of fossil energy sources with renewable endogenous energy sources, thus paving the way towards a low carbon city. On the other hand, the adaptation component identifies and implements the planning solutions that guarantee the resilience of the natural, urban, social and economic systems in Almada. Almada’s commitment to these principles meant that, in 2001 it was the first Portuguese Local Government to produce an action plan for the reduction of the energy consumption. Almada has also received several awards in the field of energy efficiency or sustainable transport:</p> <ul style="list-style-type: none"> • Winner of the EPOMM award in 2014, for the very successful transfer of Munich’s Gscheid Mobil welcome package for new residents. This resulted in a New Residents Welcome Kit in Almada. • Winner of the EMW Award in 2010, judged by an independent panel of mobility experts during the European Mobility Week 2010. • Winner of the international Stockholm Partnerships for Sustainable Cities “Ambassador Project Award” in 2002, promoted by the United Nations, with the Campaign “Almada, Better Without Cars”. 				
Main tasks and responsibilities within the project				
<p>As a validation city, Almada will contribute to the SPROUT project by evaluating the feasibility and transferability of pilot tested policies under different cultural/behavioural/governance circumstances in WP5 and WP6.</p>				
Principal Team Members involved in the project				
<p>Dr. Catarina Freitas (female) is a Chemical Engineer, with a MsC in Chemical Engineering and PhD studies on environmental technology. She has been Head Officer for Energy and Environmental issues at the Municipality of Almada since 1997. At the present she is the Head of Sustainable Environmental Management and Planning Department of Almada City Council, as well as the Executive Member of the Board of AGENEAL, Local Energy Management Agency of Almada. She coordinates the development and implementation of the Local Strategy for Climate Change, and in that framework, she is responsible for the development and management of Almada’s Less Carbon Fund, a financial mechanism to support energy efficient investments in municipal facilities. She has a vast experience in the coordination and technical and financial management of European projects and</p>				

partnerships. Author and co-author of several presentations and papers on municipal energy and environmental management, energy efficiency, climate change and urban sustainable mobility.

Mrs. Georgina Doroteia (female) is a Civil engineer. In office since 1980 in the Municipality of Almada as a technician in the Department of Municipal Works. As an experienced technician in this area, accompanied and supervision of various municipal works in the county From 1994 to 2006 exercised the traffic division chief functions. Since 2007, she exercises the functions of director of the Department of Traffic and Road Maintenance Network. Has experience in the development and participation in EU-funded projects, like ENCLOSE (ENergy efficiency in City LOGistics Services for small and mid-sized European Historic Towns) is a project funded by the European Commission under the Intelligent Energy Europe (IEE).

Mr. Jorge Aleixo (male) is a Civil engineer. In office since 1990 in the Municipality of Almada as a coach in the transit area. As an experienced technician in this area, followed the installation of various traffic lights systems in the municipality, and was responsible for maintenance of the systems for 12 years. Since 2007 exercises the functions of head of the traffic division and road safety. Has experience in the development and participation in EU-funded projects, like ENCLOSE (ENergy efficiency in City LOGistics Services for small and mid-sized European Historic Towns) is a project funded by the European Commission under the Intelligent Energy Europe (IEE).

Main relevant networks and experience in National and European Projects


Almada has been involved and active in several initiatives related to nature conservation and nature based planning and management. It has also been involved in several European Projects related to energy efficiency and sustainable development under several programs such as LIFE, Interreg, IEE, ICT-PSP, 7th Framework Program and H2020. The municipality is also a member of other international initiatives, such as Energy-Cities, ICLEI, the Mexico City Pact, Covenant of Mayors, World Mayors Council on Climate Change, EU Mayors Adapt, Durban Chart on Adaptation, Compact of Mayors and Climate Paris Agreement.

- **FLIPPER project - Flexible Transport Services and ICT platform for Eco-Mobility in urban and rural areas in Europe** (co-funded by INTERREG IVC), which aimed at the exchange of information and the development of flexible and on-demand transport services. Among the actions developed by the Almada City Council was a feasibility study for a flexible transportation service, training sessions and workshops. <http://www.interreg4cflipper.eu/>
- **EPTA project - European model for Public Transport Authority as a key factor leading to transport sustainability** (co-funded by INTERREG IVC). Through the EPTA project, a network of knowledge and exchange of experiences was created at European level, which promotes a better efficiency of urban collective transport and reinforces the competences of municipalities in the definition and coordination of the collective transport service in the territories under their management. <http://www.eptaproject.eu/>
- **ENCLOSE project - ENergy efficiency in City LOGistics Services for small e mid-sized European Historic Towns** (c-funded by the Intelligent Energy Europe Program). ENCLOSE aimed to provide the participating municipalities with the knowledge and tools to create advanced urban logistics systems in the city centers, based on the successful experience developed in the city of Lucca, Italy, one of the project partners. By demonstrating and assessing feasible and sustainable solutions it was possible to follower cities to develop and release SULP (Sustainable Urban Logistics Plans). <http://www.enclose.eu/>
- **RESOLVE Project - sustainable mobility and the transition to a low-carbon retailing economy** (co-funded by INTERREG Europe). The overall objective is to reduce carbon emissions created by retail related traffic in town and city centres while also supporting jobs and growth in the local retail economy. We will improve regional policies through innovative

new projects and by improving governance so that the different stakeholders can agree common solutions. <https://www.interregeurope.eu/resolve/>

Publications, services and patents related to the project

- Munzi, S.; Correia, O.; Silva, P.; Lopes, N.; Freitas, C.; Branquinho, C. & Pinho, P. 2014. Lichens as ecological indicators in urban areas: beyond the effects of pollutants”. Journal of Applied Ecology. 51(6), pp. 1750-1757.
- Santos, A; Santos-Reis, M.; Branquinho, C; Freitas, C. Lopes, N.; Pinto da Silva, P. 2015. Green Surge study on urban green infrastructure planning and governance in 20 european cities. Case study city portrait: Almada-Portugal. <http://greensurge.eu>.
- Pinho, P.; Correia, C.; Lecoq, M; Munzi, S. Vasconcelos, S.; Gonçalves, P.; Rebelo, R. ; Antunes, C; Silva, P.; Lopes, N.; Santos-Reis, M. & Branquinho, C. 2016. Evaluating green infrastructure in urban environments using a multi-taxa and functional diversity approach. Environmental Research. 147. Pág. 601– 610.
- Ecologic Institute, Berlin/Vienna; AEA group; ICLEI - Local Governments for Sustainability; European Secretariat Regional Environmental Center for Central and Eastern Europe (REC) 2011: Adaptation to Climate Change. Policy instruments for adaptation to climate change in big European cities and metropolitan areas: European Union Committee of the Regions. Case study 17: Almada. Contributions for EU study by AGENEAL and Municipality of Almada (João Cleto, Catarina Freitas and Carlos Sousa)
- Ecologic Institute, Berlin/Vienna; ICLEI - Local Governments for Sustainability; European Secretariat Regional Environmental Center for Central and Eastern Europe (REC) 2010: After Lisbon, the Role of Regional and Local Authorities in a New Strategy for Sustainable Growth and Better Jobs – Local Sustainable Energy Strategies: Opportunities and Challenges: European Union Committee of the Regions. Contributions for EU study by AGENEAL and Municipality of Almada (João Cleto, Catarina Freitas and Carlos Sousa)

Partner	Agencia Municipal de Energia de Almada			 <p>AGENEAL Agência Municipal de Energia de Almada</p>
Short Name	AGENEAL	Type	Energy Agency (private non-profit)	
Role	Validation Partner	Country	Portugal	
Website	www.ageneal.pt			

Brief Description

AGENEAL’s (Local Energy Management Agency of Almada) areas of activity cover energy efficiency in buildings, implementation of renewable energy systems, sustainable urban planning, sustainable mobility, energy efficiency in transports, and other energy efficiency in public equipment (street lighting, traffic lighting, etc.). The type of activity developed is suited to the objectives pursued by each project, which can be consultancy, awareness campaigns, advice on decision making, lobby, partnership in pilot projects, etc. In fact, the main goals of AGENEAL is the implementation of a sustainable energy policy in Almada, acting at a local level to improve energy efficiency in all sectors, to increase the market penetration of renewable energy sources, thereby to reduce dependence on environmentally damaging fossil fuels. The agency has 15 partners including the municipality, transport operators, university, national energy agency, national energy distributors among others, which makes it a privileged partner in actions within the municipality since it has been, since its creation, a local forum for energy efficiency with easy access to the main stakeholders in the territory. AGENEAL has been involved in a long strategy of promotion of sustainable mobility developed by the municipality and developed several local projects on mobility including eco-driving training, awareness raising, technical consultancy on fleet renewal, local cycling plan and territorial planning. Additionally, AGENEAL carries out several actions concerning energy efficiency and renewable energy sources in the built environment, for the execution of Almada City Council’s

“Yearly Energy Action Plan”. AGENEAL has also been an important actor, collaborator and consultant for the Local Climate Change Strategy and Almada’s Master Plan revision where climate change adaptation measures have been given a strong focus.

Main tasks and responsibilities within the project

AGENEAL will support the activities of Almada City Council within its responsibilities and role as a validation city in SPROUT in WP5 and WP6.

Principal Team Members involved in the project

Eng. Carlos Sousa (male) is a Mechanical Engineer and Director of AGENEAL. Since October 2000 Carlos Sousa was a senior expert at the local energy management agency of the Municipality of Almada, developing work in the promotion of energy efficiency, particularly in the transport sector and in the promotion of renewable energy forms. He worked as an elaborator of proposals for programs such as SAVE, ALTENER, LIFE and CIVITAS and for national support programs. He also carried out the execution and management of EU and national funded projects in the field of energy efficiency. He became a director of AGENEAL in 2004. Before 2000 he first worked as a Junior Technical Consultant and later as a Coordinator of the Transport Sector in CCE - Centro para a Conservação de Energia. He was a contact point for the Project Efficiency Indicators in Europe. He published several articles related to energy consumption and environmental impacts of the transport sector.

Eng. Pedro Gomes (male) is an Environmental Engineer and technical expert. In 2004, he started a research scholarship at the Air Quality Group of the Environmental Department at FCT/UNL, which is currently part of the Environmental assessment, monitoring and remediation Group of CENSE (Centre for Environmental and Sustainability Research) working with air pollution assessment, and air quality/climate change strategies, which includes the preparation of Air Quality Plans and Programs for the Region of Lisbon and Tagus Valley (according to Council Directives 96/62/EC and 2008/50/EC), the evaluation of the implementation of Lisbon’s Low Emission Zone, the National Strategy for Air Quality 2020, and the Portuguese Programme for Climate Change 2020. Since 2014, he has been employed in AGENEAL coordinating a European project in the fields of climate change, energy and sustainable mobility: “SMARTMOVE - Increasing peoples' awareness and use of public transport through active mobility consultancy with focus on feeder systems”, funded by IEE - Intelligent Energy Europe.

Main relevant networks and experience in National and European Projects


- **SMARTMOVE** - Increasing peoples' awareness and use of public transport through active mobility consultancy with focus on feeder systems, implementing “active mobility consultancy” (AMC) campaigns for PT lines and their feeder systems in eight rural and peripheral areas. Funded under the Intelligent Energy-Europe IEE programme. www.smartmove-project.eu/
- **SEGMENT - SEGmented Marketing for ENergy efficient Transport**. This project aims to test the technical use market segmentation to persuade people to change their behavior face to transport and to more efficient forms of travel. Funded under the Intelligent Energy-Europe IEE programme. <http://www.segmentproject.eu/>
- **ADDED VALUE - Information and Awareness Campaigns to Enhance the Effectiveness of Investments and Infrastructure Measures for Energy-Efficient Urban Transport**. This project was coordinated by AGENEAL. It aims to enhance the sustainable urban transport for infrastructure (soft modes or public transport), in order to maximize the benefits arising from their use. Funded under the Intelligent Energy-Europe IEE programme. www.eu-added-value.eu
- **BEST ENERGY - Built Environment Sustainability and Technology in Energy**. BEST

ENERGY project belongs to the ICT Policy Support Programme. The ICT Policy Support Programme (ICT PSP) under the Competitiveness and Innovation Programme (CIP) aims at stimulating innovation and competitiveness through the wider uptake and best use of ICT by citizens, governments and businesses, particularly Small and Medium-sized Enterprises. Funded by the Information and Communications Technologies - Policy Support Programme. www.bestenergyproject.eu

- **RELACS - REnewable energies for tourist ACcommodation Buildings**. The aim of this project was to engage and motivate a significant number of tourist units in Europe (5 per partner, for a total of about 50 participant units) - Hotels, Hostels , Campsites, etc. - and implement, at the building level and surrounding areas, measures of energy efficiency and use of renewable energy sources. Funded under the Intelligent Energy-Europe IEE programme. <http://www.relacs.eu/>

Publications, services and patents related to the project

- Freitas, C., Sousa, C.*, Lopes, N., Machado, P.. Tourist Destination Handling Climate Change: A Mediterranean Experience Article included in Advances in Global Change research 39, Local Governments and Climate Change, Sustainable Energy planning in Small and Medium Sized Communities, Springer, 2010
- Freitas, C.*, Machado, P., Sousa, C. Linking the Two Banks of the Tagus River by Integrating the Bicycle Into A Multimodal System, Velo-City Conference, 2005, Dublin
- Ecologic Institute, Berlin/Vienna; AEA group; ICLEI - Local Governments for Sustainability; European Secretariat Regional Environmental Center for Central and Eastern Europe (REC) 2011: Adaptation to Climate Change. Policy instruments for adaptation to climate change in big European cities and metropolitan areas: European Union Committee of the Regions. Case study 17: Almada. Contributions for EU study by AGENEAL and Municipality of Almada (João Cleto, Catarina Freitas and Carlos Sousa)
Ecologic Institute, Berlin/Vienna; ICLEI - Local Governments for Sustainability; European Secretariat Regional Environmental Center for Central and Eastern Europe (REC) 2010: After Lisbon, the Role of Regional and Local Authorities in a New Strategy for Sustainable Growth and Better Jobs – Local Sustainable Energy Strategies: Opportunities and Challenges: European Union Committee of the Regions. Contributions for EU study by AGENEAL and Municipality of Almada (João Cleto, Catarina Freitas and Carlos Sousa)

Partner	West Midlands Combined Authority			
Short Name	WMCA	Type	Public authority	
Role	Validation partner	Country	United Kingdom	
Website	www.wmca.org.uk			

Brief Description

West Midlands Combined Authority (WMCA) consists of 8 local authorities and four Local Enterprise Partnerships (LEPs) working together to move powers from Whitehall to the West Midlands and its locally elected politicians. The leadership of the WMCA comes from the Mayor and the leaders of the seven constituent local authorities. The leadership also includes the chairs of the Local Enterprise Partnerships (LEPs) which are business-led organisations that help build relationships between businesses and local authorities. Non-constituent authorities, which include the LEPs and ten local councils from across the wider West Midlands region, have reduced voting rights but play a crucial role at board level, helping to inform policy and drive forward the WMCA agenda. As part of the WMCA, Transport for West Midlands (TfWM) is working towards a fully-integrated transport network that helps our resident’s access work, education, and other services, enables business to grow and create jobs, and reduces congestion and the environmental impacts of traffic.

We are very keen to use research, innovation and data to inform our efforts to keep key transport services relevant and well-used, in the context of the many challenges that urban areas like theirs face around growth, inclusion, and well-being.

Main tasks and responsibilities within the project

WMCA will incorporate successful pilot tested policies as a 2nd layer (validation) city testing their feasibility under different cultural/behavioural/governance circumstances through the activities carried out in WP5 and WP6. They will establish the current urban mobility situation in the West Midlands through the quantitative information they hold and breaking this down by vulnerable user groups and intersectional aspects such as gender, age, social level, education, ethnic origin, family composition. They will identify the main drivers of urban mobility change (both demand- and supply-related) and the intensity with which they evolve and they will define cause/effect relationships between drivers & expected impacts of change in terms of economic, environmental and social sustainability. WMCA will look at West Midlands future scenarios for two time horizons (2025, 2030) attempting to define the expected impacts of the emerging transport solutions in economic, environmental & social terms (operational impacts) and documenting the policy impacts of the emerging transport solutions. WMCA will participate in defining a minimum set of data to drive evidence-based urban mobility policy making, customised to the data capabilities of both rich- and poor data environments and to design an urban mobility shared data space for both passenger and freight transport, as a blueprint for setting up an ecosystem-based mechanism to provide urban mobility data in a harmonised way and populate it with data from the project's partner cities, to deliver a multi-granular (big & small) data-driven approach to provide descriptive & predictive analytics for scanning weak signals (early indicators) of emerging urban mobility changes and to participate in training for city stakeholders in the policy decision-making process of deploying innovative urban mobility solutions.

Principal Team Members involved in the project

Mr. Chris Lane (male) is Head of Transport Innovation (TfWM). He leads all Transport Innovation at Transport for West Midlands (TfWM), specifically leading on Mobility as Service, delivering UK Central Connected and Autonomous Vehicle real-world testbed, open data information services and data innovations. He leads the enabling of third parties to solve transport problems with digital solutions whilst becoming successful businesses, a particular success being the introduction of Whim into the West Midlands on a commercial basis without the public sector needing to make any financial investment. He is also in charge of reaching the key objective to establish Mobility as a Service (MaaS) as a commercial going concern in the West Midlands, identify, develop and deliver a broad range of leading edge innovation initiatives, and accountable for passenger information across the West Midlands (paper & digital) and re-charging of commercial operators. Last but not least he is Director of Federated APIs – (TravelSpirit) - an openly governed community organization promoting and supporting Internet of Mobility products and services.

Mr. Andrew Page (male) is the Innovation Project Lead. He has an extensive experience in public transport operational services and having lead reviews on socially necessary transport and has led the work of the TfWM's technology incubator initiative over the last 3 years. The incubator works with small companies and start-ups to help them solve transport problems and become profitable businesses. He has supported key objective to establish Mobility as a Service (MaaS) as a commercial going concern in the West Midlands and has delivered a broad range of leading edge innovation initiatives. Finally, he has developed the West Midlands Electric Vehicle strategy and facilitated a cross sector group to deliver Electric vehicle Charging.

Main relevant networks and experience in National and European Projects


- **SUITS** (Sustainable Urban Integrated Transport Systems: Transferable tools for S-M local

authorities) aim is to substantially increase the capacity of Small-Medium local authorities to develop and implement sustainable, inclusive, integrated and accessible transport strategies, policies, technologies, practices, procedures, tools, measures and intelligent transport systems that recognize the end-to-end travel experiences of all users and freight.

- **The Mobility as a Service (MaaS) Alliance** is a public-private partnership creating the foundations for a common approach to MaaS, unlocking the economies of scale needed for successful implementation and take-up of MaaS in Europe and beyond. The main goal is to facilitate a single, open market and full deployment of MaaS services.
- **Innovation Engine** project is about Demand Driven Innovation, which means bringing challenges from large organisations to the attention of innovative local businesses. Because demand driven innovation responds to the “pull” of demand rather than the “push” of supply, it helps:
 - Customers adopt better products and services through the collaborative approach.
 - Creates novel solutions that make positive impacts on social and environmental problems.
 - Enables local businesses to reach new markets and build sustainable markets.
 - Not for Profit businesses and charities can deliver on their missions.
 - The Innovation Engine project is part funded by the European Regional Development Fund until the end of 2018.
- **Big Data Corridor** is a 3 year project running until late 2019 assisting SMEs in the Greater Birmingham and Solihull LEP to make the most of data driven innovation. Participation is free, all needed to commit is time and in return SMEs will receive expert support tailored to your individual requirements.

Publications, services and patents related to the project

- WMCA were the first UK City to introduce **Mobility as a Service (MaaS)** adopted from Helsinki Finland.
- **ITS-UK** – the UK association for the promotion of Intelligent Transport Systems (ITS), is a not-for-profit public/private sector association financed by members’ subscriptions, and provides a forum for all organisations concerned with ITS. ITS-UK offers economic efficiency, transport safety, and environmental benefits to the United Kingdom – and at the same time expand the ITS market. Intelligent Transport Systems: a combination of Information Technology and telecommunications, allowing the provision of on-line information in all areas of public and private administration. TfWM are active member of ITS-UK and participate in a number of special interest groups and have presented and led on a number of current ITS topics.

Partner	City of Minneapolis Department of Public Works			
Short Name	MPLS	Type	Public authority	
Role	Validation Partner. International Partner	Country	United States of America	
Website	http://www.minneapolismn.gov/publicworks/index.htm			

Brief Description

Minneapolis is the county seat of Hennepin County and the larger of the Twin Cities, the 16th-largest metropolitan area in the United States. As of 2017, Minneapolis is the largest city in the state of Minnesota and 45th-largest in the United States, with an estimated population of 422,331, the Twin Cities metropolitan area consists of Minneapolis, its neighbour Saint Paul, and suburbs which altogether contain about 3.6 million people, and is the second-largest economic centre in the Midwest. The Public Works Department strives to make Minneapolis a safe, liveable, and prosperous City by providing clean drinking water, surface water and sewer services, solid waste and recycling,

fleet services, and a connected multi-modal transportation system.

Main tasks and responsibilities within the project

The City of Minneapolis Department of Public Works will work as 2nd layer validators of the wider applicability of the pilot results and will actively participate in WP5 and WP6 activities. Also, this partner will contribute to the EU, US, China international cooperation agenda on urban mobility policy in T7.4.

Principal Team Members involved in the project

Mrs. Robin Hutcheson (female) is the Director of Public Works for the City of Minneapolis. Her work in Minneapolis focuses on leveraging public right of way investments for broader outcomes, particularly equity, in one of the most disparate Cities in the nation. Prior to her appointment in Minneapolis, Robin served as the Transportation Director for Salt Lake City, UT, where she implemented transportation projects of all types, including the revamping of the City’s parking and signal timing systems, the construction of the City’s first streetcar, numerous pedestrian safety projects, and the expansion of the City’s bicycling program.

Mrs. Kathleen Mayell (female) is a Transportation Planning Manager in the City of Minneapolis’ Public Works Department. She oversees transportation planning and policy initiatives for transportation programs across all modes. Major initiatives include creating Minneapolis’ 10-year Transportation Action Plan, developing the City’s Vision Zero program, collaborating with regional partners on transit projects citywide, and working in the smart cities realm. Throughout her career, Kathleen’s focus has been on improving public spaces to create more livable cities for people. She has experience working on long-range capital investment planning as the Investment Planning Director at MnDOT, working as a transportation and infrastructure planner in Somerville, MA, and doing public space consulting nation-wide while at Project for Public Spaces in New York City. Kathleen holds a Master of City Planning and Urban Design Certificate from the Massachusetts Institute of Technology and is a native of Minneapolis.

Mr. Josh Johnson (male) serves as the Assistant Parking Systems Manager for the Department of Public Works in the City of Minneapolis. In this role, Josh focuses on emerging mobility planning, operations, and policy, including shared, electric, connected and automated vehicles. Prior to his time with the City of Minneapolis, Josh was the General Manager for car2go Twin Cities, overseeing its operations throughout Minneapolis and St. Paul. He graduated from Minnesota State University with a Bachelor of Science degree in Business Management.

Main relevant networks and experience in National and European Projects

- Minneapolis is a member of the **National Association of City Transportation Officials (NACTO)**, a leading member organization advancing progressive transportation (www.nacto.org).
- **Smart Cities Collaborative** – Minneapolis has participated in Transportation for America’s Smart City Collaborative, a consortium of 24 cities that gather to discuss pressing transportation technology changes.

Publications, services and patents related to the project

- Minneapolis Public Works is in charge of all transportation functions within the City of Minneapolis, including Planning, Traffic, Parking, Design and Construction, and Maintenance
- Rapid changes in transportation mobility have necessitated an update to the City’s Transportation Action Plan, which is underway now.
- A chapter, entitled Advanced Mobility, will document recent changes in the City, and chart a

course for future actions related to shared mobility, automated vehicles, and other transportation technologies

- In particular, the City is rapidly responding to the sharing economy with completely new systems of docked and dock-less bike sharing, and recent adoption of ordinances and agreements that enable scooter sharing devices within the right of way. Additional study and measurement is needed to understand the effects of these mobility devices on overall travel and urban design.

Partner	Goteborgs kommun			 City of Gothenburg
Short Name	GOT	Type	Local authority	
Role	Validation Partner	Country	Sweden	
Website	www.goteborg.se			

Brief Description

The City of Gothenburg is a port city with a strategic location between Oslo and Copenhagen. It has a population of around 548 000 and is Sweden’s second largest city. It was classed by Forbes as the world’s 12th most inventive city in 2013. The Gothenburg region, which spans 13 municipalities in Greater Gothenburg, has a population of 1.1 million. The Gothenburg region is right at the epicentre of Scandinavia and the Baltic States, and the gateway to a market of 190 million people. 70 % of Scandinavia’s total industrial capacity is located within a 500-km radius of the Gothenburg region and 30% of Swedish foreign trade passes through the Port of Gothenburg. Traditionally an industrial city, Gothenburg lost its shipyards in the 1970 and thus became largely dependent on the local automotive industry as a large scale employer. The city now faces the challenge of replacing the waning industrial employment with new jobs in services, new high-tech enterprises and qualified jobs in the knowledge sector. Gothenburg has drawn up ambitious strategies for city development that aim to make it one of the most progressive cities in the world concerning climate impact, energy efficiency, mobility/logistics and social inclusion. The aim is that by 2050 the city will have a sustainable and ambitiously reduced level of carbon dioxide (CO2) emissions: the average level of CO2 equivalent emission per person in Gothenburg will have to be reduced to less than 2t per person for the goal to be reached. The city has adopted an interim target which states that by 2020 emission levels of CO2 will be reduced by at least 40 % compared to the levels in 1990. Gothenburg has signed the EU Covenant of Mayors and has committed to go beyond the objectives of EU energy policy. To foster international cooperation and innovation, the City of Gothenburg participates in many European networks and programmes; EUROCITIES, Climate-KIC (Europe’s largest public-private innovation partnership for climate change), the EIP Smart Cities and Communities, ERRIN, POLIS, LUCI and the European EIT Climate-KIC network. The City of Gothenburg within all administrations and companies, are member of totally 51 organizations. Six of the memberships are directly linked to the municipal government: EUROCITIES, Göteborg-Oslo cooperation, the Scandinavian arena, Cities for Children, ICLEI and the Mayors for Peace. In recent years, substantial effort has been put in to establish strategies for the development of the city in the years to come, including strategies towards 2035. These are four guiding documents: 1. Vision Älvstaden, 2. Traffic Strategy for a Close City 3. Green Strategy for a Dense, Green City and 4. Strategy for Gothenburg 2035 Expansion Planning - jointly indicate the direction Gothenburg will develop in over the next 20 years. Gothenburg will go from being a large town, to a green and close city, where nothing is far away.

Main tasks and responsibilities within the project

The City of Gothenburg will be a 2nd layer city in the project, mainly interested in following and validating the pilot of Padua. It will be actively involved in WP5 and WP6.

Principal Team Members involved in the project

Mrs. Michelle Coldrey (female) has worked as the International Project Coordinator at the Department of Development and International Affairs at the Urban Transport Administration, the City of Gothenburg, Sweden since March 2014. Michelle has many years of experience as a Project Manager of EU projects as well as coordinating and writing proposals for EU applications. She was coordinator of the [SMARTSET](#) project, an EC/IEE funded project which developed and showed how freight transport in European cities and regions can be made more energy-efficient and sustainable by a better use of freight terminals. SMARTSET provided examples of good practice that can support cities, regions and countries to contribute to the European Union '20-20-20' targets for reduction in carbon dioxide emissions and improvement in energy-efficiency (SMARTSET ended in June 2016). She has played an active role in the Urban Freight project NOVELOG.

Ms. Alexandra Bakosch (female) has been working as Project Leader in the Mobility unit since April 2018. Her responsibilities regard freight issues in urban areas and the use of waterways to ease congestion. She holds a M.SC in logistics and has many years of experience as a Project Manager within the maritime sector. Previous participation in EU projects includes NÖKS, Make a Difference, Pilot LNG and participation in final conference of CIVITAS.

Main relevant networks and experience in National and European Projects

- **NOVELOG** is an EU-funded project to increase our knowledge on urban deliveries and service trips. The aim is to help cities to implement effective and sustainable policies and facilitate cooperation to promote sustainable urban logistics. The project develops policies for the sump (Sustainable Urban Mobility Planning) in European cities. <http://novelog.eu/>
- **DenCity** developed innovative solutions for sustainable passenger and freight mobility in dense neighborhoods, with high standards of attractiveness, accessibility and sustainability. DenCity stands for radically new thinking and innovative processes for sustainable densification. DenCity is a collaborative project between industry, academia and society. The project was led by the Swedish national arena for collaboration within transport efficiency, CLOSER, at Lindholmen Science Park. <https://closer.lindholmen.se/en/projects-closer/density>
- **SMARTSET** was a European project working to develop sustainable business models to overcome existing market barriers. The project included a worked to coordinate freight in terminals outside the city center while also introducing electric vehicles, hybrid electric and CNG vehicles for deliveries in the last kms. This reduces emissions and congestion and the result is a more attractive urban environment. The aim was to increase the attractiveness of freight terminals and reduce energy consumption generated by goods transport in cities, in accordance with the EU's 2020 strategy. - <http://www.smartset-project.eu/>
- **SMARTSEND** was a project that created sustainable freight transports in urban areas. The innovative and sustainable solutions reduced the transports' impact on climate, noise levels and the health of those living in the city. The result was a more attractive and competitive city.
- **CIVITAS CATALYST**. Along with many cities in Europe and other participants joined the Urban Transport Administration in the project catalyst. The project aimed at sharing experience from previous projects linked to Civitas network and is based on the Urban Transport Administration in the previous project TELLUS and START. The project resulted in a response to the Green Paper on Urban Mobility, in which it highlighted the importance of urban freight transport where the green zones, eco-driving, the integration of freight and passenger transport are key factors. The result also consisted of an overview of good practice in the cities within the Green Zones, Consolidation Schemas and Clean Vehicles.

Publications, services and patents related to the project

- **Development Strategy Gothenburg 2035** (2014), Planning and Building Committee: http://international.goteborg.se/sites/international.goteborg.se/files/field_category_attachments/development_strategy_goteborg_2035.pdf
- **Climate Programme for Gothenburg** (2014): <http://www.e->

<p>magin.se/paper/kch0vmzg/paper/1</p> <ul style="list-style-type: none"> • Transport Strategy for a Close-Knit City (2014): Urban Transport Administration, reg. no. 0894/11, ISSN1103-1530 Commissioned by the City Executive Board, Gothenburg: https://goteborg.se/wps/wcm/connect/6c603463-f0b8-4fc9-9cd4-c1e934b41969/Trafikstrategi_eng_140821_web.pdf?MOD=AJPERES • Environmental Programme (2014): http://goteborg.se/wps/wcm/connect/566a56ae-6a4f-4813-a593-dd4474e76a46/City+of+Gothenburg+Environmental+Programme.pdf?MOD=AJPERES • RiverCity Gothenburg VISION (2012), adopted by the city council: http://alvstaden.goteborg.se/wp-content/uploads/2012/12/rivercity_vision_eng_web.pdf
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4.2. Third parties involved in the project (including use of third party resources)

The SPROUT partners are not expected to subcontract any tasks of the project by which there is no subcontracting budget. Only one partner (partner 18) has envisaged the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement).

In any case, the beneficiaries must base their contracts/subcontracts according to the principles for best value for money and absence of any conflict of interest (according to Articles 10, and 13 of AMGA). Beneficiaries that are ‘contracting authorities’ or ‘contracting entities’ (within the meaning of the EU public procurement Directives 2004/18/EC and 2004/17/EC or any EU legislation that replaces these Directives) must moreover comply with the applicable national law on public procurement.

Participant 1: ZLC

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No
Does the participant envisage that part of the work is performed by International Partners (Article 14a of the General Model Grant Agreement)?	Yes
<p>The City of Minneapolis (MPLS) is linked as International Partner under Article 14a of the General Model Grant Agreement to ZLC.</p> <p>MPLS will work as a 2nd layer validator city and will be involved in the following WPs and tasks:</p> <p>WP2 Understanding transition in urban mobility 0.5 PM. Involvement in T2.2 and T2.3.</p> <p>WP5 Formulating a city-led innovative policy response 2.5 PM. Involvement in T5.1, T5.2, and T5.3.</p> <p>WP6 Building cities’ policy making capacity 7.25 PM. Involvement in T6.1, T6.2, T6.3, and T6.4.</p> <p>WP7 Navigating future policy 1.50 PM. Involvement in T7.4.</p> <p>WP8 Project outcomes’ validation, transfer & exploitation 1 PM. Involvement in T8.3 and T8.7.</p> <p>WP9 Project Management 0.5 PM. Involvement in T9.4.</p>	

Participant 2: UPM

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No

Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No
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Participant 3: CERTH

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 4: VUB

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 5: POLIS

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 6: WI

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 7: VALENCIA

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 8: VPF

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 9: FGV

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 10: NSCIIC

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No
Does the participant envisage that part of the work is performed by International Partners (Article 14a of the General Model Grant Agreement)?	Yes

The Ningbo Municipal Commission of Commerce (NBCC) is linked as International Partner under Article 14a of the General Model Grant Agreement to NSCIIC.

NBCC will be involved in the following WPs and tasks:

WP2 Understanding transition in urban mobility 0.5 PM. Involvement in T2.2 and T2.3.

WP3 Determining the impacts of emerging urban mobility environments 1.75 PM. Involvement in T3.1, T3.2, T3.3, and T3.4.

WP4 Pilots' setup, running & testing 4.25 PM. Involvement in T4.2, T4.3, T4.4, and T4.5.

WP6 Building cities' policy making capacity 0.5 PM. Involvement in T6.2.

WP7 Navigating future policy 1.50 PM. Involvement in T7.4.

WP8 Project outcomes' validation, transfer & exploitation 1 PM. Involvement in T7.3 and T7.7.

WP9 Project Management 0.5 PM. Involvement in T9.4.

Participant 11: NBUT

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No

Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No
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Participant 12: BKK

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 13: BPKOZUT

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 14: CDPA

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 15: VIU

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 16: TLV

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 17: TECHNION

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	Yes
<p>The Beneficiary Technion – Israel Institute of Technology (“Technion”) will involve Technion Research & Development Foundation Ltd. (“TRDF”), in order to handle the financial and administrative aspects of the Technion’s involvement in the Action — including the tasks that include, among others, the employment and payment of personnel, purchase of equipment, or consumables that TRDF puts at disposal of Technion to carry out the work of the Action – with the aim to improve and rationalize the administrative and financial management of the Technion's externally funded research grants. The estimation of the costs budgeted for the in-kind contributions provided by TRDF to the Technion is € 99.476,00 which costs constitute an integral part of the total Technion budget in the Action. The in-kind contributions will be provided at the premises of Technion. Responsibility towards the EU lies fully with the Beneficiary Technion. TRDF will be providing such in-kind contributions to the Technion, under the provisions of Article 11 of the Grant Agreement.</p>	

Participant 18: ILIM

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 19: KALISZ

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 20: KALISZBIF

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 21: MOI

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
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Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 22: MECH

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 23: ARAD

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 24: HTB

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 25: IDFrance

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 26: CMA

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 27: AGENEAL

[814910] [SPROUT] – Part B

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 28: WMCA

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Participant 29: GOT

Do you plan to subcontract certain tasks (please note that core tasks of the action should not be sub-contracted)	No
Do you envisage that part of its work is performed by linked third parties	No
Do you envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	No

Table 4.2: Specification of Third Parties involved in SPROUT

5 | Ethics and Security

5.1 Ethics

5.1.1 Ethics requirements

The project will follow ethical guidelines as set out at the beginning of the project in Deliverables D1., D1.2 and D1.3 Ethics requirements as well as in the deliverables concerning the Data Management Plan (D9.4, D9.5, and D9.6). The Ethics framework will ensure compliance with ethical guidelines set out in the Horizon 2020 Regulation, Grant Agreement, EU legislation, European Research Code of Conduct for Research Integrity and National legislation. The partners will ensure that research will be carried out taking into account reliability, honesty, respect and accountability.

Ethical issues will be managed by the Project Coordinator acting as ethics supervisor ensuring that all activities and deliverables are in compliance with the EU, national and institutional ethics requirements. The Project Coordinator, in cooperation with the local Ethics and Data Protection Managers (the scientific partner in each 1st layer pilot city), will perform ethics and data protection internal audits to ensure compliance with the Ethics requirements and Data Management Plan.

5.1.2. Data management & data protection policies

National Data Protection authority or other related authorisation documents will be collected and kept by the coordinator (ZLC) by involved partners before the data collection phase. T9.3 Ethics requirements and data [814910] [SPROUT] – Part B

management include the development of initial (D9.4-M6). ZLC has experience related to data management since has managed these issues in the past in NEXT-NET project. ZLC will assign a specialised member of its team the Data Protection Officer's responsibilities in order to ensure that data collection and processing will be carried out according to EU and national legislation. Obligations of all partners related to Data management will be described in Deliverable D9.4. NDAs will be signed when necessary.

The consortium will discuss and make a collective decision, early in the project (M6) on the confidentiality level of the different datasets and the data governance mechanisms which will be respected throughout the project. The need and feasibility of anonymization of data will also be decided collectively. D9.6 (M6) will describe the level of confidentiality of different data sets.

Compliance with Legislation

With regard to the procedures that will be implemented for data collection, storage, protection, retention and destruction, SPROUT will conform to the relevant EU regulations and directives⁵⁵ (e.g. the Directive⁵⁶ on data collection and electronic communications and the Data Protection Directive) relating to the collection and storage of big data information⁵⁷, applying all possible means for the protection of privacy and ethics in personal data collection⁵⁸, processing and dissemination, such as the Privacy Enhancing Technologies (PETs)⁵⁹. We will pay a special attention to the General Data Protection Regulation (EU) 2016/679 ("GDPR") that is the regulation in EU law on data protection and privacy for all individuals within the European Union (EU) and the European Economic Area (EEA). It also addresses the export of personal data outside the EU and EEA areas.

Furthermore, article 19 "Ethical Principles" of Regulation 1291/2013⁶⁰ is primary to the SPROUT research. All the research and innovation activities carried under Horizon 2020 shall comply with ethical principles and relevant national, Union and international legislation, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols.

The following principles define the SPROUT approach:

- **Compliance with Legislation:** Any real data collected for research and demonstration purposes will be handled in accordance with the Data Protection legislation in the concerned countries and each company handling the data will be registered to handle this type of information with their data protection authority.
- **Use Limitation:** All information leading to person identities will be encrypted and protected according to EU best practices e.g. using reference numbers instead of actual names.

⁵⁵ http://www.law.cornell.edu/wex/inbox/european_legal_context_privacy_directives, Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, 2002 ePrivacy Directive.

⁵⁶ Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 on privacy and electronic communications.

⁵⁷ Privacy and Big Data, Terence Craig, Mary E. Ludloff Editor, Meghan Blanchette Editor Mike Loukides, Copyright © 2011 Mary E. Ludloff and Terence Craig, O'Reilly Media.

⁵⁸ **Data privacy:** Data privacy is the right of any individual to expect that his/her personal information directly or indirectly collected are processed securely and are not disseminated without their written consent. **Data protection:** Data protection is the framework of security measures designed to guarantee that data are handled in such a manner as to ensure that they are safe from unintended, unwanted or malevolent use. Data protection is the technical mechanism to ensure data privacy.

⁵⁹ http://europa.eu/rapid/press-release_MEMO-07-159_en.htm

⁶⁰ REGULATION (EU) No 1291/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) and repealing Decision No 1982/2006/EC.

- Security Safeguards: Personal data will be kept secure from potential abuse, during all required processing before storing, until personal identities are eliminated.
- Openness: All collection processes will be transparent on how data is collected, used, and shared.
- Accountability: SPROUT will be accountable to comply with all above principles.

Apart from the data generated by the SPROUT project itself, it will be necessary for the project partners to collect, process, and protect data:

- Personal data such as name and contact details and
- Data coming from cities. These would be related to urban population and economy, urban land use and accessibility, urban traffic, urban passenger and active transport characteristics, urban freight characteristics, etc.

The data collection will be part of the early project phase (“data collection”):

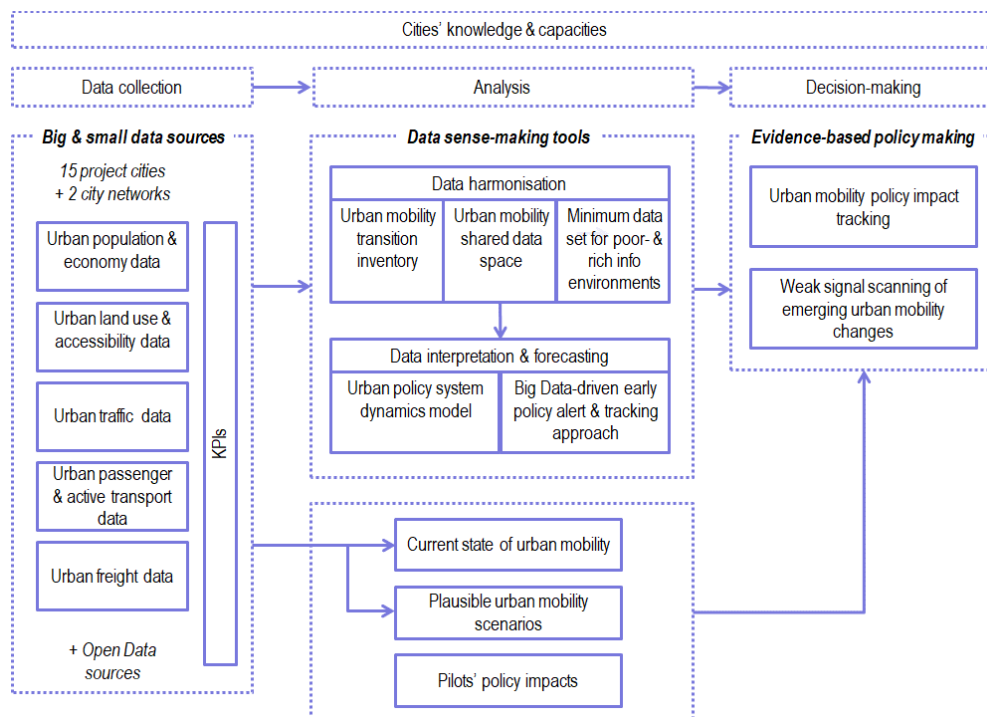


Figure 11 – SPROUT data collection process

Indeed, SPROUT follows a crowd-sourced participatory innovation approach, involving urban mobility policy makers, economic operators, and researchers in the form of an Open Innovation Community on Urban Mobility Policy.

This is therefore an interaction approach that uses, among others, methods based on participation and shared views of experts, focus groups and stakeholders, for instance in the form of scenario building workshops or the application of the Multi-Actor Multi-Criteria Analysis (MAMCA).

Secondary data will also be collected during the project execution period (through desk research, technology and innovation scanning, etc.).

The data sharing process will be arranged mainly using the project repository, but also through mail exchanges among the people involved. Public documents will be shared through the SPROUT website. Also the open access procedure will apply for scientific publications that will derive from the project.

Informed Consent Procedures

The project will exploit bid data sources; stakeholders (project partners, OIC members) are expected to be involved in scenarios monitored by the project's pilots. SPROUT will get informed consent from anyone participating in the pilot scenarios so that the purpose(s) for the data collection (Purpose Specification) are agreed. Moreover, data privacy preserving solutions will be developed to ensure that participating partners share information and data with the required level of security and privacy. More specifically, a set of an informed consent forms and an information sheet will be shared (distributed) to the living lab participants. This set of documents will be comprehensive and will contain at least the following:

1. The scope of research – purpose of personal data collection.
2. A description of the procedures to be followed and tests or measurements to be carried out.
3. Information about who is organising and funding the research.
4. A description of any reasonably foreseeable risk, discomfort or disadvantages.
5. A description of any benefits to the subject or to others which may reasonably be expected from the research avoiding inappropriate expectations.
6. A statement describing the procedures adopted for ensuring data protection/ confidentiality/privacy including duration of storage of personal data.
7. A reference to whom to contact for answers to questions about the research and research subjects' rights.
8. A statement offering to participants the opportunity to ask questions and to withdraw at any time from the research without consequences.
9. An explanation of what will happen with the data or samples at the end of the research period and if the data/ samples are retained or sent/sold to a third party for further research.
10. Information about what will happen to the results of the research.

Data collection and storage Procedures

SPROUT will encrypt and anonymise the data, in order to protect personal identities, and it will decisively not implement processing algorithms leading to “personally identifying” results. Each information sheet will be given a reference number and will not be tied to the subject (person giving the information). Information gathered may include confidential commercial information. Stored data will be complying with data protection principles but will include all the required information for the scope of this research. Additionally, SPROUT participants will:

- deny unauthorised persons to access the data-processing equipment used for processing the research datasets (equipment access control);
- prevent the unauthorised reading, copying, modification or removal of data media (data media control);
- ensure that persons authorised to use the data-processing system only have access to the data covered by their access authorisation (data access control).

Data will be stored at the Project repository, Website, and Social Networks. Additionally, personal data will be stored at project partners' servers and CRM systems.

For these purposes SPROUT will manage a dedicated contacts database and will ensure that personal contact details are not used elsewhere without specific agreement, thereby complying with data protection regulations.

The centre-piece legislation applicable to personal data processing activities carried out within the SPROUT project is the General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679). The regulation includes definitions, principles, legitimate basis for processing personal data, rights of data subjects and obligations of data controllers.

5.1.3. Rights of data subjects

EU data protection law recognises a number of subjective rights for data subjects, who are identified or a identifiable natural person. Upon request, SPROUT will provide information on the procedures that will be

implemented for data collection, storage, protection, retention and destruction; and confirmation that they comply with national and EU legislation:

- **Right to be informed** – according to art. 12 GDPR the controller shall take appropriate measures to provide any information „to the data subject in a concise, transparent, intelligible and easily accessible form, using clear and plain language, in particular for any information addressed specifically to a child. The information shall be provided in writing, or by other means, including, where appropriate, by electronic means.”
- **Right to access** – „the data subject shall have the right to obtain from the controller confirmation as to whether or not personal data concerning him or her are being processed, and where that is the case, access to the personal data...” (art.15 GDPR).
- **Right to rectification** – According to art. 16 „the data subject shall have the right to obtain from the controller without undue delay the rectification of inaccurate personal data concerning him or her. Taking into account the purposes of the processing, the data subject shall have the right to have incomplete personal data completed, including by means of providing a supplementary statement.”
- **Right to be forgotten** - The right to be forgotten (art. 17 GDPR) will grant the right to the data subject to have his personal data erased: *“The data subject shall have the right to obtain from the controller the erasure of personal data concerning him or her without undue delay and the controller shall have the obligation to erase personal data without undue delay”*. The provision has an apparent effect in online environment since search engines must remove search results upon the request of the individual. Although it will be a newly expressed right in the GDPR, due to the decision of the Google Spain case, it is also derivable from the Directive (European Court of Justice, Google case, 2012).
- **Right to data portability** – According to art. 20 „the data subject shall have the right to receive the personal data concerning him or her, which he or she has provided to a controller, in a structured, commonly used and machine-readable format and have the right to transmit those data to another controller without hindrance from the controller to which the personal data have been provided.”
- **Right to object** – Art. 21 elaborates on the right to object: „The data subject shall have the right to object, on grounds relating to his or her particular situation, at any time to processing of personal data concerning him or her.” Data subject has the right to object not only relating to his or her particular situation, but against profiling or direct marketing purposes as well.
- **Right to a judicial remedy and the right to receive compensation** - where the data subject considers that his or her rights under this Regulation have been infringed as a result of the processing of his or her personal data in non-compliance with this Regulation, he or she has the right to an effective judicial remedy and the right to receive compensation (art.79 GDPR).
- **The right to restriction of processing** - This right will be a new form of exercising data protection rights. Data subjects will be able to affect the extension of the data processing by claiming its restriction. Based on art. 18 (2) the conditions of restricted processing will be strict. Although it seems a technical solution, it will provide an interlocutory treatment of risk, while the data subjects decide the actual treatment.
- **Stakeholder engagement** - The Regulation also provides a platform for data subjects to be heard: Art. 35 (9) says the controllers shall seek the views of data subjects on the processing operation. The engagement of external stakeholders to the development phase has a pivotal role in impact assessments.

Obligations of data controllers

“Data-controller” is the natural or legal person, public authority, agency or any other body which alone or jointly with others determines the purposes and means of the processing of personal data. (art. 4 GDPR). With the GDPR, the European legislator has consolidated, in art. 24 (responsibility of the controller), the principle commonly referred to as the principle of accountability (article 5.2). The implementation of this principle falls on the shoulders of data controllers, who are under a series of obligations designed to *“ensure and be able to demonstrate that the processing of personal data is performed in compliance with this Regulation”*.

- **Record of processing activities** – The Regulation requires a detailed documentation about the processing operations conducted by the data controller and by the processor (if any). The maintenance of the record of the activities is crucial to e.g. respond to enquiries by data subjects. (art.13 and 14 GDPR).

- **Data Security Technical and organisational measures**– The controller shall implement appropriate technical and organisational measures to ensure a level of security appropriate to the risk (art. 32 GDPR). “In assessing the appropriate level of security account shall be taken in particular of the risks that are presented by processing, in particular from accidental or unlawful destruction, loss, alteration, unauthorised disclosure of, or access to personal data transmitted, stored or otherwise processed.” (art. 32.2 GDPR). According to the Article 29 Working Party, these technical measures should convert ‘the currently punctual requirements into a broader and consistent principle of privacy by design.’ (Art. 29 WP, 2009).
- **Personal data breach notification** –If a personal data breach occurs, the controller has to assess it and shall (in certain cases) notify the supervisory authority only or the data subjects as well (art.33 GDPR).
- **Transfer of data.** The general rule regarding the transfer of personal data across national borders is that it is permissible within the EU or with other countries outside EU that provide similar, adequate level of protection. Personal data, however, cannot be outsourced to third countries without the country having an adequate level of data protection and applying a set of EU standards and specifications.

The SPROUT coordinator shall act as data controller for the project.

It is expected that contacts with external stakeholders (besides project partners and 3rd layer cities) will be made either through:

1. Newly made contacts by partners at project workshops or events or at external events or conferences
2. Stakeholders that register themselves through an online tool at the project website for receiving news and updates on the project
3. Contacts from stakeholders that have been collected within previous activities or projects

In these cases informed consent for the usage of the contact details will be gained as follows:

1. Written informed consent given to the coordinator. The coordinator will take care to explicitly mention the purpose of the project and that contact details will be used to keep stakeholders informed or to invite them to project related events or activities
2. A text included in the project website explicitly explaining about the purpose of the project and the intended usage of the data for disseminating project related news and invitations to events and activities

Contacts will be inserted in the communication database only after receiving informed consent as explained above.

As the final result of the project will be in the form of public deliverables no sensitive data will be generated, shared or stored. In any case, the partners of the SPROUT project do not expect to collect sensitive data such as health data, sexual lifestyle, ethnicity or political opinion that would require the approval of the Ethics committee. The project however, in order to be able pay special attention to the needs of vulnerable groups and users with different cultural backgrounds taking into account gender issues and embed those special needs into its proposed city-led policy response, might need to collect gender data. For such data, (and also in the event that other sensitive data should be collected for the purpose of the project), the SPROUT Coordinator would request the Ethics committee for its formal approval prior to their collection. In any case, details on the procedures and criteria that will be used to identify/recruit research participants will be provided.

Clarifications for Ethics report:

“The consortium presents the measures to handle ethical issues, (pp. 77s). A Deliverable will be: D8.2 Ethics requirements and Data Management Plan. The Project Coordinator, in cooperation with the local Ethics and Data Protection Managers (the scientific partner in each 1st layer pilot city), will perform ethics and data protection internal audits to ensure compliance with the Ethics requirements and Data Management Plan. Nevertheless, it is too vague: “For these purposes SPROUT will manage a dedicated contacts database and will ensure that personal contact details are not used elsewhere without specific agreement, thereby complying with data protection regulations”. What might be this specific agreement?”

This is clarified previously on pages 140-141 and more specifically the subsections for Informed Consent Procedures and Data collection and storage Procedures.

“It is not said how the consortium will manage with vulnerable people.”

We anticipate that there will be a low risk when interacting with vulnerable peoples in the SPROUT project considering the type of information that the project would need. More specifically, one of the tasks of the Tel Aviv pilot involves vulnerable road users: Planning and applying traffic management strategies, particularly at intersections, supporting priorities among transport modes and vulnerable road users. They wish to gather information on vulnerable road users which will include their needs as individuals as well as interaction with other road users to prioritise their interests. To implement this task the project partners aim at using technologies to identify aids such as wheelchairs and baby strollers. All partner institutions working with vulnerable people will be required to ask participants to sign a consent form. If participants are unable to sign consent forms, we will provide alternative methods of obtaining consent (e.g. verbal consent with witness, recording etc.). We will largely collect non-personal information and will focus on the participants’ views related to their needs and problems with the means of urban transport. We will carefully avoid sensitive issues and if any personal information is given (although initially we do not plan to collect personal data) we will ensure that the opinions cannot be directly associated to individuals. All partners will also adhere to the data protection requirements.

The “post-grant ethics requirements” will be detailed in the work package 1 (Ethics requirements) deliverables in the following manner:

- *DI.1:*
 - A Data Protection Officer (DPO) and the contact details will be indicated.
 - Justification for the processing of sensitive personal data will be included.
 - Explanation on how all of the data that will be processed is relevant and limited to the purposes of the research project (in accordance with the ‘data minimisation ‘principle).
 - A description of the technical and organisational measures that will be implemented to safeguard the rights and freedoms of the data subjects/research participants.
 - A description of the security measures that will be implemented to prevent unauthorised access to personal data or the equipment used for processing.
 - Confirmation that transfers of personal data that will be transferred from the EU to a non-EU country or international organization (and vice-versa) are in accordance with Chapter V of the General Data Protection Regulation 2016/679 and comply with the laws of the country in which the data was collected.
 - Detailed information on the informed consent procedures in regard to data processing must be specified.

- *DI.2:*
 - The procedures and criteria that will be used to identify/recruit research participants.
 - The informed consent procedures that will be implemented for the participation of humans.
 - Templates of the informed consent/assent forms and information sheets (in language and terms intelligible to the participants).
 - Clarification that states if children and/or adults unable to give informed consent will be involved.
 - Clarification whether vulnerable individuals/groups will be involved, and the measures to protect them and minimise the risk of their stigmatisation.

- *DI.3:* Indications that ensure that the SPROUT research conducted outside the EU is legal in at least one EU Member State.

5.2 Security

SPROUT will not involve activities or results raising security issues nor 'EU-classified information' as background or results.

Overall, a holistic security approach will be undertaken to protect the 3 mains pillars of information security: confidentiality, integrity, and availability. The security approach will consist of a methodical assessment of security risks followed by an impact analysis. This analysis will be performed on the personal information and data processed.

Dual-use items, listed in Annex I and in Annex IV of Council Regulation No 428/2009, or dangerous materials and substances are not going to be used in the SPROUT project.

ANNEX I | Planned involvement of stakeholders

<p>T2.3. – M4 <u>Type:</u> Focus group discussions for the identification of urban mobility transition drivers <u>Objectives:</u> Definition of the specific transition drivers in the pilot and validation SPROUT cities <u>Location:</u> All pilot cities (6) and GA Assembly meeting location. <u>Participants:</u> Pilot cities: Local stakeholders led by the local research partner based on methodology provided by VUB. Validation cities: at a consortium meeting.</p>
<p>T3.1 – M6 <u>Type:</u> Cross-impact balance analysis for scenario building <u>Objectives:</u> Cross-impact balance analysis will be carried out, where all pairs of drivers will be evaluated in terms of their compatibility. A panel of local stakeholders will evaluate the consistency of the key drivers at a workshop using a qualitative judgement scale. <u>Location:</u> All pilot cities (6) <u>Participants:</u> Local stakeholders led by the local research partner based on methodology provided by VUB</p>
<p>T3.2& T3.3 – M8 <u>Type:</u> Expert consultation/interviews for sustainability and policy impact assessment <u>Objectives:</u> For each pilot city, the expected sustainability & policy impacts, of a realisation of the scenarios, will be assessed with the local experts <u>Location:</u> All pilot cities (6) <u>Participants:</u> Local stakeholders led by the local research partner based on methodology provided by VUB</p>
<p>T3.4 - M11 <u>Type:</u> Scenario validation workshop <u>Objectives:</u> The expected sustainability and policy impacts of the scenarios will be validated or revised by the local stakeholders during workshops to be undertaken in each pilot city. <u>Location:</u> All pilot cities (6) <u>Participants:</u> Local stakeholders led by the local research partner based on methodology provided by VUB</p>
<p>T4.4 – M18 <u>Type:</u> MAMCA consensus making workshop <u>Objectives:</u> The alternative policy responses will be prioritised per pilot, based on a multi-actor multi-criteria analysis (MAMCA) <u>Location:</u> All pilot cities (6) <u>Participants:</u> Local stakeholders led by the local research partner based on methodology provided by VUB</p>
<p>T4.5 – M20 <u>Type:</u> Local assessment workshops <u>Objectives:</u> Local stakeholder workshops will be used for the assessment of the urban mobility responses in each pilot city <u>Location:</u> All pilot cities (6) <u>Participants:</u> Local stakeholders led by the local research partner</p>
<p>T5.1 – M22 <u>Type:</u> Local Innovation Forum workshops <u>Objectives:</u> Validation in 2nd layer cities <u>Location:</u> All validation cities <u>Participants:</u> Local stakeholders led by city partner</p>
<p>T5.3 – M26 <u>Type:</u> SPROUT city-led innovative policy response Webinar <u>Objectives:</u> Validation of the city-led innovative policy response by 2nd layer cities and OIC <u>Location:</u> Online <u>Participants:</u> CERTH, ZLC, VUB, WI, validation cities, OIC members</p>

<p>T6.4 – M29, M33 <u>Type:</u> Workshop <u>Objectives:</u> Training on: (1) urban policy design, (2) policy coalition building and (3) policy governance. <u>Location:</u> Pilot locations <u>Participants:</u> Will be provided to the 1st, 2nd and 3rd layers of the project cities</p>
<p>T6.4 – M33 <u>Type:</u> E-learning courses <u>Objectives:</u> Training on early policy alert & action tracking; policy design, coalition & governance <u>Location:</u> Online (http://www.nuacampus.org/elearning/) <u>Participants:</u> City representatives and other stakeholders</p>
<p>T6.4 – M33 <u>Type:</u> Webinar <u>Objectives:</u> Training webinar <u>Location:</u> On-line <u>Participants:</u> Will be provided to. The webinars and the online course will be made available to the 1st, 2nd and 3rd layers of the project cities as well as other cities and interested stakeholders</p>
<p>T8.6 – M31 <u>Type:</u> US workshop <u>Objectives:</u> Workshop that addresses the US audience to transfer the SPROUT its results to US cities <u>Location:</u> US. Planned to be part of the TRB 2022 conference <u>Participants:</u> US stakeholders and especially city administrations.</p>
<p>T8.6 – M30 <u>Type:</u> China workshop <u>Objectives:</u> Workshop that addresses the Chinese audience to transfer the SPROUT its results to Chinese cities <u>Location:</u> China. Hosted by the Ningbo Supply Chain Innovation Institute China) <u>Participants:</u> Chinese stakeholders and especially city administrations.</p>
<p>T8.6 – M12, M24, M36 <u>Type:</u> OIC clinic at CIVITAS Forum <u>Objectives:</u> During the annual SPROUT event at the CIVITAS Forum, the IOC will open up to the world answering to challenges brought by cities and discussing with third level cities. <u>Location:</u> Workshop, CIVITAS forum host city <u>Participants:</u> OIC members, partner cities, 3rd level cities</p>
<p>T8.6 – M35 <u>Type:</u> Webinars to transfer the SPROUT results <u>Objectives:</u> Three webinars addressing the needs of local authorities and urban mobility innovation stakeholders. <u>Location:</u> Online. One webinar is to take place in each continent: Europe, USA, China <u>Participants:</u> Local stakeholders in Europe, China and the US.</p>

ESTIMATED BUDGET FOR THE ACTION

Estimated eligible ¹ costs (per budget category)										EU contribution			Additional information				
A. Direct personnel costs				B. Direct costs of subcontracting	[C. Direct costs of fin. support]	D. Other direct costs		E. Indirect costs ²	Total costs	Reimbursement rate %	Maximum EU contribution ³	Maximum grant amount ⁴	Information for indirect costs	Information for auditors	Other information:		
A.1 Employees (or equivalent)		A.4 SME owners without salary				D.1 Travel	D.5 Costs of internally invoiced goods and services						Estimated costs of in-kind contributions not used on premises	Declaration of costs under Point D.4	Estimated costs of beneficiaries/ linked third parties not receiving funding/ international partners		
A.2 Natural persons under direct contract		A.5 Beneficiaries that are natural persons without salary				D.2 Equipment		D.3 Other goods and services									
A.3 Seconded persons																	
[A.6 Personnel for providing access to research infrastructure]						[D.4 Costs of large research infrastructure]											
Form of costs ⁶	Actual	Unit ⁷	Unit ⁸		Actual	Actual	Actual	Unit ⁹	Flat-rate ¹⁰	h = 0,25 x (a + b + c + f + g + [i1] ¹³ + [i2] ¹³ - n)	j = a + b + c + d + [e] + f + g + h + [i1] + [i2]	k	l	m	n	Yes/No	
	a	Total b	No hours	Total c	d	[e]	f	Total g	25%								
1. ZLC	338 250.00	0.00	0.00	0.00	0.00	0.00	38 278.00	0.00	94 132.00		470 660.00	470 660.00	470 660.00	0.00	No	n/a	
- MPLS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	118 687.50	
Total beneficiary	338 250.00	0.00			0.00	0.00	38 278.00	0.00	94 132.00		470 660.00	470 660.00	470 660.00	n/a	n/a	118 687.50	
2. UPM	120 000.00	0.00	0.00	0.00	0.00	0.00	7 800.00	0.00	31 950.00		159 750.00	159 750.00	159 750.00	0.00	No	n/a	
3. CERTH	276 563.00	0.00	0.00	0.00	0.00	0.00	39 200.00	0.00	78 940.75		394 703.75	394 703.75	394 703.75	0.00	No	n/a	
4. VUB	324 816.00	0.00	0.00	0.00	0.00	0.00	27 417.00	0.00	88 058.25		440 291.25	440 291.25	440 291.25	0.00	No	n/a	
5. POLIS	149 600.00	0.00	0.00	0.00	0.00	0.00	47 600.00	0.00	49 300.00		246 500.00	246 500.00	246 500.00	0.00	No	n/a	
6. WI	223 904.00	0.00	0.00	0.00	0.00	0.00	49 200.00	0.00	68 276.00		341 380.00	341 380.00	341 380.00	0.00	No	n/a	
7. VALENCIA	33 000.00	0.00	0.00	0.00	0.00	0.00	6 500.00	0.00	9 875.00		49 375.00	49 375.00	49 375.00	0.00	No	n/a	
8. VPF	106 863.00	0.00	0.00	0.00	0.00	0.00	10 900.00	0.00	29 440.75		147 203.75	147 203.75	147 203.75	0.00	No	n/a	
9. FGV	53 813.00	0.00	0.00	0.00	0.00	0.00	6 500.00	0.00	15 078.25		75 391.25	75 391.25	75 391.25	0.00	No	n/a	
10. NSCHC ¹⁴	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	184 500.00	
- NBCC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	97 750.00	
Total beneficiary	0.00	0.00			0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	n/a	n/a	282 250.00	
11. NBUT ¹⁴	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	146 500.00	
12. BKK	69 000.00	0.00	0.00	0.00	0.00	0.00	8 600.00	0.00	19 400.00		97 000.00	97 000.00	97 000.00	0.00	No	n/a	
13. BPKOZUT	53 375.00	0.00	0.00	0.00	0.00	0.00	5 200.00	0.00	14 643.75		73 218.75	73 218.75	73 218.75	0.00	No	n/a	
14. CDPA	75 706.00	0.00	0.00	0.00	0.00	0.00	6 500.00	0.00	20 551.50		102 757.50	102 757.50	102 757.50	0.00	No	n/a	
15. VIU	101 672.00	0.00	0.00	0.00	0.00	0.00	9 900.00	0.00	27 893.00		139 465.00	139 465.00	139 465.00	0.00	No	n/a	
16. TLV	89 975.00	0.00	0.00	0.00	0.00	0.00	13 900.00	0.00	25 968.75		129 843.75	129 843.75	129 843.75	0.00	No	n/a	
17. TECHNION	101 175.00	0.00	0.00	0.00	0.00	0.00	10 500.00	0.00	27 918.75		139 593.75	139 593.75	139 593.75	0.00	No	n/a	
18. ILiM	76 500.00	0.00	0.00	0.00	0.00	0.00	13 500.00	0.00	22 500.00		112 500.00	112 500.00	112 500.00	0.00	No	n/a	
19. KALISZ	22 875.00	0.00	0.00	0.00	0.00	0.00	10 900.00	0.00	8 443.75		42 218.75	42 218.75	42 218.75	0.00	No	n/a	
20. KALISZBIF	15 600.00	0.00	0.00	0.00	0.00	0.00	6 500.00	0.00	5 525.00		27 625.00	27 625.00	27 625.00	0.00	No	n/a	
21. MoI	25 500.00	0.00	0.00	0.00	0.00	0.00	8 300.00	0.00	8 450.00		42 250.00	42 250.00	42 250.00	0.00	No	n/a	
22. MECH	61 875.00	0.00	0.00	0.00	0.00	0.00	8 300.00	0.00	17 543.75		87 718.75	87 718.75	87 718.75	0.00	No	n/a	
23. ARAD	16 448.00	0.00	0.00	0.00	0.00	0.00	8 300.00	0.00	6 187.00		30 935.00	30 935.00	30 935.00	0.00	No	n/a	
24. HTB	141 750.00	0.00	0.00	0.00	0.00	0.00	8 300.00	0.00	37 512.50		187 562.50	187 562.50	187 562.50	0.00	No	n/a	
25. IDFrance	40 800.00	0.00	0.00	0.00	0.00	0.00	8 300.00	0.00	12 275.00		61 375.00	61 375.00	61 375.00	0.00	No	n/a	
26. CMA	21 750.00	0.00	0.00	0.00	0.00	0.00	10 500.00	0.00	8 062.50		40 312.50	40 312.50	40 312.50	0.00	No	n/a	
27. AGENEAL	20 250.00	0.00	0.00	0.00	0.00	0.00	10 000.00	0.00	7 562.50		37 812.50	37 812.50	37 812.50	0.00	No	n/a	
28. WMCA	60 413.00	0.00	0.00	0.00	0.00	0.00	8 300.00	0.00	17 178.25		85 891.25	85 891.25	85 891.25	0.00	No	n/a	
29. GOT	73 125.00	0.00	0.00	0.00	0.00	0.00	8 300.00	0.00	20 356.25		101 781.25	101 781.25	101 781.25	0.00	No	n/a	

ESTIMATED BUDGET FOR THE ACTION

Estimated eligible ¹ costs (per budget category)										EU contribution			Additional information		
A. Direct personnel costs				B. Direct costs of subcontracting	[C. Direct costs of fin. support]	D. Other direct costs		E. Indirect costs ²	Total costs	Reimbursement rate %	Maximum EU contribution ³	Maximum grant amount ⁴	Information for indirect costs	Information for auditors	Other information:
A.1 Employees (or equivalent)		A.4 SME owners without salary				D.1 Travel	D.5 Costs of internally invoiced goods and services						Estimated costs of in-kind contributions not used on premises	Declaration of costs under Point D.4	Estimated costs of beneficiaries/ linked third parties not receiving funding/ international partners
A.2 Natural persons under direct contract		A.5 Beneficiaries that are natural persons without salary				D.2 Equipment									
A.3 Seconded persons						D.3 Other goods and services									
[A.6 Personnel for providing access to research infrastructure]						[D.4 Costs of large research infrastructure]									
Form of costs ⁶	Actual	Unit ⁷	Unit ⁸		Actual	Actual	Actual	Unit ⁹	Flat-rate ¹⁰						
	a	Total b	No hours	Total c	d	[e]	f	Total g	25%	h = 0,25 x (a + b + c + f + g + [i1] ¹³ + [i2] ¹³ - n)	j = a + b + c + d + [e] + f + g + h + [i1] + [i2]	k	l	m	n
Total consortium	2 694 598.00	0.00		0.00	0.00	0.00	397 495.00	0.00	773 023.25		3 865 116.25		3 865 116.25		547 437.50

¹ See Article 6 for the eligibility conditions.

² Indirect costs already covered by an operating grant (received under any EU or Euratom funding programme; see Article 6.5.(b)) are ineligible under the GA. Therefore, a beneficiary/linked third party that receives an operating grant during the action's duration cannot declare indirect costs for the year(s)/reporting period(s) covered by the operating grant, unless it can demonstrate that the operating grant does not cover any costs of the action (see Article 6.2.E).

³ This is the theoretical amount of EU contribution that the system calculates automatically (by multiplying all the budgeted costs by the reimbursement rate). This theoretical amount is capped by the 'maximum grant amount' (that the Agency decided to grant for the action) (see Article 5.1).

⁴ The 'maximum grant amount' is the maximum grant amount decided by the Agency. It normally corresponds to the requested grant, but may be lower.

⁵ Depending on its type, this specific cost category will or will not cover indirect costs. Specific unit costs that include indirect costs are: costs for energy efficiency measures in buildings, access costs for providing trans-national access to research infrastructure and costs for clinical studies.

⁶ See Article 5 for the forms of costs.

⁷ Unit : hours worked on the action; costs per unit (hourly rate) : calculated according to the beneficiary's usual accounting practice.

⁸ See Annex 2a 'Additional information on the estimated budget' for the details (costs per hour (hourly rate)).

⁹ Unit and costs per unit : calculated according to the beneficiary's usual accounting practices.

¹⁰ Flat rate : 25% of eligible direct costs, from which are excluded: direct costs of subcontracting, costs of in-kind contributions not used on premises, direct costs of financial support, and unit costs declared under budget category F if they include indirect costs (see Article 6.2.E).

¹¹ See Annex 2a 'Additional information on the estimated budget' for the details (units, costs per unit).

¹² See Annex 2a 'Additional information on the estimated budget' for the details (units, costs per unit, estimated number of units, etc).

¹³ Only specific unit costs that do not include indirect costs.

¹⁴ See Article 9 for beneficiaries not receiving funding.

¹⁵ Only for linked third parties that receive funding.

ANNEX 2a

ADDITIONAL INFORMATION ON THE ESTIMATED BUDGET

- Instructions and footnotes in blue will not appear in the text generated by the IT system (since they are internal instructions only).
- For options [in square brackets]: the applicable option will be chosen by the IT system. Options not chosen will automatically not appear.
- For fields in [grey in square brackets] (even if they are part of an option as specified in the previous item): IT system will enter the appropriate data.

⚠ Transitory period: Until SyGMA fully supports Annex 2a, you must prepare it manually (using this template by choosing and deleting the options/entering the appropriate data).
For the 'unit cost tables': either fill them out manually or use currently existing tables from Annex 1 or the proposal.
The document can then be uploaded in SyGMA and attached to the grant agreement.

Unit cost for SME owners/natural beneficiaries without salary

1. Costs for a [SME owner]/[beneficiary that is a natural person] not receiving a salary

Units: hours worked on the action

Amount per unit ('hourly rate'): calculated according to the following formula:

{ the monthly living allowance for researchers in MSCA-IF actions / 143 hours }
multiplied by
{ country-specific correction coefficient of the country where the beneficiary is established }

The monthly living allowance and the country-specific correction coefficients are set out in the Work Programme (section 3 MSCA) in force at the time of the call:

- for calls *before* Work Programme 2018-2020:
 - for the monthly living allowance: **EUR 4 650**
 - for the country-specific correction coefficients: see Work Programme 2014-2015 and Work Programme 2016-2017 (available on the [Participant Portal Reference Documents](#) page)
- for calls *under* Work Programme 2018-2020:
 - for the monthly living allowance: **EUR 4 880**
 - for the country-specific correction coefficients: see Work Programme 2018-2020 (available on the [Participant Portal Reference Documents](#) page)

[additional OPTION for beneficiaries/linked third parties that have opted to use the unit cost (in the proposal/with an amendment): For the following beneficiaries/linked third parties, the amounts per unit (hourly rate) are fixed as follows:

- beneficiary/linked third party [short name]: EUR [insert amount]
 - beneficiary/linked third party [short name]: EUR [insert amount]
- [same for other beneficiaries/linked third parties, if necessary]]

Estimated number of units: see Annex 2

Energy efficiency measures unit cost

2. Costs for energy efficiency measures in buildings

Unit: m² of eligible 'conditioned' (i.e. built or refurbished) floor area

Amount per unit*: see (for each beneficiary/linked third party and BEST table) the 'unit cost table' attached

* Amount calculated as follows:
{EUR 0.1 x estimated total kWh saved per m² per year x 10}

Estimated number of units: see (for each beneficiary/linked third party and BEST table) the 'unit cost table' attached

Unit cost table (energy efficiency measures unit cost)¹

Short name beneficiary/linked third party	BEST No	Amount per unit	Estimated No of units	Total unit cost (cost per unit x estimated no of units)

¹ Data from the 'building energy specification table (BEST)' that is part of the proposal and Annex 1.

H2020 Templates: Annex 2a (Additional information on the estimated budget)

Research infrastructure unit cost

3. Access costs for providing trans-national access to research infrastructure

Units²: see (for each access provider and installation) the ‘unit cost table’ attached

Amount per unit^{*}: see (for each access provider and installation) the ‘unit cost table’ attached

* Amount calculated as follows:

$$\frac{\text{average annual total access cost to the installation (over past two years}^3)}{\text{average annual total quantity of access to the installation (over past two years}^4)}$$

Estimated number of units: see (for each access provider and installation) the ‘unit cost table’ attached

Unit cost table (access to research infrastructure unit cost)⁵

Short name access provider	Short name infrastructure	Installation		Unit of access	Amount per unit	Estimated No of units	Total unit cost (cost per unit x estimated no of units)
		No	Short name				

Clinical studies unit cost

4. Costs for clinical studies

Units: patients/subjects that participate in the clinical study

Amount per unit^{*}: see (for each sequence (if any), clinical study and beneficiary/linked third party) the ‘unit cost table’ attached

* Amount calculated, for the cost components of each task, as follows:

For **personnel costs**:

For personnel costs of doctors: ‘average hourly cost for doctors’, i.e.:

$$\frac{\{\text{certified or auditable total personnel costs for doctors for year N-1}\}}{\{1720 * \text{number of full-time-equivalent for doctors for year N-1}\}} \text{ multiplied by estimated number of hours to be worked by doctors for the task (per participant)}$$

For personnel costs of other medical personnel: ‘average hourly cost for other medical personnel’, i.e.:

$$\frac{\{\text{certified or auditable total personnel costs for other medical personnel for year N-1}\}}{\{1720 * \text{number of full-time-equivalent for other medical personnel for year N-1}\}}$$

² Unit of access (e.g. beam hours, weeks of access, sample analysis) fixed by the access provider in proposal.

³ In exceptional and duly justified cases, the Commission/Agency may agree to a different reference period.

⁴ In exceptional and duly justified cases, the Commission/Agency may agree to a different reference period.

⁵ Data from the ‘table on estimated costs/quantity of access to be provided’ that is part of the proposal and Annex 1.

H2020 Templates: Annex 2a (Additional information on the estimated budget)

multiplied by
estimated number of hours to be worked by other medical personnel for the task (per participant)}

For personnel costs of technical personnel: ‘average hourly cost for technical personnel’, i.e.:

$$\frac{\{\text{certified or auditable total personnel costs for technical personnel for year N-1}\}}{\{1720 * \text{number of full-time-equivalent for technical personnel for year N-1}\}}$$

multiplied by
estimated number of hours to be worked by technical personnel for the task (per participant)}

‘total personnel costs’ means actual salaries + actual social security contributions + actual taxes and other costs included in the remuneration, provided they arise from national law or the employment contract/equivalent appointing act

For **consumables**:

For each cost item: ‘average price of the consumable’, i.e.:

$$\frac{\{\{\text{certified or auditable total costs of purchase of the consumable in year N-1}\}\}}{\text{total number of items purchased in year N-1}}$$

multiplied by
estimated number of items to be used for the task (per participant)}

‘total costs of purchase of the consumable’ means total value of the supply contracts (including related duties, taxes and charges such as non-deductible VAT) concluded by the beneficiary for the consumable delivered in year N-1, provided the contracts were awarded according to the principle of best value- for-money and without any conflict of interests

For **medical equipment**:

For each cost item: ‘average cost of depreciation and directly related services per unit of use’, i.e.:

$$\frac{\{\{\text{certified or auditable total depreciation costs in year N-1} + \text{certified or auditable total costs of purchase of services in year N-1 for the category of equipment concerned}\}\}}{\text{total capacity in year N-1}}$$

multiplied by
estimated number of units of use of the equipment for the task (per participant)}

‘total depreciation costs’ means total depreciation allowances as recorded in the beneficiary’s accounts of year N-1 for the category of equipment concerned, provided the equipment was purchased according to the principle of best value for money and without any conflict of interests + total costs of renting or leasing contracts (including related duties, taxes and charges such as non-deductible VAT) in year N-1 for the category of equipment concerned, provided they do not exceed the depreciation costs of similar equipment and do not include finance fees

For **services**:

For each cost item: ‘average cost of the service per study participant’, i.e.:

$$\frac{\{\text{certified or auditable total costs of purchase of the service in year N-1}\}}{\text{total number of patients or subjects included in the clinical studies for which the service was delivered in year N-1}}$$

‘total costs of purchase of the service’ means total value of the contracts concluded by the beneficiary (including related duties, taxes and charges such as non-deductible VAT) for the specific service delivered in year N-1 for the conduct of clinical studies, provided the contracts were awarded according to the principle of best value for money and without any conflict of interests

For **indirect costs**:

$$\{\{\{\text{cost component ‘personnel costs’} + \text{cost component ‘consumables’} + \text{cost component ‘medical equipment’}\}\}$$

minus

$$\{\text{costs of in-kind contributions provided by third parties which are not used on the beneficiary’s premises} + \text{costs of providing financial support to third parties (if any)}\}$$

multiplied by

$$25\% \}$$

H2020 Templates: Annex 2a (Additional information on the estimated budget)

The estimation of the resources to be used must be done on the basis of the study protocol and must be the same for all beneficiaries/linked third parties/third parties involved.

The year N-1 to be used is the last closed financial year at the time of submission of the grant application.

Estimated number of units: see (for each clinical study and beneficiary/linked third party) the ‘unit cost table’ attached

Unit cost table: clinical studies unit cost⁶

Task, Direct cost categories	Resource per patient	Costs year N-1 Beneficiary 1 [short name]	Costs year N-1 Linked third party 1a [short name]	Costs year N-1 Beneficiary 2 [short name]	Costs year N-1 Linked third party 2a [short name]	Costs year N-1 Third party giving in-kind contributions 1 [short name]
Sequence No. 1						
Task No. 1 Blood sample						
(a) Personnel costs: - Doctors	n/a					
- Other Medical Personnel	Phlebotomy (nurse), 10 minutes	8,33 EUR	11,59 EUR	10,30 EUR	11,00 EUR	9,49 EUR
- Technical Personnel	Sample Processing (lab technician), 15 minutes	9,51 EUR	15,68 EUR	14,60 EUR	15,23 EUR	10,78 EUR
(b) Costs of consumables:	Syringe	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	Cannula	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	Blood container	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(c) Costs of medical equipment:	Use of -80° deep freezer, 60 days	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	Use of centrifuge, 15 minutes	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(d) Costs of services	Cleaning of XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(e) Indirect costs (25% flat-rate)		XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
Task No. 2						
...						
Amount per unit (unit cost sequence 1):		XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
Sequence No. 2						
Task No. 1						

⁶ Same table as in proposal and Annex 1.

H2020 Templates: Annex 2a (Additional information on the estimated budget)

XXX						
(a) Personnel costs:						
- Doctors	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
- Other Medical Personnel	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
- Technical Personnel	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(b) Costs of consumables:	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(c) Costs of medical equipment:	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(d) Costs of services	XXX	XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
(e) Indirect costs (25% flat-rate)		XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
Task No. 2						
...						
Amount per unit (unit cost sequence 2):		XX EUR	XX EUR	XX EUR	XX EUR	XX EUR
...						
Amount per unit (unit cost entire study):		XX EUR	XX EUR	XX EUR	XX EUR	XX EUR

ACCESSION FORM FOR BENEFICIARIES

UNIVERSIDAD POLITECNICA DE MADRID (UPM), established in CALLE RAMIRO DE MAEZTU 7 EDIFICIO RECTORADO, MADRID 28040, Spain, VAT number: ESQ2818015F, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('2')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS (CERTH), established in CHARILAOU THERMI ROAD 6 KM, THERMI THESSALONIKI 57001, Greece, VAT number: EL099785242, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('3')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER and the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

VRIJE UNIVERSITEIT BRUSSEL (VUB), established in PLEINLAAN 2, BRUSSEL 1050, Belgium, VAT number: BE0449012406, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('4')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

POLIS - PROMOTION OF OPERATIONAL LINKS WITH INTEGRATED SERVICES, ASSOCIATION INTERNATIONALE (POLIS), established in rue du Trône 98, BRUXELLES 1050, Belgium, VAT number: BE460400701, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('5')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

WUPPERTAL INSTITUT FUR KLIMA, UMWELT, ENERGIE GMBH (WI), established in DOPPERSBERG 19, WUPPERTAL 42103, Germany, VAT number: DE121091633, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('6')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

AYUNTAMIENTO DE VALENCIA (VALENCIA), established in PLAZA AYUNTAMIENTO 1, VALENCIA 46002, Spain, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('7')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

FUNDACION DE LA COMUNIDAD VALENCIANA PARA LA INVESTIGACION, PROMOCION Y ESTUDIOS COMERCIALES DE VALENCIAPORT (VPF), established in Avenida Muelle del Turia s/n, VALENCIA 46024, Spain, VAT number: ESG97360325, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('8')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

FERROCARRILS DE LA GENERALITAT VALENCIANA (FGV), established in PARTIDA DE XIRIVELLETA, S/N, VALENCIA 46014, Spain, VAT number: ESQ9650001B, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('9')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

NINGBO SUPPLY CHAIN INNOVATION INSTITUT CHINA (NSCIIC), established in 462 WENYUAN ROAD, NINGBO 315100, China (People's Republic of), VAT number: CN52330200MJ8949738F, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('10')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

NINGBO UNIVERSITY OF TECHNOLOGY (NBUT), established in FENGHUA ROAD 201, NINGBO 315211, China (People's Republic of), ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('11')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

BKK BUDAPESTI KOZLEKEDESI KOZPONT ZARTKORUEN MUKODO RESZVENYTARSASAG (BKK), established in RUMBACH SEBESTYEN UTCA 19-21, BUDAPEST 1075, Hungary, VAT number: HU17781372, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('12')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

BUDAPEST KOZUT ZARTKORUEN MUKODO RESZVENYTARSASAG (BPKOZUT), established in BANK BAN U 8-12, BUDAPEST 1115, Hungary, VAT number: HU23501894, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('13')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

COMUNE DI PADOVA (CDPA), established in VIA DEL MUNICIPIO 1 PALAZZO MORONI, PADOVA 35122, Italy, VAT number: IT00644060287, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('14')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

VENICE INTERNATIONAL UNIVERSITY (VIU), established in ISOLA DI SAN SERVOLO, VENEZIA 30122, Italy, VAT number: IT02928970272, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('15')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

TEL AVIV YAFO MUNICIPALITY (TLV), established in IBN GVIROL STREET 69, TEL AVIV 64162, Israel, VAT number: IL500250006, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('16')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY (TECHNION), established in SENATE BUILDING TECHNION CITY, HAIFA 32000, Israel, VAT number: IL557585585, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('17')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

INSTYTUT LOGISTYKI I MAGAZYNOWANIA (ILiM), established in UL ESTKOWSKIEGO 6, POZNAN 61-755, Poland, VAT number: PL7770020410, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('18')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

MIASTO KALISZ (KALISZ), established in GLOWNY RYNEK 20, KALISZ 62 800, Poland, VAT number: PL6180015933, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('19')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER and the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

FUNDACJA KALISKI INKUBATOR PRZEDSIE BIORCZOSCI (KALISZBIF), established in UL. CZESTOCHOWSKA 25, KALISZ 62 800, Poland, VAT number: PL6181003820, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('20')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

MUNICIPALITY OF IOANNINA (MoI), established in ANDREA PAPANDREOU SQUARE 5, IOANNINA 45221, Greece, VAT number: EL997908926, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('21')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

STAD MECHELEN (MECH), established in GROTE MARKT 21, MECHELEN 2800, Belgium, VAT number: BE0207499430, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('22')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

MUNICIPIUL ARAD (ARAD), established in BD REVOLUTIEI 75, ARAD 2900, Romania, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('23')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

GEMEENTE 'S-HERTOGENBOSCH (HTB), established in WOLVENHOEK 1, SHERTOGENBOSCH 5211 HH, Netherlands, VAT number: NL001709124B01, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('24')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

REGION ILE DE FRANCE (IDFrance), established in 33 rue Barbet de Jouy, Paris 75007, France, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('25')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

CAMARA MUNICIPAL DE ALMADA (CMA), established in LARGO LUIS DE CAMOES, ALMADA 2800-159, Portugal, VAT number: PT500051054, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('26')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

AGENCIA MUNICIPAL DE ENERGIA DE ALMADA (AGENEAL), established in BERNARDO FRANCISCO DA COSTA 44, ALMADA 2800-029, Portugal, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('27')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

WEST MIDLANDS COMBINED AUTHORITY (WMCA), established in 16 SUMMER LANE, BIRMINGHAM B193SD, United Kingdom, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('28')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ACCESSION FORM FOR BENEFICIARIES

GOTEBORGS KOMMUN (GOT), established in POSTGATAN 4, GOTEBORG 411 13, Sweden, VAT number: SE212000135501, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become beneficiary No ('29')

in Grant Agreement No 814910 ('the Agreement')

between FUNDACION ZARAGOZA LOGISTICS CENTER **and** the Innovation and Networks Executive Agency (INEA) ('the Agency'), under the powers delegated by the European Commission ('the Commission'),

for the action entitled 'Sustainable Policy RespOnse to Urban mobility Transition (SPROUT)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement it in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

FINANCIAL STATEMENT FOR [BENEFICIARY [name]/ LINKED THIRD PARTY [name]] FOR REPORTING PERIOD [reporting period]

Eligible ¹ costs (per budget category)											Receipts		EU contribution			Additional information				
A. Direct personnel costs		B. Direct costs of subcontracting	[C. Direct costs of fin. support]		D. Other direct costs			E. Indirect costs ²	[F. Costs of ...]		Total costs	Receipts	Reimbursement rate %	Maximum EU contribution ³	Requested EU contribution		Information for indirect costs : Costs of in-kind contributions not used on premises			
Form of costs ⁴	Actual	Unit	Unit		Actual	Actual	Actual	Actual	Unit	Flat-rate ⁵	Unit	[Unit][Lump sum]	Receipts of the action, to be reported in the last reporting period, according to Article 5.3.3							
			No hours	Total c						25%										
	a	Total b	No hours	Total c	d	[e]	f	[g]	Total h	$i = 0,25 \times (a+b+c+f+[g] + h + [j1]^{6} + [j2]^{6} - p)$	No units	Total [j1]	Total [j2]	$k = a+b+c+d+[e] + f + [g] + h + i + [j1] + [j2]$	l	m	n	o	p	
[short name beneficiary/linked third party]																				

The beneficiary/linked third party hereby confirms that:
 The information provided is complete, reliable and true.
 The costs declared are eligible (see Article 6).
 The costs can be substantiated by adequate records and supporting documentation that will be produced upon request or in the context of checks, reviews, audits and investigations (see Articles 17, 18 and 22).
 For the last reporting period: that all the receipts have been declared (see Article 5.3.3).

Please declare all eligible costs, even if they exceed the amounts indicated in the estimated budget (see Annex 2). Only amounts that were declared in your individual financial statements can be taken into account lateron, in order to replace other costs that are found to be ineligible.

¹ See Article 6 for the eligibility conditions

² The indirect costs claimed must be free of any amounts covered by an operating grant (received under any EU or Euratom funding programme; see Article 6.2.E). If you have received an operating grant during this reporting period, you cannot claim indirect costs unless you can demonstrate that the operating grant does not cover any costs of the action.

³ This is the *theoretical* amount of EU contribution that the system calculates automatically (by multiplying the reimbursement rate by the total costs declared). The amount you request (in the column 'requested EU contribution') may be less,

⁴ See Article 5 for the forms of costs

⁵ Flat rate : 25% of eligible direct costs, from which are excluded: direct costs of subcontracting, costs of in-kind contributions not used on premises, direct costs of financial support, and unit costs declared under budget category F if they include indirect costs (see Article 6.2.E)

⁶ Only specific unit costs that do not include indirect costs

ANNEX 5

MODEL FOR THE CERTIFICATE ON THE FINANCIAL STATEMENTS

- For options [*in italics in square brackets*]: choose the applicable option. Options not chosen should be deleted.
- For fields in [grey in square brackets]: enter the appropriate data

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TERMS OF REFERENCE FOR AN INDEPENDENT REPORT OF FACTUAL FINDINGS ON COSTS DECLARED UNDER A GRANT AGREEMENT FINANCED UNDER THE HORIZON 2020 RESEARCH FRAMEWORK PROGRAMME

INDEPENDENT REPORT OF FACTUAL FINDINGS ON COSTS DECLARED UNDER A GRANT AGREEMENT FINANCED UNDER THE HORIZON 2020 RESEARCH FRAMEWORK PROGRAMME

Terms of Reference for an Independent Report of Factual Findings on costs declared under a Grant Agreement financed under the Horizon 2020 Research and Innovation Framework Programme

This document sets out the ‘Terms of Reference (ToR)’ under which

[OPTION 1: [insert name of the beneficiary] (‘the Beneficiary’)] [OPTION 2: [insert name of the linked third party] (‘the Linked Third Party’), third party linked to the Beneficiary [insert name of the beneficiary] (‘the Beneficiary’)]

agrees to engage

[insert legal name of the auditor] (‘the Auditor’)

to produce an independent report of factual findings (‘the Report’) concerning the Financial Statement(s)¹ drawn up by the [Beneficiary] [Linked Third Party] for the Horizon 2020 grant agreement [insert number of the grant agreement, title of the action, acronym and duration from/to] (‘the Agreement’), and

to issue a Certificate on the Financial Statements’ (‘CFS’) referred to in Article 20.4 of the Agreement based on the compulsory reporting template stipulated by the Commission.

The Agreement has been concluded under the Horizon 2020 Research and Innovation Framework Programme (H2020) between the Beneficiary and [OPTION 1: the European Union, represented by the European Commission (‘the Commission’)] [OPTION 2: the European Atomic Energy Community (Euratom,) represented by the European Commission (‘the Commission’)] [OPTION 3: the [Research Executive Agency (REA)] [European Research Council Executive Agency (ERCEA)] [Innovation and Networks Executive Agency (INEA)] [Executive Agency for Small and Medium-sized Enterprises (EASME)] (‘the Agency’), under the powers delegated by the European Commission (‘the Commission’).]

The [Commission] [Agency] is mentioned as a signatory of the Agreement with the Beneficiary only. The [European Union][Euratom][Agency] is not a party to this engagement.

1.1 Subject of the engagement

The coordinator must submit to the [Commission][Agency] the final report within 60 days following the end of the last reporting period which should include, amongst other documents, a CFS for each beneficiary and for each linked third party that requests a total contribution of EUR 325 000 or more, as reimbursement of actual costs and unit costs calculated on the basis of its usual cost accounting practices (see Article 20.4 of the Agreement). The CFS must cover all reporting periods of the beneficiary or linked third party indicated above.

The Beneficiary must submit to the coordinator the CFS for itself and for its linked third party(ies), if the CFS must be included in the final report according to Article 20.4 of the Agreement.

The CFS is composed of two separate documents:

- The Terms of Reference (‘the ToR’) to be signed by the [Beneficiary] [Linked Third Party] and the Auditor;

¹ By which costs under the Agreement are declared (see template ‘Model Financial Statements’ in Annex 4 to the Grant Agreement).

- The Auditor's Independent Report of Factual Findings ('the Report') to be issued on the Auditor's letterhead, dated, stamped and signed by the Auditor (or the competent public officer) which includes the agreed-upon procedures ('the Procedures') to be performed by the Auditor, and the standard factual findings ('the Findings') to be confirmed by the Auditor.

If the CFS must be included in the final report according to Article 20.4 of the Agreement, the request for payment of the balance relating to the Agreement cannot be made without the CFS. However, the payment for reimbursement of costs covered by the CFS does not preclude the Commission [Agency,] the European Anti-Fraud Office and the European Court of Auditors from carrying out checks, reviews, audits and investigations in accordance with Article 22 of the Agreement.

1.2 Responsibilities

The [Beneficiary] [Linked Third Party]:

- must draw up the Financial Statement(s) for the action financed by the Agreement in compliance with the obligations under the Agreement. The Financial Statement(s) must be drawn up according to the [Beneficiary's] [Linked Third Party's] accounting and book-keeping system and the underlying accounts and records;
- must send the Financial Statement(s) to the Auditor;
- is responsible and liable for the accuracy of the Financial Statement(s);
- is responsible for the completeness and accuracy of the information provided to enable the Auditor to carry out the Procedures. It must provide the Auditor with a written representation letter supporting these statements. The written representation letter must state the period covered by the statements and must be dated;
- accepts that the Auditor cannot carry out the Procedures unless it is given full access to the [Beneficiary's] [Linked Third Party's] staff and accounting as well as any other relevant records and documentation.

The Auditor:

- [Option 1 by default: is qualified to carry out statutory audits of accounting documents in accordance with Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC or similar national regulations].
- [Option 2 if the Beneficiary or Linked Third Party has an independent Public Officer: is a competent and independent Public Officer for which the relevant national authorities have established the legal capacity to audit the Beneficiary].
- [Option 3 if the Beneficiary or Linked Third Party is an international organisation: is an [internal] [external] auditor in accordance with the internal financial regulations and procedures of the international organisation].

The Auditor:

- must be independent from the Beneficiary [and the Linked Third Party], in particular, it must not have been involved in preparing the [Beneficiary's] [Linked Third Party's] Financial Statement(s);
- must plan work so that the Procedures may be carried out and the Findings may be assessed;
- must adhere to the Procedures laid down and the compulsory report format;
- must carry out the engagement in accordance with this ToR;
- must document matters which are important to support the Report;
- must base its Report on the evidence gathered;
- must submit the Report to the [Beneficiary] [Linked Third Party].

The Commission sets out the Procedures to be carried out by the Auditor. The Auditor is not responsible for their suitability or pertinence. As this engagement is not an assurance engagement, the Auditor does not provide an audit opinion or a statement of assurance.

1.3 Applicable Standards

The Auditor must comply with these Terms of Reference and with²:

- the International Standard on Related Services ('ISRS') 4400 *Engagements to perform Agreed-upon Procedures regarding Financial Information* as issued by the International Auditing and Assurance Standards Board (IAASB);
- the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants (IESBA). Although ISRS 4400 states that independence is not a requirement for engagements to carry out agreed-upon procedures, the [Commission]/[Agency] requires that the Auditor also complies with the Code's independence requirements.

The Auditor's Report must state that there is no conflict of interests in establishing this Report between the Auditor and the Beneficiary [and the Linked Third Party], and must specify - if the service is invoiced - the total fee paid to the Auditor for providing the Report.

1.4 Reporting

The Report must be written in the language of the Agreement (see Article 20.7).

Under Article 22 of the Agreement, the Commission[, the Agency], the European Anti-Fraud Office and the Court of Auditors have the right to audit any work that is carried out under the action and for which costs are declared from [the European Union] [Euratom] budget. This includes work related to this engagement. The Auditor must provide access to all working papers (e.g. recalculation of hourly rates, verification of the time declared for the action) related to this assignment if the Commission [, the Agency], the European Anti-Fraud Office or the European Court of Auditors requests them.

1.5 Timing

The Report must be provided by [dd Month yyyy].

1.6 Other terms

[The [Beneficiary] [Linked Third Party] and the Auditor can use this section to agree other specific terms, such as the Auditor's fees, liability, applicable law, etc. Those specific terms must not contradict the terms specified above.]

[legal name of the Auditor]

[name & function of authorised representative]

[dd Month yyyy]

Signature of the Auditor

[legal name of the [Beneficiary]/[Linked Third Party]]

[name & function of authorised representative]

[dd Month yyyy]

Signature of the [Beneficiary]/[Linked Third Party]

² Supreme Audit Institutions applying INTOSAI-standards may carry out the Procedures according to the corresponding International Standards of Supreme Audit Institutions and code of ethics issued by INTOSAI instead of the International Standard on Related Services ('ISRS') 4400 and the Code of Ethics for Professional Accountants issued by the IAASB and the IESBA.

**Independent Report of Factual Findings on costs declared
under Horizon 2020 Research and Innovation Framework Programme**

(To be printed on the Auditor's letterhead)

To
[name of contact person(s)], [Position]
[[Beneficiary's] [Linked Third Party's] name]
[Address]
[dd Month yyyy]

Dear [Name of contact person(s)],

As agreed under the terms of reference dated [dd Month yyyy]

with [OPTION 1: [insert name of the beneficiary] ('the Beneficiary')] [OPTION 2: [insert name of the linked third party] ('the Linked Third Party'), third party linked to the Beneficiary [insert name of the beneficiary] ('the Beneficiary')],

we

[name of the auditor] ('the Auditor'),
established at
[full address/city/state/province/country],
represented by
[name and function of an authorised representative],

have carried out the procedures agreed with you regarding the costs declared in the Financial Statement(s)³ of the [Beneficiary] [Linked Third Party] concerning the grant agreement [insert grant agreement reference: number, title of the action and acronym] ('the Agreement'),

with a total cost declared of
[total amount] EUR,

and a total of actual costs and unit costs calculated in accordance with the [Beneficiary's] [Linked Third Party's] usual cost accounting practices' declared of

[sum of total actual costs and total direct personnel costs declared as unit costs calculated in accordance with the [Beneficiary's] [Linked Third Party's] usual cost accounting practices] EUR

and **hereby provide our Independent Report of Factual Findings ('the Report')** using the compulsory report format agreed with you.

The Report

Our engagement was carried out in accordance with the terms of reference ('the ToR') appended to this Report. The Report includes the agreed-upon procedures ('the Procedures') carried out and the standard factual findings ('the Findings') examined.

³ By which the Beneficiary declares costs under the Agreement (see template 'Model Financial Statement' in Annex 4 to the Agreement).

H2020 Model Grant Agreements: H2020 General MGA — Multi: v5.0 – dd.mm.2017

The Procedures were carried out solely to assist the [Commission] [Agency] in evaluating whether the [Beneficiary's] [Linked Third Party's] costs in the accompanying Financial Statement(s) were declared in accordance with the Agreement. The [Commission] [Agency] draws its own conclusions from the Report and any additional information it may require.

The scope of the Procedures was defined by the Commission. Therefore, the Auditor is not responsible for their suitability or pertinence. Since the Procedures carried out constitute neither an audit nor a review made in accordance with International Standards on Auditing or International Standards on Review Engagements, the Auditor does not give a statement of assurance on the Financial Statements.

Had the Auditor carried out additional procedures or an audit of the [Beneficiary's] [Linked Third Party's] Financial Statements in accordance with International Standards on Auditing or International Standards on Review Engagements, other matters might have come to its attention and would have been included in the Report.

Not applicable Findings

We examined the Financial Statement(s) stated above and considered the following Findings not applicable:

Explanation (to be removed from the Report):

If a Finding was not applicable, it must be marked as 'N.A.' ('Not applicable') in the corresponding row on the right-hand column of the table and means that the Finding did not have to be corroborated by the Auditor and the related Procedure(s) did not have to be carried out.

The reasons of the non-application of a certain Finding must be obvious i.e.

- i) if no cost was declared under a certain category then the related Finding(s) and Procedure(s) are not applicable;*
- ii) if the condition set to apply certain Procedure(s) are not met the related Finding(s) and those Procedure(s) are not applicable. For instance, for 'beneficiaries with accounts established in a currency other than euro' the Procedure and Finding related to 'beneficiaries with accounts established in euro' are not applicable. Similarly, if no additional remuneration is paid, the related Finding(s) and Procedure(s) for additional remuneration are not applicable.*

List here all Findings considered not applicable for the present engagement and explain the reasons of the non-applicability.

....

Exceptions

Apart from the exceptions listed below, the [Beneficiary] [Linked Third Party] provided the Auditor all the documentation and accounting information needed by the Auditor to carry out the requested Procedures and evaluate the Findings.

Explanation (to be removed from the Report):

- If the Auditor was not able to successfully complete a procedure requested, it must be marked as 'E' ('Exception') in the corresponding row on the right-hand column of the table. The reason such as the inability to reconcile key information or the unavailability of data that prevents the Auditor from carrying out the Procedure must be indicated below.*
- If the Auditor cannot corroborate a standard finding after having carried out the corresponding procedure, it must also be marked as 'E' ('Exception') and, where possible, the reasons why the Finding was not fulfilled and its possible impact must be explained here below.*

List here any exceptions and add any information on the cause and possible consequences of each exception, if known. If the exception is quantifiable, include the corresponding amount.

....

Example (to be removed from the Report):

1. *The Beneficiary was unable to substantiate the Finding number 1 on ... because*
2. *Finding number 30 was not fulfilled because the methodology used by the Beneficiary to calculate unit costs was different from the one approved by the Commission. The differences were as follows: ...*
3. *After carrying out the agreed procedures to confirm the Finding number 31, the Auditor found a difference of _____ EUR. The difference can be explained by ...*

Further Remarks

In addition to reporting on the results of the specific procedures carried out, the Auditor would like to make the following general remarks:

Example (to be removed from the Report):

1. *Regarding Finding number 8 the conditions for additional remuneration were considered as fulfilled because ...*
2. *In order to be able to confirm the Finding number 15 we carried out the following additional procedures:*

Use of this Report

This Report may be used only for the purpose described in the above objective. It was prepared solely for the confidential use of the [Beneficiary] [Linked Third Party] and the [Commission] [Agency], and only to be submitted to the [Commission] [Agency] in connection with the requirements set out in Article 20.4 of the Agreement. The Report may not be used by the [Beneficiary] [Linked Third Party] or by the [Commission] [Agency] for any other purpose, nor may it be distributed to any other parties. The [Commission] [Agency] may only disclose the Report to authorised parties, in particular to the European Anti-Fraud Office (OLAF) and the European Court of Auditors.

This Report relates only to the Financial Statement(s) submitted to the [Commission] [Agency] by the [Beneficiary] [Linked Third Party] for the Agreement. Therefore, it does not extend to any other of the [Beneficiary's] [Linked Third Party's] Financial Statement(s).

There was no conflict of interest⁴ between the Auditor and the Beneficiary [and Linked Third Party] in establishing this Report. The total fee paid to the Auditor for providing the Report was EUR [] (including EUR [] of deductible VAT).

We look forward to discussing our Report with you and would be pleased to provide any further information or assistance.

[legal name of the Auditor]

[name and function of an authorised representative]

[dd Month yyyy]

Signature of the Auditor

⁴ A conflict of interest arises when the Auditor's objectivity to establish the certificate is compromised in fact or in appearance when the Auditor for instance:

- was involved in the preparation of the Financial Statements;
- stands to benefit directly should the certificate be accepted;
- has a close relationship with any person representing the beneficiary;
- is a director, trustee or partner of the beneficiary; or
- is in any other situation that compromises his or her independence or ability to establish the certificate impartially.

Agreed-upon procedures to be performed and standard factual findings to be confirmed by the Auditor

The European Commission reserves the right to i) provide the auditor with additional guidance regarding the procedures to be followed or the facts to be ascertained and the way in which to present them (this may include sample coverage and findings) or to ii) change the procedures, by notifying the Beneficiary in writing. The procedures carried out by the auditor to confirm the standard factual finding are listed in the table below.

If this certificate relates to a Linked Third Party, any reference here below to ‘the Beneficiary’ is to be considered as a reference to ‘the Linked Third Party’.

The ‘result’ column has three different options: ‘C’, ‘E’ and ‘N.A.’:

- ‘C’ stands for ‘confirmed’ and means that the auditor can confirm the ‘standard factual finding’ and, therefore, there is no exception to be reported.
- ‘E’ stands for ‘exception’ and means that the Auditor carried out the procedures but cannot confirm the ‘standard factual finding’, or that the Auditor was not able to carry out a specific procedure (e.g. because it was impossible to reconcile key information or data were unavailable),
- ‘N.A.’ stands for ‘not applicable’ and means that the Finding did not have to be examined by the Auditor and the related Procedure(s) did not have to be carried out. The reasons of the non-application of a certain Finding must be obvious i.e. i) if no cost was declared under a certain category then the related Finding(s) and Procedure(s) are not applicable; ii) if the condition set to apply certain Procedure(s) are not met then the related Finding(s) and Procedure(s) are not applicable. For instance, for ‘beneficiaries with accounts established in a currency other than the euro’ the Procedure related to ‘beneficiaries with accounts established in euro’ is not applicable. Similarly, if no additional remuneration is paid, the related Finding(s) and Procedure(s) for additional remuneration are not applicable.

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
A	ACTUAL PERSONNEL COSTS AND UNIT COSTS CALCULATED BY THE BENEFICIARY IN ACCORDANCE WITH ITS USUAL COST ACCOUNTING PRACTICE		
	<p>The Auditor draws a sample of persons whose costs were declared in the Financial Statement(s) to carry out the procedures indicated in the consecutive points of this section A.</p> <p><i>(The sample should be selected randomly so that it is representative. Full coverage is required if there are fewer than 10 people (including employees, natural persons working under a direct contract and personnel seconded by a third party), otherwise the sample should have a minimum of 10 people, or 10% of the total, whichever number is the highest)</i></p> <p>The Auditor sampled [] people out of the total of [] people.</p>		

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
A.1	<p>PERSONNEL COSTS</p> <p><u>For the persons included in the sample and working under an employment contract or equivalent act (general procedures for individual actual personnel costs and personnel costs declared as unit costs)</u></p> <p>To confirm standard factual findings 1-5 listed in the next column, the Auditor reviewed following information/documents provided by the Beneficiary:</p> <ul style="list-style-type: none"> ○ a list of the persons included in the sample indicating the period(s) during which they worked for the action, their position (classification or category) and type of contract; ○ the payslips of the employees included in the sample; ○ reconciliation of the personnel costs declared in the Financial Statement(s) with the accounting system (project accounting and general ledger) and payroll system; ○ information concerning the employment status and employment conditions of personnel included in the sample, in particular their employment contracts or equivalent; ○ the Beneficiary’s usual policy regarding payroll matters (e.g. salary policy, overtime policy, variable pay); ○ applicable national law on taxes, labour and social security and ○ any other document that supports the personnel costs declared. <p>The Auditor also verified the eligibility of all components of the retribution (see Article 6 GA) and recalculated the personnel costs for employees included in the sample.</p>	<p>1) The employees were i) directly hired by the Beneficiary in accordance with its national legislation, ii) under the Beneficiary’s sole technical supervision and responsibility and iii) remunerated in accordance with the Beneficiary’s usual practices.</p> <p>2) Personnel costs were recorded in the Beneficiary's accounts/payroll system.</p> <p>3) Costs were adequately supported and reconciled with the accounts and payroll records.</p> <p>4) Personnel costs did not contain any ineligible elements.</p> <p>5) There were no discrepancies between the personnel costs charged to the action and the costs recalculated by the Auditor.</p>	
	<p><i>Further procedures if ‘additional remuneration’ is paid</i></p> <p>To confirm standard factual findings 6-9 listed in the next column, the Auditor:</p> <ul style="list-style-type: none"> ○ reviewed relevant documents provided by the Beneficiary (legal form, legal/statutory 	<p>6) The Beneficiary paying “additional remuneration” was a non-profit legal entity.</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<p>obligations, the Beneficiary’s usual policy on additional remuneration, criteria used for its calculation, the Beneficiary’s usual remuneration practice for projects funded under national funding schemes...);</p> <ul style="list-style-type: none"> ○ recalculated the amount of additional remuneration eligible for the action based on the supporting documents received (full-time or part-time work, exclusive or non-exclusive dedication to the action, usual remuneration paid for projects funded by national schemes) to arrive at the applicable FTE/year and pro-rata rate (see data collected in the course of carrying out the procedures under A.2 ‘Productive hours’ and A.4 ‘Time recording system’). <p><i>‘ADDITIONAL REMUNERATION’ MEANS ANY PART OF THE REMUNERATION WHICH EXCEEDS WHAT THE PERSON WOULD BE PAID FOR TIME WORKED IN PROJECTS FUNDED BY NATIONAL SCHEMES.</i></p> <p><i>IF ANY PART OF THE REMUNERATION PAID TO THE EMPLOYEE QUALIFIES AS "ADDITIONAL REMUNERATION" AND IS ELIGIBLE UNDER THE PROVISIONS OF ARTICLE 6.2.A.1, THIS CAN BE CHARGED AS ELIGIBLE COST TO THE ACTION UP TO THE FOLLOWING AMOUNT:</i></p> <p><i>(A) IF THE PERSON WORKS FULL TIME AND EXCLUSIVELY ON THE ACTION DURING THE FULL YEAR: UP TO EUR 8 000/YEAR;</i></p> <p><i>(B) IF THE PERSON WORKS EXCLUSIVELY ON THE ACTION BUT NOT FULL-TIME OR NOT FOR THE FULL YEAR: UP TO THE CORRESPONDING PRO-RATA AMOUNT OF EUR 8 000, OR</i></p> <p><i>(C) IF THE PERSON DOES NOT WORK EXCLUSIVELY ON THE ACTION: UP TO A PRO-RATA AMOUNT CALCULATED IN ACCORDANCE TO ARTICLE 6.2.A.1.</i></p>	<p>7) The amount of additional remuneration paid corresponded to the Beneficiary’s usual remuneration practices and was consistently paid whenever the same kind of work or expertise was required.</p> <p>8) The criteria used to calculate the additional remuneration were objective and generally applied by the Beneficiary regardless of the source of funding used.</p> <p>9) The amount of additional remuneration included in the personnel costs charged to the action was capped at EUR 8,000 per FTE/year (up to the equivalent pro-rata amount if the person did not work on the action full-time during the year or did not work exclusively on the action).</p>	
	<p><i>Additional procedures in case “unit costs calculated by the Beneficiary in accordance with its usual cost accounting practices” is applied:</i></p> <p>Apart from carrying out the procedures indicated above to confirm standard factual findings 1-5 and, if applicable, also 6-9, the Auditor carried out following procedures to confirm standard</p>	<p>10) The personnel costs included in the Financial Statement were calculated in accordance with the Beneficiary’s usual cost accounting practice. This methodology was consistently</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<p>factual findings 10-13 listed in the next column:</p> <ul style="list-style-type: none"> ○ obtained a description of the Beneficiary's usual cost accounting practice to calculate unit costs; ○ reviewed whether the Beneficiary's usual cost accounting practice was applied for the Financial Statements subject of the present CFS; ○ verified the employees included in the sample were charged under the correct category (in accordance with the criteria used by the Beneficiary to establish personnel categories) by reviewing the contract/HR-record or analytical accounting records; ○ verified that there is no difference between the total amount of personnel costs used in calculating the cost per unit and the total amount of personnel costs recorded in the statutory accounts; ○ verified whether actual personnel costs were adjusted on the basis of budgeted or estimated elements and, if so, verified whether those elements used are actually relevant for the calculation, objective and supported by documents. 	<p>used in all H2020 actions.</p> <p>11) The employees were charged under the correct category.</p> <p>12) Total personnel costs used in calculating the unit costs were consistent with the expenses recorded in the statutory accounts.</p> <p>13) Any estimated or budgeted element used by the Beneficiary in its unit-cost calculation were relevant for calculating personnel costs and corresponded to objective and verifiable information.</p>	
	<p><u>For natural persons included in the sample and working with the Beneficiary under a direct contract other than an employment contract, such as consultants (no subcontractors).</u></p> <p>To confirm standard factual findings 14-17 listed in the next column the Auditor reviewed following information/documents provided by the Beneficiary:</p> <ul style="list-style-type: none"> ○ the contracts, especially the cost, contract duration, work description, place of work, ownership of the results and reporting obligations to the Beneficiary; ○ the employment conditions of staff in the same category to compare costs and; ○ any other document that supports the costs declared and its registration (e.g. invoices, accounting records, etc.). 	<p>14) The natural persons worked under conditions similar to those of an employee, in particular regarding the way the work is organised, the tasks that are performed and the premises where they are performed.</p> <p>15) The results of work carried out belong to the Beneficiary, or, if not, the Beneficiary has obtained all necessary rights to fulfil its obligations as if those</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
		results were generated by itself.	
		16) Their costs were not significantly different from those for staff who performed similar tasks under an employment contract with the Beneficiary.	
		17) The costs were supported by audit evidence and registered in the accounts.	
	<p><u>For personnel seconded by a third party and included in the sample (not subcontractors)</u></p> <p>To confirm standard factual findings 18-21 listed in the next column, the Auditor reviewed following information/documents provided by the Beneficiary:</p> <ul style="list-style-type: none"> ○ their secondment contract(s) notably regarding costs, duration, work description, place of work and ownership of the results; ○ if there is reimbursement by the Beneficiary to the third party for the resource made available (in-kind contribution against payment): any documentation that supports the costs declared (e.g. contract, invoice, bank payment, and proof of registration in its accounting/payroll, etc.) and reconciliation of the Financial Statement(s) with the accounting system (project accounting and general ledger) as well as any proof that the amount invoiced by the third party did not include any profit; ○ if there is no reimbursement by the Beneficiary to the third party for the resource made available (in-kind contribution free of charge): a proof of the actual cost borne by the Third Party for the resource made available free of charge to the Beneficiary such as a statement of costs incurred by the Third Party and proof of the registration in the Third Party's accounting/payroll; 	18) Seconded personnel reported to the Beneficiary and worked on the Beneficiary's premises (unless otherwise agreed with the Beneficiary).	
		19) The results of work carried out belong to the Beneficiary, or, if not, the Beneficiary has obtained all necessary rights to fulfil its obligations as if those results were generated by itself..	
		<p><i>If personnel is seconded against payment:</i></p> <p>20) The costs declared were supported with documentation and recorded in the</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<ul style="list-style-type: none"> ○ any other document that supports the costs declared (e.g. invoices, etc.). 	Beneficiary's accounts. The third party did not include any profit.	
		<p><i>If personnel is seconded free of charge:</i></p> <p>21) The costs declared did not exceed the third party's cost as recorded in the accounts of the third party and were supported with documentation.</p>	
A.2	<p>PRODUCTIVE HOURS</p> <p>To confirm standard factual findings 22-27 listed in the next column, the Auditor reviewed relevant documents, especially national legislation, labour agreements and contracts and time records of the persons included in the sample, to verify that:</p> <ul style="list-style-type: none"> ○ the annual productive hours applied were calculated in accordance with one of the methods described below, ○ the full-time equivalent (FTEs) ratios for employees not working full-time were correctly calculated. <p>If the Beneficiary applied method B, the auditor verified that the correctness in which the total number of hours worked was calculated and that the contracts specified the annual workable hours.</p> <p>If the Beneficiary applied method C, the auditor verified that the 'annual productive hours' applied when calculating the hourly rate were equivalent to at least 90 % of the 'standard annual workable hours'. The Auditor can only do this if the calculation of the standard annual workable</p>	<p>22) The Beneficiary applied method [<i>choose one option and delete the others</i>]</p> <p>[A: 1720 hours]</p> <p>[B: the 'total number of hours worked']</p> <p>[C: 'standard annual productive hours' used correspond to usual accounting practices]</p> <p>23) Productive hours were calculated annually.</p> <p>24) For employees not working full-time the full-time equivalent (FTE) ratio was correctly applied.</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<p>hours can be supported by records, such as national legislation, labour agreements, and contracts.</p> <p><i>BENEFICIARY'S PRODUCTIVE HOURS' FOR PERSONS WORKING FULL TIME SHALL BE ONE OF THE FOLLOWING METHODS:</i></p> <p><i>A. 1720 ANNUAL PRODUCTIVE HOURS (PRO-RATA FOR PERSONS NOT WORKING FULL-TIME)</i></p> <p><i>B. THE TOTAL NUMBER OF HOURS WORKED BY THE PERSON FOR THE BENEFICIARY IN THE YEAR (THIS METHOD IS ALSO REFERRED TO AS 'TOTAL NUMBER OF HOURS WORKED' IN THE NEXT COLUMN). THE CALCULATION OF THE TOTAL NUMBER OF HOURS WORKED WAS DONE AS FOLLOWS: ANNUAL WORKABLE HOURS OF THE PERSON ACCORDING TO THE EMPLOYMENT CONTRACT, APPLICABLE LABOUR AGREEMENT OR NATIONAL LAW PLUS OVERTIME WORKED MINUS ABSENCES (SUCH AS SICK LEAVE OR SPECIAL LEAVE).</i></p> <p><i>C. THE STANDARD NUMBER OF ANNUAL HOURS GENERALLY APPLIED BY THE BENEFICIARY FOR ITS PERSONNEL IN ACCORDANCE WITH ITS USUAL COST ACCOUNTING PRACTICES (THIS METHOD IS ALSO REFERRED TO AS 'STANDARD ANNUAL PRODUCTIVE HOURS' IN THE NEXT COLUMN). THIS NUMBER MUST BE AT LEAST 90% OF THE STANDARD ANNUAL WORKABLE HOURS.</i></p> <p><i>'ANNUAL WORKABLE HOURS' MEANS THE PERIOD DURING WHICH THE PERSONNEL MUST BE WORKING, AT THE EMPLOYER'S DISPOSAL AND CARRYING OUT HIS/HER ACTIVITY OR DUTIES UNDER THE EMPLOYMENT CONTRACT, APPLICABLE COLLECTIVE LABOUR AGREEMENT OR NATIONAL WORKING TIME LEGISLATION.</i></p>	<p><i>If the Beneficiary applied method B.</i></p> <p>25) The calculation of the number of 'annual workable hours', overtime and absences was verifiable based on the documents provided by the Beneficiary.</p> <p>25.1) The Beneficiary calculates the hourly rates per full financial year following procedure A.3 (method B is not allowed for beneficiaries calculating hourly rates per month).</p> <p><i>If the Beneficiary applied method C.</i></p> <p>26) The calculation of the number of 'standard annual workable hours' was verifiable based on the documents provided by the Beneficiary.</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
		27) The ‘annual productive hours’ used for calculating the hourly rate were consistent with the usual cost accounting practices of the Beneficiary and were equivalent to at least 90 % of the ‘annual workable hours’.	
A.3	<p>HOURLY PERSONNEL RATES</p> <p><u>I) For unit costs calculated in accordance to the Beneficiary's usual cost accounting practice (unit costs):</u></p> <p>If the Beneficiary has a "Certificate on Methodology to calculate unit costs " (CoMUC) approved by the Commission, the Beneficiary provides the Auditor with a description of the approved methodology and the Commission’s letter of acceptance. The Auditor verified that the Beneficiary has indeed used the methodology approved. If so, no further verification is necessary.</p> <p>If the Beneficiary does not have a "Certificate on Methodology" (CoMUC) approved by the Commission, or if the methodology approved was not applied, then the Auditor:</p> <ul style="list-style-type: none"> ○ reviewed the documentation provided by the Beneficiary, including manuals and internal guidelines that explain how to calculate hourly rates; ○ recalculated the unit costs (hourly rates) of staff included in the sample following the results of the procedures carried out in A.1 and A.2. <p><u>II) For individual hourly rates:</u></p> <p>The Auditor:</p> <ul style="list-style-type: none"> ○ reviewed the documentation provided by the Beneficiary, including manuals and internal guidelines that explain how to calculate hourly rates; 	<p>28) The Beneficiary applied [<i>choose one option and delete the other</i>]:</p> <p>[Option I: “Unit costs (hourly rates) were calculated in accordance with the Beneficiary’s usual cost accounting practices”]</p> <p>[Option II: Individual hourly rates were applied]</p> <p><i>For option I concerning unit costs and if the Beneficiary applies the methodology approved by the Commission (CoMUC):</i></p> <p>29) The Beneficiary used the Commission-approved methodology to calculate hourly rates. It corresponded to the organisation's usual cost accounting practices and was applied consistently for all</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<ul style="list-style-type: none"> ○ recalculated the hourly rates of staff included in the sample (recalculation of all hourly rates if the Beneficiary uses annual rates, recalculation of three months selected randomly for every year and person if the Beneficiary uses monthly rates) following the results of the procedures carried out in A.1 and A.2; ○ (only in case of monthly rates) confirmed that the time spent on parental leave is not deducted, and that, if parts of the basic remuneration are generated over a period longer than a month, the Beneficiary has included only the share which is generated in the month. <p><u>“UNIT COSTS CALCULATED BY THE BENEFICIARY IN ACCORDANCE WITH ITS USUAL COST ACCOUNTING PRACTICES”:</u> <i>IT IS CALCULATED BY DIVIDING THE TOTAL AMOUNT OF PERSONNEL COSTS OF THE CATEGORY TO WHICH THE EMPLOYEE BELONGS VERIFIED IN LINE WITH PROCEDURE A.1 BY THE NUMBER OF FTE AND THE ANNUAL TOTAL PRODUCTIVE HOURS OF THE SAME CATEGORY CALCULATED BY THE BENEFICIARY IN ACCORDANCE WITH PROCEDURE A.2.</i></p> <p><u>HOURLY RATE FOR INDIVIDUAL ACTUAL PERSONAL COSTS:</u> <i>IT IS CALCULATED FOLLOWING ONE OF THE TWO OPTIONS BELOW:</i></p> <p><i>A) [OPTION BY DEFAULT] BY DIVIDING THE ACTUAL ANNUAL AMOUNT OF PERSONNEL COSTS OF AN EMPLOYEE VERIFIED IN LINE WITH PROCEDURE A.1 BY THE NUMBER OF ANNUAL PRODUCTIVE HOURS VERIFIED IN LINE WITH PROCEDURE A.2 (FULL FINANCIAL YEAR HOURLY RATE);</i></p> <p><i>B) BY DIVIDING THE ACTUAL MONTHLY AMOUNT OF PERSONNEL COSTS OF AN EMPLOYEE VERIFIED IN LINE WITH PROCEDURE A.1 BY 1/12 OF THE NUMBER OF ANNUAL PRODUCTIVE HOURS VERIFIED IN LINE WITH PROCEDURE A.2.(MONTHLY HOURLY RATE).</i></p>	<p>activities irrespective of the source of funding.</p> <p><i>For option I concerning unit costs and if the Beneficiary applies a methodology not approved by the Commission:</i></p> <p>30) The unit costs re-calculated by the Auditor were the same as the rates applied by the Beneficiary.</p> <p><i>For option II concerning individual hourly rates:</i></p> <p>31) The individual rates re-calculated by the Auditor were the same as the rates applied by the Beneficiary.</p> <p>31.1) The Beneficiary used only one option (per full financial year or per month) throughout each financial year examined.</p> <p>31.2) The hourly rates do not include additional remuneration.</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
A.4	<p>TIME RECORDING SYSTEM</p> <p>To verify that the time recording system ensures the fulfilment of all minimum requirements and that the hours declared for the action were correct, accurate and properly authorised and supported by documentation, the Auditor made the following checks for the persons included in the sample that declare time as worked for the action on the basis of time records:</p> <ul style="list-style-type: none"> ○ description of the time recording system provided by the Beneficiary (registration, authorisation, processing in the HR-system); ○ its actual implementation; ○ time records were signed at least monthly by the employees (on paper or electronically) and authorised by the project manager or another manager; ○ the hours declared were worked within the project period; ○ there were no hours declared as worked for the action if HR-records showed absence due to holidays or sickness (further cross-checks with travels are carried out in B.1 below) ; ○ the hours charged to the action matched those in the time recording system. <p><i>ONLY THE HOURS WORKED ON THE ACTION CAN BE CHARGED. ALL WORKING TIME TO BE CHARGED SHOULD BE RECORDED THROUGHOUT THE DURATION OF THE PROJECT, ADEQUATELY SUPPORTED BY EVIDENCE OF THEIR REALITY AND RELIABILITY (SEE SPECIFIC PROVISIONS BELOW FOR PERSONS WORKING EXCLUSIVELY FOR THE ACTION WITHOUT TIME RECORDS).</i></p> <p><u>If the persons are working exclusively for the action and without time records</u></p> <p>For the persons selected that worked exclusively for the action without time records, the Auditor verified evidence available demonstrating that they were in reality exclusively dedicated to the action and that the Beneficiary signed a declaration confirming that they have worked exclusively for the action.</p>	32) All persons recorded their time dedicated to the action on a daily/ weekly/ monthly basis using a paper/computer-based system. <i>(delete the answers that are not applicable)</i>	
		33) Their time-records were authorised at least monthly by the project manager or other superior.	
		34) Hours declared were worked within the project period and were consistent with the presences/absences recorded in HR-records.	
		35) There were no discrepancies between the number of hours charged to the action and the number of hours recorded.	
		36) The exclusive dedication is supported by a declaration signed by the Beneficiary and by any other evidence gathered.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
B	COSTS OF SUBCONTRACTING		
B.1	<p>The Auditor obtained the detail/breakdown of subcontracting costs and sampled [redacted] cost items selected randomly (<i>full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest</i>).</p> <p>To confirm standard factual findings 37-41 listed in the next column, the Auditor reviewed the following for the items included in the sample:</p> <ul style="list-style-type: none"> ○ the use of subcontractors was foreseen in Annex 1; ○ subcontracting costs were declared in the subcontracting category of the Financial Statement; ○ supporting documents on the selection and award procedure were followed; ○ the Beneficiary ensured best value for money (key elements to appreciate the respect of this principle are the award of the subcontract to the bid offering best price-quality ratio, under conditions of transparency and equal treatment. In case an existing framework contract was used the Beneficiary ensured it was established on the basis of the principle of best value for money under conditions of transparency and equal treatment). <p>In particular,</p> <ol style="list-style-type: none"> i. if the Beneficiary acted as a contracting authority within the meaning of Directive 2004/18/EC (or 2014/24/EU) or of Directive 2004/17/EC (or 2014/25/EU), the Auditor verified that the applicable national law on public procurement was followed and that the subcontracting complied with the Terms and Conditions of the Agreement. ii. if the Beneficiary did not fall under the above-mentioned category the Auditor verified that the Beneficiary followed their usual procurement rules and respected the Terms and Conditions of the Agreement.. 	<p>37) The use of claimed subcontracting costs was foreseen in Annex 1 and costs were declared in the Financial Statements under the subcontracting category.</p> <p>38) There were documents of requests to different providers, different offers and assessment of the offers before selection of the provider in line with internal procedures and procurement rules. Subcontracts were awarded in accordance with the principle of best value for money.</p> <p><i>(When different offers were not collected the Auditor explains the reasons provided by the Beneficiary under the caption “Exceptions” of the Report. The Commission will analyse this information to evaluate whether these costs might be accepted as eligible)</i></p> <p>39) The subcontracts were not awarded to other Beneficiaries</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<p>For the items included in the sample the Auditor also verified that:</p> <ul style="list-style-type: none"> ○ the subcontracts were not awarded to other Beneficiaries in the consortium; ○ there were signed agreements between the Beneficiary and the subcontractor; ○ there was evidence that the services were provided by subcontractor; 	<p>of the consortium.</p> <p>40) All subcontracts were supported by signed agreements between the Beneficiary and the subcontractor.</p> <p>41) There was evidence that the services were provided by the subcontractors.</p>	
C	COSTS OF PROVIDING FINANCIAL SUPPORT TO THIRD PARTIES		
C.1	<p>The Auditor obtained the detail/breakdown of the costs of providing financial support to third parties and sampled [] cost items selected randomly <i>(full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest).</i></p> <p>The Auditor verified that the following minimum conditions were met:</p> <ul style="list-style-type: none"> a) the maximum amount of financial support for each third party did not exceed EUR 60 000, unless explicitly mentioned in Annex 1; b) the financial support to third parties was agreed in Annex 1 of the Agreement and the other provisions on financial support to third parties included in Annex 1 were respected. 	<p>42) All minimum conditions were met</p>	

D	OTHER ACTUAL DIRECT COSTS		
D.1	<p>COSTS OF TRAVEL AND RELATED SUBSISTENCE ALLOWANCES</p> <p>The Auditor sampled [] cost items selected randomly (<i>full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is the highest</i>).</p> <p>The Auditor inspected the sample and verified that:</p> <ul style="list-style-type: none"> ○ travel and subsistence costs were consistent with the Beneficiary's usual policy for travel. In this context, the Beneficiary provided evidence of its normal policy for travel costs (e.g. use of first class tickets, reimbursement by the Beneficiary on the basis of actual costs, a lump sum or per diem) to enable the Auditor to compare the travel costs charged with this policy; ○ travel costs are correctly identified and allocated to the action (e.g. trips are directly linked to the action) by reviewing relevant supporting documents such as minutes of meetings, workshops or conferences, their registration in the correct project account, their consistency with time records or with the dates/duration of the workshop/conference; ○ no ineligible costs or excessive or reckless expenditure was declared (see Article 6.5 MGA). 	43) Costs were incurred, approved and reimbursed in line with the Beneficiary's usual policy for travels.	
		44) There was a link between the trip and the action.	
		45) The supporting documents were consistent with each other regarding subject of the trip, dates, duration and reconciled with time records and accounting.	
		46) No ineligible costs or excessive or reckless expenditure was declared.	
D.2	<p>DEPRECIATION COSTS FOR EQUIPMENT, INFRASTRUCTURE OR OTHER ASSETS</p> <p>The Auditor sampled [] cost items selected randomly (<i>full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is the highest</i>).</p> <p>For “equipment, infrastructure or other assets” [from now on called “asset(s)"] selected in the sample the Auditor verified that:</p> <ul style="list-style-type: none"> ○ the assets were acquired in conformity with the Beneficiary's internal guidelines and procedures; 	47) Procurement rules, principles and guides were followed.	
		48) There was a link between the grant agreement and the asset charged to the action.	
		49) The asset charged to the action was traceable to the accounting records and the underlying documents.	

	<ul style="list-style-type: none"> ○ they were correctly allocated to the action (with supporting documents such as delivery note invoice or any other proof demonstrating the link to the action) ○ they were entered in the accounting system; ○ the extent to which the assets were used for the action (as a percentage) was supported by reliable documentation (e.g. usage overview table); <p>The Auditor recalculated the depreciation costs and verified that they were in line with the applicable rules in the Beneficiary’s country and with the Beneficiary’s usual accounting policy (e.g. depreciation calculated on the acquisition value).</p> <p>The Auditor verified that no ineligible costs such as deductible VAT, exchange rate losses, excessive or reckless expenditure were declared (see Article 6.5 GA).</p>	50) The depreciation method used to charge the asset to the action was in line with the applicable rules of the Beneficiary's country and the Beneficiary's usual accounting policy.	
		51) The amount charged corresponded to the actual usage for the action.	
		52) No ineligible costs or excessive or reckless expenditure were declared.	
D.3	<p>COSTS OF OTHER GOODS AND SERVICES</p> <p>The Auditor sampled [redacted] cost items selected randomly (<i>full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest</i>).</p> <p>For the purchase of goods, works or services included in the sample the Auditor verified that:</p> <ul style="list-style-type: none"> ○ the contracts did not cover tasks described in Annex 1; ○ they were correctly identified, allocated to the proper action, entered in the accounting system (traceable to underlying documents such as purchase orders, invoices and accounting); ○ the goods were not placed in the inventory of durable equipment; ○ the costs charged to the action were accounted in line with the Beneficiary’s usual accounting practices; ○ no ineligible costs or excessive or reckless expenditure were declared (see Article 6 GA). <p>In addition, the Auditor verified that these goods and services were acquired in conformity with</p>	53) Contracts for works or services did not cover tasks described in Annex 1.	
		54) Costs were allocated to the correct action and the goods were not placed in the inventory of durable equipment.	
		55) The costs were charged in line with the Beneficiary’s accounting policy and were adequately supported.	
		56) No ineligible costs or excessive or reckless expenditure were declared. For internal invoices/charges only the cost element was charged, without any mark-ups.	

	<p>the Beneficiary's internal guidelines and procedures, in particular:</p> <ul style="list-style-type: none"> ○ if Beneficiary acted as a contracting authority within the meaning of Directive 2004/18/EC (or 2014/24/EU) or of Directive 2004/17/EC (or 2014/25/EU), the Auditor verified that the applicable national law on public procurement was followed and that the procurement contract complied with the Terms and Conditions of the Agreement. ○ if the Beneficiary did not fall into the category above, the Auditor verified that the Beneficiary followed their usual procurement rules and respected the Terms and Conditions of the Agreement. <p>For the items included in the sample the Auditor also verified that:</p> <ul style="list-style-type: none"> ○ the Beneficiary ensured best value for money (key elements to appreciate the respect of this principle are the award of the contract to the bid offering best price-quality ratio, under conditions of transparency and equal treatment. In case an existing framework contract was used the Auditor also verified that the Beneficiary ensured it was established on the basis of the principle of best value for money under conditions of transparency and equal treatment); <p><i>SUCH GOODS AND SERVICES INCLUDE, FOR INSTANCE, CONSUMABLES AND SUPPLIES, DISSEMINATION (INCLUDING OPEN ACCESS), PROTECTION OF RESULTS, SPECIFIC EVALUATION OF THE ACTION IF IT IS REQUIRED BY THE AGREEMENT, CERTIFICATES ON THE FINANCIAL STATEMENTS IF THEY ARE REQUIRED BY THE AGREEMENT AND CERTIFICATES ON THE METHODOLOGY, TRANSLATIONS, REPRODUCTION.</i></p>	<p>57) Procurement rules, principles and guides were followed. There were documents of requests to different providers, different offers and assessment of the offers before selection of the provider in line with internal procedures and procurement rules. The purchases were made in accordance with the principle of best value for money.</p> <p><i>(When different offers were not collected the Auditor explains the reasons provided by the Beneficiary under the caption “Exceptions” of the Report. The Commission will analyse this information to evaluate whether these costs might be accepted as eligible)</i></p>	
<p>D.4</p>	<p>AGGREGATED CAPITALISED AND OPERATING COSTS OF RESEARCH INFRASTRUCTURE</p> <p>The Auditor ensured the existence of a positive ex-ante assessment (issued by the EC Services) of the cost accounting methodology of the Beneficiary allowing it to apply the guidelines on direct costing for large research infrastructures in Horizon 2020.</p>	<p>58) The costs declared as direct costs for Large Research Infrastructures (in the appropriate line of the Financial Statement) comply with the methodology described in the positive ex-ante assessment report.</p>	

	<p><i>In the cases that a positive ex-ante assessment has been issued (see the standard factual findings 58-59 on the next column),</i> The Auditor ensured that the beneficiary has applied consistently the methodology that is explained and approved in the positive ex ante assessment;</p> <p><i>In the cases that a positive ex-ante assessment has NOT been issued (see the standard factual findings 60 on the next column),</i> The Auditor verified that no costs of Large Research Infrastructure have been charged as direct costs in any costs category;</p> <p><i>In the cases that a draft ex-ante assessment report has been issued with recommendation for further changes (see the standard factual findings 60 on the next column),</i></p> <ul style="list-style-type: none"> • The Auditor followed the same procedure as above (when a positive ex-ante assessment has NOT yet been issued) and paid particular attention (testing reinforced) to the cost items for which the draft ex-ante assessment either rejected the inclusion as direct costs for Large Research Infrastructures or issued recommendations. 	<p>59) Any difference between the methodology applied and the one positively assessed was extensively described and adjusted accordingly.</p>	
<p>D.5</p>	<p>Costs of internally invoiced goods and services</p> <p>The Auditor sampled cost items selected randomly (<i>full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest</i>).</p> <p>To confirm standard factual findings 61-65 listed in the next column, the Auditor:</p> <ul style="list-style-type: none"> ○ obtained a description of the Beneficiary's usual cost accounting practice to calculate costs of internally invoiced goods and services (unit costs); ○ reviewed whether the Beneficiary's usual cost accounting practice was applied for the Financial Statements subject of the present CFS; ○ ensured that the methodology to calculate unit costs is being used in a consistent manner, based on objective criteria, regardless of the source of funding; ○ verified that any ineligible items or any costs claimed under other budget categories, in particular indirect costs, have not been taken into account when calculating the costs of 	<p>61) The costs of internally invoiced goods and services included in the Financial Statement were calculated in accordance with the Beneficiary's usual cost accounting practice.</p>	
		<p>62) The cost accounting practices used to calculate the costs of internally invoiced goods and services were applied by the Beneficiary in a consistent manner based on objective criteria regardless of the source of funding.</p>	
		<p>63) The unit cost is calculated using the actual costs for the good or service recorded in the Beneficiary's accounts, excluding any ineligible cost or costs included in other</p>	

	<p>internally invoiced goods and services (see Article 6 GA);</p> <ul style="list-style-type: none"> ○ verified whether actual costs of internally invoiced goods and services were adjusted on the basis of budgeted or estimated elements and, if so, verified whether those elements used are actually relevant for the calculation, and correspond to objective and verifiable information. ○ verified that any costs of items which are not directly linked to the production of the invoiced goods or service (e.g. supporting services like cleaning, general accountancy, administrative support, etc. not directly used for production of the good or service) have not been taken into account when calculating the costs of internally invoiced goods and services. ○ verified that any costs of items used for calculating the costs internally invoiced goods and services are supported by audit evidence and registered in the accounts. 	<p>budget categories.</p>	
		<p>64) The unit cost excludes any costs of items which are not directly linked to the production of the invoiced goods or service.</p>	
		<p>65) The costs items used for calculating the actual costs of internally invoiced goods and services were relevant, reasonable and correspond to objective and verifiable information.</p>	
E	USE OF EXCHANGE RATES		
E.1	<p><u>a) For Beneficiaries with accounts established in a currency other than euros</u></p> <p>The Auditor sampled [redacted] cost items selected randomly and verified that the exchange rates used for converting other currencies into euros were in accordance with the following rules established in the Agreement (full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest):</p> <p><i>COSTS RECORDED IN THE ACCOUNTS IN A CURRENCY OTHER THAN EURO SHALL BE CONVERTED INTO EURO AT THE AVERAGE OF THE DAILY EXCHANGE RATES PUBLISHED IN THE C SERIES OF OFFICIAL JOURNAL OF THE EUROPEAN UNION (https://www.ecb.int/stats/exchange/eurofxref/html/index.en.html), DETERMINED OVER THE CORRESPONDING REPORTING PERIOD.</i></p> <p><i>IF NO DAILY EURO EXCHANGE RATE IS PUBLISHED IN THE OFFICIAL JOURNAL OF THE EUROPEAN UNION FOR THE CURRENCY IN QUESTION, CONVERSION SHALL BE MADE AT THE AVERAGE OF THE MONTHLY ACCOUNTING RATES ESTABLISHED BY THE COMMISSION AND PUBLISHED ON ITS WEBSITE (http://ec.europa.eu/budget/contracts_grants/info_contracts/inforeuro/inforeuro_en.cfm),</i></p>	<p>66) The exchange rates used to convert other currencies into Euros were in accordance with the rules established of the Grant Agreement and there was no difference in the final figures.</p>	

	<i>DETERMINED OVER THE CORRESPONDING REPORTING PERIOD.</i>		
	<p>b) <u>For Beneficiaries with accounts established in euros</u></p> <p>The Auditor sampled [] cost items selected randomly and verified that the exchange rates used for converting other currencies into euros were in accordance with the following rules established in the Agreement (<i>full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest</i>):</p> <p><i>COSTS INCURRED IN ANOTHER CURRENCY SHALL BE CONVERTED INTO EURO BY APPLYING THE BENEFICIARY'S USUAL ACCOUNTING PRACTICES.</i></p>	<p>67) The Beneficiary applied its usual accounting practices.</p>	

[legal name of the audit firm]

[name and function of an authorised representative]

[dd Month yyyy]

<Signature of the Auditor>

ANNEX 6

MODEL FOR THE CERTIFICATE ON THE METHODOLOGY

- For options [*in italics in square brackets*]: choose the applicable option. Options not chosen should be deleted.
- For fields in [grey in square brackets]: enter the appropriate data.

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TERMS OF REFERENCE FOR AN AUDIT ENGAGEMENT FOR A METHODOLOGY CERTIFICATE IN CONNECTION WITH ONE OR MORE GRANT AGREEMENTS FINANCED UNDER THE HORIZON 2020 RESEARCH AND INNOVATION FRAMEWORK PROGRAMME

INDEPENDENT REPORT OF FACTUAL FINDINGS ON THE METHODOLOGY CONCERNING GRANT AGREEMENTS FINANCED UNDER THE HORIZON 2020 RESEARCH AND INNOVATION FRAMEWORK PROGRAMME

Terms of reference for an audit engagement for a methodology certificate in connection with one or more grant agreements financed under the Horizon 2020 Research and Innovation Framework Programme

This document sets out the ‘**Terms of Reference (ToR)**’ under which

[OPTION 1: [insert name of the beneficiary] (‘the Beneficiary’)] [OPTION 2: [insert name of the linked third party] (‘the Linked Third Party’), third party linked to the Beneficiary [insert name of the beneficiary] (‘the Beneficiary’)]

agrees to engage

[insert legal name of the auditor] (‘the Auditor’)

to produce an independent report of factual findings (‘the Report’) concerning the *[Beneficiary’s] [Linked Third Party’s]* usual accounting practices for calculating and claiming direct personnel costs declared as unit costs (‘the Methodology’) in connection with grant agreements financed under the Horizon 2020 Research and Innovation Framework Programme.

The procedures to be carried out for the assessment of the methodology will be based on the grant agreement(s) detailed below:

[title and number of the grant agreement(s)] (‘the Agreement(s)’)

The Agreement(s) has(have) been concluded between the Beneficiary and *[OPTION 1: the European Union, represented by the European Commission (‘the Commission’)] [OPTION 2: the European Atomic Energy Community (Euratom,) represented by the European Commission (‘the Commission’)] [OPTION 3: the [Research Executive Agency (REA)] [European Research Council Executive Agency (ERCEA)] [Innovation and Networks Executive Agency (INEA)] [Executive Agency for Small and Medium-sized Enterprises (EASME)] (‘the Agency’), under the powers delegated by the European Commission (‘the Commission’)].*

The *[Commission] [Agency]* is mentioned as a signatory of the Agreement with the Beneficiary only. The *[European Union] [Euratom] [Agency]* is not a party to this engagement.

1.1 Subject of the engagement

According to Article 18.1.2 of the Agreement, beneficiaries *[and linked third parties]* that declare direct personnel costs as unit costs calculated in accordance with their usual cost accounting practices may submit to the *[Commission] [Agency]*, for approval, a certificate on the methodology (‘CoMUC’) stating that there are adequate records and documentation to prove that their cost accounting practices used comply with the conditions set out in Point A of Article 6.2.

The subject of this engagement is the CoMUC which is composed of two separate documents:

- the Terms of Reference (‘the ToR’) to be signed by the *[Beneficiary] [Linked Third Party]* and the Auditor;
- the Auditor’s Independent Report of Factual Findings (‘the Report’) issued on the Auditor’s letterhead, dated, stamped and signed by the Auditor which includes; the standard statements (‘the Statements’) evaluated and signed by the *[Beneficiary] [Linked Third Party]*, the agreed-upon procedures (‘the Procedures’) performed by the Auditor and the standard factual findings

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(‘the Findings’) assessed by the Auditor. The Statements, Procedures and Findings are summarised in the table that forms part of the Report.

The information provided through the Statements, the Procedures and the Findings will enable the Commission to draw conclusions regarding the existence of the *[Beneficiary’s] [Linked Third Party’s]* usual cost accounting practice and its suitability to ensure that direct personnel costs claimed on that basis comply with the provisions of the Agreement. The Commission draws its own conclusions from the Report and any additional information it may require.

1.2 Responsibilities

The parties to this agreement are the *[Beneficiary] [Linked Third Party]* and the Auditor.

The *[Beneficiary] [Linked Third Party]*:

- is responsible for preparing financial statements for the Agreement(s) (‘the Financial Statements’) in compliance with those Agreements;
- is responsible for providing the Financial Statement(s) to the Auditor and enabling the Auditor to reconcile them with the *[Beneficiary’s] [Linked Third Party’s]* accounting and bookkeeping system and the underlying accounts and records. The Financial Statement(s) will be used as a basis for the procedures which the Auditor will carry out under this ToR;
- is responsible for its Methodology and liable for the accuracy of the Financial Statement(s);
- is responsible for endorsing or refuting the Statements indicated under the heading ‘Statements to be made by the Beneficiary/ Linked Third Party’ in the first column of the table that forms part of the Report;
- must provide the Auditor with a signed and dated representation letter;
- accepts that the ability of the Auditor to carry out the Procedures effectively depends upon the *[Beneficiary] [Linked Third Party]* providing full and free access to the *[Beneficiary’s] [Linked Third Party’s]* staff and to its accounting and other relevant records.

The Auditor:

- *[Option 1 by default: is qualified to carry out statutory audits of accounting documents in accordance with Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC or similar national regulations].*
- *[Option 2 if the Beneficiary or Linked Third Party has an independent Public Officer: is a competent and independent Public Officer for which the relevant national authorities have established the legal capacity to audit the Beneficiary].*
- *[Option 3 if the Beneficiary or Linked Third Party is an international organisation: is an [internal] [external] auditor in accordance with the internal financial regulations and procedures of the international organisation].*

The Auditor:

- must be independent from the Beneficiary *[and the Linked Third Party]*, in particular, it must not have been involved in preparing the Beneficiary’s *[and Linked Third Party’s]* Financial Statement(s);
- must plan work so that the Procedures may be carried out and the Findings may be assessed;
- must adhere to the Procedures laid down and the compulsory report format;
- must carry out the engagement in accordance with these ToR;
- must document matters which are important to support the Report;
- must base its Report on the evidence gathered;
- must submit the Report to the *[Beneficiary] [Linked Third Party]*.

The Commission sets out the Procedures to be carried out and the Findings to be endorsed by the Auditor. The Auditor is not responsible for their suitability or pertinence. As this engagement is not an assurance engagement the Auditor does not provide an audit opinion or a statement of assurance.

1.3 Applicable Standards

The Auditor must comply with these Terms of Reference and with¹:

- the International Standard on Related Services ('ISRS') 4400 *Engagements to perform Agreed-upon Procedures regarding Financial Information* as issued by the International Auditing and Assurance Standards Board (IAASB);
- the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants (IESBA). Although ISRS 4400 states that independence is not a requirement for engagements to carry out agreed-upon procedures, the Commission requires that the Auditor also complies with the Code's independence requirements.

The Auditor's Report must state that there was no conflict of interests in establishing this Report between the Auditor and the Beneficiary [*and the Linked Third Party*] that could have a bearing on the Report, and must specify – if the service is invoiced - the total fee paid to the Auditor for providing the Report.

1.4 Reporting

The Report must be written in the language of the Agreement (see Article 20.7 of the Agreement).

Under Article 22 of the Agreement, the Commission, [*the Agency*], the European Anti-Fraud Office and the Court of Auditors have the right to audit any work that is carried out under the action and for which costs are declared from [*the European Union*] [*Euratom*] budget. This includes work related to this engagement. The Auditor must provide access to all working papers related to this assignment if the Commission[, *the Agency*], the European Anti-Fraud Office or the European Court of Auditors requests them.

1.5 Timing

The Report must be provided by [dd Month yyyy].

1.6 Other Terms

[The [Beneficiary] [Linked Third Party] and the Auditor can use this section to agree other specific terms, such as the Auditor's fees, liability, applicable law, etc. Those specific terms must not contradict the terms specified above.]

[legal name of the Auditor]

[name & title of authorised representative]

[dd Month yyyy]

Signature of the Auditor

[legal name of the [Beneficiary] [Linked Third Party]]

[name & title of authorised representative]

[dd Month yyyy]

Signature of the [*Beneficiary*] [*Linked Third Party*]

¹ Supreme Audit Institutions applying INTOSAI-standards may carry out the Procedures according to the corresponding International Standards of Supreme Audit Institutions and code of ethics issued by INTOSAI instead of the International Standard on Related Services ('ISRS') 4400 and the Code of Ethics for Professional Accountants issued by the IAASB and the IESBA.

Independent report of factual findings on the methodology concerning grant agreements financed under the Horizon 2020 Research and Innovation Framework Programme

(To be printed on letterhead paper of the auditor)

To

[name of contact person(s)], [Position]
[[Beneficiary's] [Linked Third Party's] name]
[Address]
[dd Month yyyy]

Dear [Name of contact person(s)],

As agreed under the terms of reference dated [dd Month yyyy]

with [OPTION 1: [insert name of the beneficiary] ('the Beneficiary')] [OPTION 2: [insert name of the linked third party] ('the Linked Third Party'), third party linked to the Beneficiary [insert name of the beneficiary] ('the Beneficiary')],

we

[name of the auditor] ('the Auditor'),

established at

[full address/city/state/province/country],

represented by

[name and function of an authorised representative],

have carried out the agreed-upon procedures ('the Procedures') and provide hereby our Independent Report of Factual Findings ('the Report'), concerning the [Beneficiary's] [Linked Third Party's] usual accounting practices for calculating and declaring direct personnel costs declared as unit costs ('the Methodology').

You requested certain procedures to be carried out in connection with the grant(s)

[title and number of the grant agreement(s)] ('the Agreement(s)').

The Report

Our engagement was carried out in accordance with the terms of reference ('the ToR') appended to this Report. The Report includes: the standard statements ('the Statements') made by the [Beneficiary] [Linked Third Party], the agreed-upon procedures ('the Procedures') carried out and the standard factual findings ('the Findings') confirmed by us.

The engagement involved carrying out the Procedures and assessing the Findings and the documentation requested appended to this Report, the results of which the Commission uses to draw conclusions regarding the acceptability of the Methodology applied by the [Beneficiary] [Linked Third Party].

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The Report covers the methodology used from [dd Month yyyy]. In the event that the [Beneficiary] [Linked Third Party] changes this methodology, the Report will not be applicable to any Financial Statement¹ submitted thereafter.

The scope of the Procedures and the definition of the standard statements and findings were determined solely by the Commission. Therefore, the Auditor is not responsible for their suitability or pertinence.

Since the Procedures carried out constitute neither an audit nor a review made in accordance with International Standards on Auditing or International Standards on Review Engagements, we do not give a statement of assurance on the costs declared on the basis of the [Beneficiary's] [Linked Third Party's] Methodology. Had we carried out additional procedures or had we performed an audit or review in accordance with these standards, other matters might have come to its attention and would have been included in the Report.

Exceptions

Apart from the exceptions listed below, the [Beneficiary] [Linked Third Party] agreed with the standard Statements and provided the Auditor all the documentation and accounting information needed by the Auditor to carry out the requested Procedures and corroborate the standard Findings.

List here any exception and add any information on the cause and possible consequences of each exception, if known. If the exception is quantifiable, also indicate the corresponding amount.

.....

Explanation of possible exceptions in the form of examples (to be removed from the Report):

- i. the [Beneficiary] [Linked Third Party] did not agree with the standard Statement number ... because...;*
- ii. the Auditor could not carry out the procedure ... established because (e.g. due to the inability to reconcile key information or the unavailability or inconsistency of data);*
- iii. the Auditor could not confirm or corroborate the standard Finding number ... because*

Remarks

We would like to add the following remarks relevant for the proper understanding of the Methodology applied by the [Beneficiary] [Linked Third Party] or the results reported:

Example (to be removed from the Report):

- Regarding the methodology applied to calculate hourly rates ...*
- Regarding standard Finding 15 it has to be noted that ...*
- The [Beneficiary] [Linked Third Party] explained the deviation from the benchmark statement XXIV concerning time recording for personnel with no exclusive dedication to the action in the following manner:*
- ...*

Annexes

Please provide the following documents to the auditor and annex them to the report when submitting this CoMUC to the Commission:

¹ Financial Statement in this context refers solely to Annex 4 of the Agreement by which the Beneficiary declares costs under the Agreement.

1. Brief description of the methodology for calculating personnel costs, productive hours and hourly rates;
2. Brief description of the time recording system in place;
3. An example of the time records used by the [Beneficiary] [Linked Third Party];
4. Description of any budgeted or estimated elements applied, together with an explanation as to why they are relevant for calculating the personnel costs and how they are based on objective and verifiable information;
5. A summary sheet with the hourly rate for direct personnel declared by the [Beneficiary] [Linked Third Party] and recalculated by the Auditor for each staff member included in the sample (the names do not need to be reported);
6. A comparative table summarising for each person selected in the sample a) the time claimed by the [Beneficiary] [Linked Third Party] in the Financial Statement(s) and b) the time according to the time record verified by the Auditor;
7. A copy of the letter of representation provided to the Auditor.

Use of this Report

This Report has been drawn up solely for the purpose given under Point 1.1 Reasons for the engagement.

The Report:

- is confidential and is intended to be submitted to the Commission by the [Beneficiary] [Linked Third Party] in connection with Article 18.1.2 of the Agreement;
- may not be used by the [Beneficiary] [Linked Third Party] or by the Commission for any other purpose, nor distributed to any other parties;
- may be disclosed by the Commission only to authorised parties, in particular the European Anti-Fraud Office (OLAF) and the European Court of Auditors.
- relates only to the usual cost accounting practices specified above and does not constitute a report on the Financial Statements of the [Beneficiary] [Linked Third Party].

No conflict of interest² exists between the Auditor and the Beneficiary [and the Linked Third Party] that could have a bearing on the Report. The total fee paid to the Auditor for producing the Report was EUR [] (including EUR [] of deductible VAT).

We look forward to discussing our Report with you and would be pleased to provide any further information or assistance which may be required.

Yours sincerely

[legal name of the Auditor]
[name and title of the authorised representative]
[dd Month yyyy]
Signature of the Auditor

² A conflict of interest arises when the Auditor's objectivity to establish the certificate is compromised in fact or in appearance when the Auditor for instance:

- was involved in the preparation of the Financial Statements;
- stands to benefit directly should the certificate be accepted;
- has a close relationship with any person representing the beneficiary;
- is a director, trustee or partner of the beneficiary; or
- is in any other situation that compromises his or her independence or ability to establish the certificate impartially.

Statements to be made by the Beneficiary/Linked Third Party (‘the Statements’) and Procedures to be carried out by the Auditor (‘the Procedures’) and standard factual findings (‘the Findings’) to be confirmed by the Auditor

The Commission reserves the right to provide the auditor with guidance regarding the Statements to be made, the Procedures to be carried out or the Findings to be ascertained and the way in which to present them. The Commission reserves the right to vary the Statements, Procedures or Findings by written notification to the Beneficiary/Linked Third Party to adapt the procedures to changes in the grant agreement(s) or to any other circumstances.

If this methodology certificate relates to the Linked Third Party’s usual accounting practices for calculating and claiming direct personnel costs declared as unit costs any reference here below to ‘the Beneficiary’ is to be considered as a reference to ‘the Linked Third Party’.

<i>Please explain any discrepancies in the body of the Report.</i>	
Statements to be made by Beneficiary	Procedures to be carried out and Findings to be confirmed by the Auditor
<p>A. Use of the Methodology</p> <p>I. The cost accounting practice described below has been in use since /dd Month yyyy/.</p> <p>II. The next planned alteration to the methodology used by the Beneficiary will be from [dd Month yyyy/.</p>	<p>Procedure:</p> <p>✓ The Auditor checked these dates against the documentation the Beneficiary has provided.</p> <p>Factual finding:</p> <p>1. The dates provided by the Beneficiary were consistent with the documentation.</p>
<p>B. Description of the Methodology</p> <p>III. The methodology to calculate unit costs is being used in a consistent manner and is reflected in the relevant procedures.</p> <p><i>[Please describe the methodology your entity uses to calculate <u>personnel costs</u>, productive hours and hourly rates, present your description to the Auditor and annex it to this certificate]</i></p> <p><i>[If the statement of section “B. Description of the methodology” cannot be endorsed by the Beneficiary or there is no written methodology to calculate unit costs it should be listed here below and reported as exception by the Auditor in the main Report of Factual Findings:</i> - ...]</p>	<p>Procedure:</p> <p>✓ The Auditor reviewed the description, the relevant manuals and/or internal guidance documents describing the methodology.</p> <p>Factual finding:</p> <p>2. The brief description was consistent with the relevant manuals, internal guidance and/or other documentary evidence the Auditor has reviewed.</p> <p>3. The methodology was generally applied by the Beneficiary as part of its usual costs accounting practices.</p>

<i>Please explain any discrepancies in the body of the Report.</i>	
Statements to be made by Beneficiary	Procedures to be carried out and Findings to be confirmed by the Auditor
<p>C. Personnel costs</p> <p><u>General</u></p> <p>IV. The unit costs (hourly rates) are limited to salaries including during parental leave, social security contributions, taxes and other costs included in the remuneration required under national law and the employment contract or equivalent appointing act;</p> <p>V. Employees are hired directly by the Beneficiary in accordance with national law, and work under its sole supervision and responsibility;</p> <p>VI. The Beneficiary remunerates its employees in accordance with its usual practices. This means that personnel costs are charged in line with the Beneficiary’s usual payroll policy (e.g. salary policy, overtime policy, variable pay) and no special conditions exist for employees assigned to tasks relating to the European Union or Euratom, unless explicitly provided for in the grant agreement(s);</p> <p>VII. The Beneficiary allocates its employees to the relevant group/category/cost centre for the purpose of the unit cost calculation in line with the usual cost accounting practice;</p> <p>VIII. Personnel costs are based on the payroll system and accounting system.</p> <p>IX. Any exceptional adjustments of actual personnel costs resulted from relevant budgeted or estimated elements and were based on objective and verifiable information. <i>[Please describe the ‘budgeted or estimated elements’ and their relevance to personnel costs, and explain how they were reasonable and based on objective and verifiable information, present your explanation to the Auditor and annex it to this certificate].</i></p> <p>X. Personnel costs claimed do not contain any of the following ineligible costs: costs related to return on capital; debt and debt service charges; provisions for future losses or debts; interest owed; doubtful debts; currency exchange losses; bank costs charged by the Beneficiary’s bank for transfers from the Commission/Agency; excessive or reckless expenditure; deductible VAT or costs incurred during suspension of the implementation of the action.</p> <p>XI. Personnel costs were not declared under another EU or Euratom grant</p>	<p>Procedure:</p> <p><i>The Auditor draws a sample of employees to carry out the procedures indicated in this section C and the following sections D to F.</i> <i>[The Auditor has drawn a random sample of 10 employees assigned to Horizon 2020 action(s). If fewer than 10 employees are assigned to the Horizon 2020 action(s), the Auditor has selected all employees assigned to the Horizon 2020 action(s) complemented by other employees irrespective of their assignments until he has reached 10 employees.]</i> For this sample:</p> <ul style="list-style-type: none"> ✓ the Auditor reviewed all documents relating to personnel costs such as employment contracts, payslips, payroll policy (e.g. salary policy, overtime policy, variable pay policy), accounting and payroll records, applicable national tax , labour and social security law and any other documents corroborating the personnel costs claimed; ✓ in particular, the Auditor reviewed the employment contracts of the employees in the sample to verify that: <ul style="list-style-type: none"> i. they were employed directly by the Beneficiary in accordance with applicable national legislation; ii. they were working under the sole technical supervision and responsibility of the latter; iii. they were remunerated in accordance with the Beneficiary’s usual practices; iv. they were allocated to the correct group/category/cost centre for the purposes of calculating the unit cost in line with the Beneficiary’s usual cost accounting practices; ✓ the Auditor verified that any ineligible items or any costs claimed under other costs categories or costs covered by other types of grant or by other grants financed from the European Union budget have not been taken into account when calculating the personnel costs; ✓ the Auditor numerically reconciled the total amount of personnel costs used to calculate the unit cost with the total amount of personnel costs recorded in the statutory accounts and the payroll system.

<i>Please explain any discrepancies in the body of the Report.</i>	
Statements to be made by Beneficiary	Procedures to be carried out and Findings to be confirmed by the Auditor
<p>(including grants awarded by a Member State and financed by the EU budget and grants awarded by bodies other than the Commission/Agency for the purpose of implementing the EU or Euratom budget in the same period, unless the Beneficiary can demonstrate that the operating grant does not cover any costs of the action).</p> <p><u>If additional remuneration as referred to in the grant agreement(s) is paid</u></p> <p>XII. The Beneficiary is a non-profit legal entity;</p> <p>XIII. The additional remuneration is part of the beneficiary’s usual remuneration practices and paid consistently whenever the relevant work or expertise is required;</p> <p>XIV. The criteria used to calculate the additional remuneration are objective and generally applied regardless of the source of funding;</p> <p>XV. The additional remuneration included in the personnel costs used to calculate the hourly rates for the grant agreement(s) is capped at EUR 8 000 per full-time equivalent (reduced proportionately if the employee is not assigned exclusively to the action).</p> <p><i>[If certain statement(s) of section “C. Personnel costs” cannot be endorsed by the Beneficiary they should be listed here below and reported as exception by the Auditor in the main Report of Factual Findings:</i> - ...]</p>	<ul style="list-style-type: none"> ✓ to the extent that actual personnel costs were adjusted on the basis of budgeted or estimated elements, the Auditor carefully examined those elements and checked the information source to confirm that they correspond to objective and verifiable information; ✓ if additional remuneration has been claimed, the Auditor verified that the Beneficiary was a non-profit legal entity, that the amount was capped at EUR 8 000 per full-time equivalent and that it was reduced proportionately for employees not assigned exclusively to the action(s). ✓ the Auditor recalculated the personnel costs for the employees in the sample. <p>Factual finding:</p> <ol style="list-style-type: none"> 4. All the components of the remuneration that have been claimed as personnel costs are supported by underlying documentation. 5. The employees in the sample were employed directly by the Beneficiary in accordance with applicable national law and were working under its sole supervision and responsibility. 6. Their employment contracts were in line with the Beneficiary’s usual policy; 7. Personnel costs were duly documented and consisted solely of salaries, social security contributions (pension contributions, health insurance, unemployment fund contributions, etc.), taxes and other statutory costs included in the remuneration (holiday pay, thirteenth month’s pay, etc.); 8. The totals used to calculate the personnel unit costs are consistent with those registered in the payroll and accounting records; 9. To the extent that actual personnel costs were adjusted on the basis of budgeted or estimated elements, those elements were relevant for calculating the personnel costs and correspond to objective and verifiable information. The budgeted or estimated elements used are: — (indicate the elements and their values). 10. Personnel costs contained no ineligible elements; 11. Specific conditions for eligibility were fulfilled when additional

<i>Please explain any discrepancies in the body of the Report.</i>	
Statements to be made by Beneficiary	Procedures to be carried out and Findings to be confirmed by the Auditor
	remuneration was paid: a) the Beneficiary is registered in the grant agreements as a non-profit legal entity; b) it was paid according to objective criteria generally applied regardless of the source of funding used and c) remuneration was capped at EUR 8000 per full-time equivalent (or up to up to the equivalent pro-rata amount if the person did not work on the action full-time during the year or did not work exclusively on the action).
<p>D. Productive hours</p> <p>XVI. The number of productive hours per full-time employee applied is <i>[delete as appropriate]</i>:</p> <p>A. 1720 productive hours per year for a person working full-time (corresponding pro-rata for persons not working full time).</p> <p>B. the total number of hours worked in the year by a person for the Beneficiary</p> <p>C. the standard number of annual hours generally applied by the beneficiary for its personnel in accordance with its usual cost accounting practices. This number must be at least 90% of the standard annual workable hours.</p> <p><u>If method B is applied</u></p> <p>XVII. The calculation of the total number of hours worked was done as follows: annual workable hours of the person according to the employment contract, applicable labour agreement or national law plus overtime worked minus absences (such as sick leave and special leave).</p> <p>XVIII. ‘Annual workable hours’ are hours during which the personnel must be working, at the employer’s disposal and carrying out his/her activity or duties under the employment contract, applicable collective labour agreement or national working time legislation.</p> <p>XIX. The contract (applicable collective labour agreement or national working time legislation) do specify the working time enabling to calculate the annual workable hours.</p>	<p>Procedure (same sample basis as for Section C: Personnel costs):</p> <ul style="list-style-type: none"> ✓ The Auditor verified that the number of productive hours applied is in accordance with method A, B or C. ✓ The Auditor checked that the number of productive hours per full-time employee is correct. ✓ If method B is applied the Auditor verified i) the manner in which the total number of hours worked was done and ii) that the contract specified the annual workable hours by inspecting all the relevant documents, national legislation, labour agreements and contracts. ✓ If method C is applied the Auditor reviewed the manner in which the standard number of working hours per year has been calculated by inspecting all the relevant documents, national legislation, labour agreements and contracts and verified that the number of productive hours per year used for these calculations was at least 90% of the standard number of working hours per year. <p>Factual finding:</p> <p><u>General</u></p> <p>12. The Beneficiary applied a number of productive hours consistent with method A, B or C detailed in the left-hand column.</p> <p>13. The number of productive hours per year per full-time employee was accurate.</p> <p><u>If method B is applied</u></p> <p>14. The number of ‘annual workable hours’, overtime and absences was</p>

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<p><u>If method C is applied</u></p> <p>XX. The standard number of productive hours per year is that of a full-time equivalent.</p> <p>XXI. The number of productive hours per year on which the hourly rate is based i) corresponds to the Beneficiary’s usual accounting practices; ii) is at least 90 % of the standard number of workable (working) hours per year.</p> <p>XXII. Standard workable (working) hours are hours during which personnel are at the Beneficiary’s disposal performing the duties described in the relevant employment contract, collective labour agreement or national labour legislation. The number of standard annual workable (working) hours that the Beneficiary claims is supported by labour contracts, national legislation and other documentary evidence.</p> <p><i>[If certain statement(s) of section “D. Productive hours” cannot be endorsed by the Beneficiary they should be listed here below and reported as exception by the Auditor: - ...]</i></p>	<p>verifiable based on the documents provided by the Beneficiary and the calculation of the total number of hours worked was accurate.</p> <p>15. The contract specified the working time enabling to calculate the annual workable hours.</p> <p><u>If method C is applied</u></p> <p>16. The calculation of the number of productive hours per year corresponded to the usual costs accounting practice of the Beneficiary.</p> <p>17. The calculation of the standard number of workable (working) hours per year was corroborated by the documents presented by the Beneficiary.</p> <p>18. The number of productive hours per year used for the calculation of the hourly rate was at least 90 % of the number of workable (working) hours per year.</p>
<p>E. Hourly rates</p> <p>The hourly rates are correct because:</p> <p>XXIII. Hourly rates are correctly calculated since they result from dividing annual personnel costs by the productive hours of a given year and group (e.g. staff category or department or cost centre depending on the methodology applied) and they are in line with the statements made in section C. and D. above.</p> <p><i>[If the statement of section ‘E. Hourly rates’ cannot be endorsed by the Beneficiary they should be listed here below and reported as exception by the Auditor: - ...]</i></p>	<p>Procedure</p> <ul style="list-style-type: none"> ✓ The Auditor has obtained a list of all personnel rates calculated by the Beneficiary in accordance with the methodology used. ✓ The Auditor has obtained a list of all the relevant employees, based on which the personnel rate(s) are calculated. <p>For 10 employees selected at random (same sample basis as Section C: Personnel costs):</p> <ul style="list-style-type: none"> ✓ The Auditor recalculated the hourly rates. ✓ The Auditor verified that the methodology applied corresponds to the usual accounting practices of the organisation and is applied consistently for all activities of the organisation on the basis of objective criteria irrespective of the source of funding. <p>Factual finding:</p>

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	19. No differences arose from the recalculation of the hourly rate for the employees included in the sample.
<p>F. Time recording</p> <p>XXIV. Time recording is in place for all persons with no exclusive dedication to one Horizon 2020 action. At least all hours worked in connection with the grant agreement(s) are registered on a daily/weekly/monthly basis <i>[delete as appropriate]</i> using a paper/computer-based system <i>[delete as appropriate]</i>;</p> <p>XXV. For persons exclusively assigned to one Horizon 2020 activity the Beneficiary has either signed a declaration to that effect or has put arrangements in place to record their working time;</p> <p>XXVI. Records of time worked have been signed by the person concerned (on paper or electronically) and approved by the action manager or line manager at least monthly;</p> <p>XXVII. Measures are in place to prevent staff from:</p> <ul style="list-style-type: none"> i. recording the same hours twice, ii. recording working hours during absence periods (e.g. holidays, sick leave), iii. recording more than the number of productive hours per year used to calculate the hourly rates, and iv. recording hours worked outside the action period. <p>XXVIII. No working time was recorded outside the action period;</p> <p>XXIX. No more hours were claimed than the productive hours used to calculate the hourly personnel rates.</p> <p><i>[Please provide a brief description of the <u>time recording system</u> in place together with the measures applied to ensure its reliability to the Auditor and annex it to the</i></p>	<p>Procedure</p> <ul style="list-style-type: none"> ✓ The Auditor reviewed the brief description, all relevant manuals and/or internal guidance describing the methodology used to record time. <p>The Auditor reviewed the time records of the random sample of 10 employees referred to under Section C: Personnel costs, and verified in particular:</p> <ul style="list-style-type: none"> ✓ that time records were available for all persons with not exclusive assignment to the action; ✓ that time records were available for persons working exclusively for a Horizon 2020 action, or, alternatively, that a declaration signed by the Beneficiary was available for them certifying that they were working exclusively for a Horizon 2020 action; ✓ that time records were signed and approved in due time and that all minimum requirements were fulfilled; ✓ that the persons worked for the action in the periods claimed; ✓ that no more hours were claimed than the productive hours used to calculate the hourly personnel rates; ✓ that internal controls were in place to prevent that time is recorded twice, during absences for holidays or sick leave; that more hours are claimed per person per year for Horizon 2020 actions than the number of productive hours per year used to calculate the hourly rates; that working time is recorded outside the action period; ✓ the Auditor cross-checked the information with human-resources records to verify consistency and to ensure that the internal controls have been effective. In addition, the Auditor has verified that no more hours were charged to Horizon 2020 actions per person per year than the number of productive hours per year used to calculate the hourly rates, and verified that

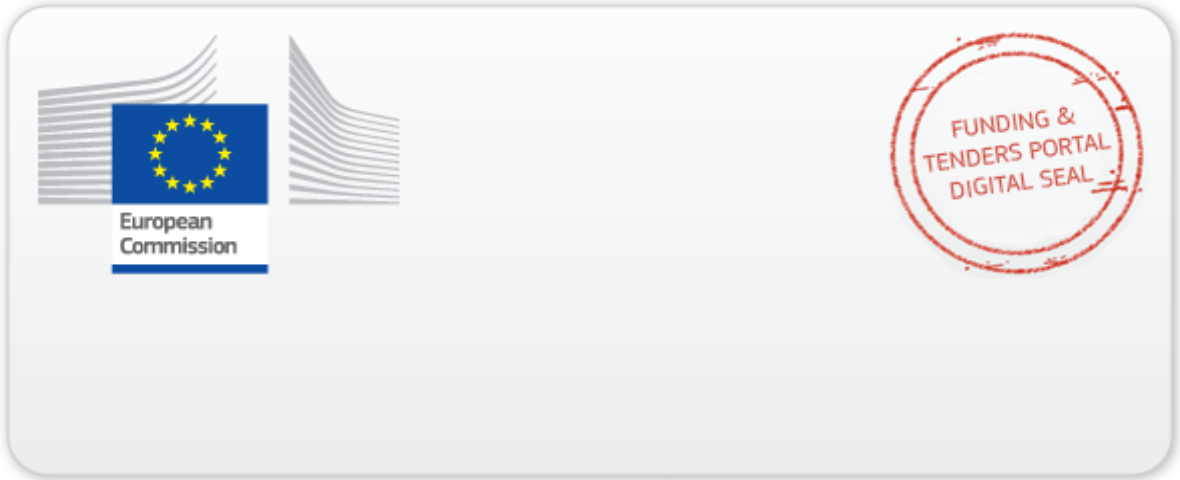
<i>Please explain any discrepancies in the body of the Report.</i>	
Statements to be made by Beneficiary	Procedures to be carried out and Findings to be confirmed by the Auditor
<p><i>present certificate¹].</i></p> <p><i>[If certain statement(s) of section “F. Time recording” cannot be endorsed by the Beneficiary they should be listed here below and reported as exception by the Auditor: - ...]</i></p>	<p>no time worked outside the action period was charged to the action.</p> <p>Factual finding:</p> <ol style="list-style-type: none"> 20. The brief description, manuals and/or internal guidance on time recording provided by the Beneficiary were consistent with management reports/records and other documents reviewed and were generally applied by the Beneficiary to produce the financial statements. 21. For the random sample time was recorded or, in the case of employees working exclusively for the action, either a signed declaration or time records were available; 22. For the random sample the time records were signed by the employee and the action manager/line manager, at least monthly. 23. Working time claimed for the action occurred in the periods claimed; 24. No more hours were claimed than the number productive hours used to calculate the hourly personnel rates; 25. There is proof that the Beneficiary has checked that working time has not been claimed twice, that it is consistent with absence records and the number of productive hours per year, and that no working time has been claimed outside the action period. 26. Working time claimed is consistent with that on record at the human-resources department.

¹ The description of the time recording system must state among others information on the content of the time records, its coverage (full or action time-recording, for all personnel or only for personnel involved in H2020 actions), its degree of detail (whether there is a reference to the particular tasks accomplished), its form, periodicity of the time registration and authorisation (paper or a computer-based system; on a daily, weekly or monthly basis; signed and countersigned by whom), controls applied to prevent double-charging of time or ensure consistency with HR-records such as absences and travels as well as its information flow up to its use for the preparation of the Financial Statements.

Grant Agreement number: [insert number] [insert acronym] [insert call identifier]

H2020 Model Grant Agreements: H2020 General MGA — Multi: v5.0 – dd.mm.2017

<i>Please explain any discrepancies in the body of the Report.</i>	
Statements to be made by Beneficiary	Procedures to be carried out and Findings to be confirmed by the Auditor
<i>[official name of the [Beneficiary] [Linked Third Party]]</i>	<i>[official name of the Auditor]</i>
<i>[name and title of authorised representative]</i>	<i>[name and title of authorised representative]</i>
<i>[dd Month yyyy]</i>	<i>[dd Month yyyy]</i>
<i><Signature of the [Beneficiary] [Linked Third Party]></i>	<i><Signature of the Auditor></i>



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