EUROPEAN COMMISSION
Research Executive Agency (REA)

Director

GRANT AGREEMENT

NUMBER — 665826 — PERFORM

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

on the one part,

*the **Research Executive Agency (REA)** ('the Agency'), under the power delegated by the European Commission ('the Commission')*[1],

represented for the purposes of signature of this Agreement by Head of Unit, Research Executive Agency (REA), Industrial Leadership and Societal Challenges Department, Spreading Excellence, Widening Participation, Science with and for Society, Peter VAN DER ZANDT,

and

on the other part,

1. 'the coordinator':

UNIVERSITAT AUTONOMA DE BARCELONA (UAB), 022, established in CAMPUS DE LA UAB BELLATERRA, CERDANYOLA BARCELONA 08193, Spain, ESQ0818002H, represented for the purposes of signing the Agreement by M. Pilar DELLUNDE I CLAVÉ

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

2. **THE BIG VAN THEORY (TBVT)** ES5, 52567, established in CARRER FRANCESC MACIA 21 PLANTA 2 PUERTA 4, CASTELLBISBAL 08755, Spain, ESG66125071,

3. **UNIVERSITY OF BRISTOL (UoB)** GB22, RC000648, established in TYNDALL AVENUE SENATE HOUSE, BRISTOL BS8 1TH, United Kingdom, GB991261800,

4. **SCIENCE MADE SIMPLE LIMITED (SMS)** LTD, 05187306, established in THE PARADE 14-17 SCHOOL OF PHYSICS & ASTRONOMY, CARDIFF CF24 3AA, United Kingdom, GB862387008,

5. **THE UNIVERSITY OF WARWICK (UoW)**, N/A, established in Kirby Corner Road - University House, COVENTRY CV4 8UW, United Kingdom, GB545270058,

6. **L'ATELIER DES JOURS A VENIR (AJA)** SARL, 539029124, established in 132 RUE D'ASSAS, PARIS 75006, France, FR93539029124,

7. **LES ATOMES CROCHUS (LAC)** FR20, 442783999, established in 45 RUE D ULM, PARIS 75005, France, FR59442783999,

8. **UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION - UNESCO (UNESCO)**, N/A , established in PLACE DE FONTENOY 7, PARIS 75352, France, N/A,

9. **EUSEA - EUROPAISCHE GESELLSCHAFT FUR WISSENSCHAFTSVERANSTALTUNGEN (EUSEA)** AT1, 171798373, established in ANTON BAUMGARTNERSTRASSE 44/C2/3/2, WIEN 1230, Austria,

1 Text in *italics* shows the options of the Model Grant Agreement that are applicable to this Agreement.

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

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

TERMS AND CONDITIONS

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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 '***Participatory Engagement with Scientific and Technological Research through Performance — PERFORM***' **('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 *the first day of the month following the date the Agreement enters into force (see Article 58)* ('**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).

4.2 Budget transfers

The estimated budget breakdown indicated in Annex 2 may be adjusted by transfers of amounts between beneficiaries or between budget categories (or both). This does not require an amendment according to Article 55, 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 1,997,252.50** (one million nine hundred and ninety seven thousand two hundred and fifty two EURO and fifty 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 **1,997,252.50** (one million nine hundred and ninety seven thousand two hundred and fifty two EURO and fifty 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 2 (**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**: 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 improper implementation or breach of other 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 improper implementation or breach of other 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 improper implementation of the action or to the seriousness of the 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 its improper implementation of the action or to the seriousness of its 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 2 or calculated by the beneficiary in accordance with its usual cost accounting practices (see Article 6.2, Point A)

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 entities[2] 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 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 the beneficiary's instructions and, unless otherwise agreed with the beneficiary, on the beneficiary's premises;

(b) the result of the work carried out belongs to the beneficiary, and

(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.

[2] 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.

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 2 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 2 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 is:

{the 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:** the hourly rate is the amount calculated as follows:

{actual annual personnel costs (excluding additional remuneration) for the person

divided by

number of annual productive hours}.

The beneficiaries must use the annual personnel costs and the number of annual productive hours for each financial year covered by the reporting period. 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;

(b) for personnel costs declared on the basis of **unit costs**: 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 2 (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'**[3] *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 infrastructure[4]*);*

*(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.

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 grant[5] financed by the EU or Euratom budget cannot declare indirect costs for the period covered by the operating grant.

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[3] '**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.

[4] For the definition, see Article 2(6) of 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) (OJ L 347, 20.12.2013 p.104)-('**Horizon 2020 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'.

[5] 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 (OJ L 218, 26.10.2012, p.1) ('**Financial Regulation No 966/2012**'): '**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.

F. *Specific cost category(ies)*

Not applicable

6.3 Conditions for costs of linked third parties to be eligible

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.

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).

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

Not applicable

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/EC[6] or 'contracting entities' within the meaning of Directive 2004/17/EC[7] 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).

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.

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[6] 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).

[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).

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 'contracting entities' within the meaning of Directive 2004/17/EC 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 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

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 '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 Articles 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 direct personnel costs declared as 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, Point A.

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 the 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 15
- *RP2: from month 16 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 also 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**';

(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**' (see Annex 4), 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**' (see Annex 4), 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, Point A).

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 — Suspension of the payment deadline — Termination

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 sent by the *Agency*, the Agreement may be terminated (see Article 50).

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 **998,626.25** (nine hundred and ninety eight thousand six hundred and twenty six EURO and twenty five eurocents).

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 **99,862.63** (ninety nine thousand eight hundred and sixty two EURO and sixty three 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:

{90% of the maximum grant amount (see Article 5.1)

minus

{pre-financing and previous interim payments}}.

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:

{final grant amount (see Article 5.3)

minus

{pre-financing and interim payments (if any) made}}.

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 beneficiary's consent — against any other amount owed by the beneficiary to the *Agency, the* Commission or an*other* 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: CAIXABANK, S.A.
Address of branch: EDIFICI RECTORAT:N, BELLATERRA, S CERDANYOLA DEL VALLES, Spain
Full name of the account holder: UNIVERSIDAD AUTONOMA DE BARCELONA
Full account number (including bank codes):
IBAN code: ES1721000424300200067164

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 883/2013[15] and No 2185/96[16] (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 966/2012[17], 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.

[15] 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).

[16] 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).

[17] 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).

22.4 Checks, reviews, audits and investigations for international organisations

In conformity with its financial regulations, the European Union, including the European Anti-Fraud Office (OLAF) and the European Court of Auditors (ECA), may undertake, including on the spot, checks, reviews audits and investigations.

This Article will be applied in accordance with any specific agreement concluded in this respect by the international organisation and the European Union.

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).

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 amounts to be rejected will be determined on the basis of the revised financial statements, subject to their approval.

If the *Agency or the* Commission 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, it will formally notify the beneficiary concerned the application of the initially notified correction rate for extrapolation.

If the *Agency or the* Commission accepts the alternative correction method proposed by the beneficiary concerned, it will formally notify the application of the accepted alternative correction method.

22.5.3.2 If the findings concern **improper implementation** or a **breach of another obligation**: 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.

If the *Agency or the* Commission does not receive any observations or does not accept the observations or the proposed alternative flat-rate, it will formally notify the beneficiary concerned the application of the initially notified flat-rate.

If the *Agency or the* Commission accepts the alternative flat-rate proposed by the beneficiary concerned, it will formally notify the application of the accepted 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 activities[18].

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.

[18] 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.

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

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 entities[19] established in an EU Member State or '**associated country**'[20], 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.

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[19] For the definition, see Article 2.1(2) of the 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 that is 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.

[20] 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.*

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

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 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 665826".

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 665826".

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) 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 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 665826".

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 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

The Agency may — up to four years after the period set out in Article 3 — object to a transfer of ownership or the exclusive licensing of results, if:

(a) it is to a third party established in a non-EU country not associated with Horizon 2020 and

(b) the Agency considers that the transfer or licence is not in line with EU interests regarding competitiveness or is inconsistent with ethical principles or security considerations.

A beneficiary that intends to transfer ownership or grant an exclusive licence must formally notify the Agency before the intended transfer or licensing takes place and:

- *identify the specific results concerned;*

- *describe in detail the new owner or licensee and the planned or potential exploitation of the results, and*

- *include a reasoned assessment of the likely impact of the transfer or licence on EU competitiveness and its consistency with ethical principles and security considerations.*

The Agency may request additional information.

If the Agency decides to object to a transfer or exclusive licence, it must formally notify the beneficiary concerned within 60 days of receiving notification (or any additional information it has requested).

No transfer or licensing may take place in the following cases:

- *pending the Agency decision, within the period set out above;*

- *if the Agency objects;*

- *until the conditions are complied with, if the Agency objection comes with conditions.*

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 Researchers[22], 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

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.

[22] 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).

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

34.1 Obligation to comply with ethical principles

The beneficiaries must carry out the action in compliance with:

(a) ethical principles (including the highest standards of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity[23] — and including, in particular, avoiding fabrication, falsification, plagiarism or other research misconduct) 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.

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.

34.2 Activities raising ethical issues

Activities raising ethical issues must comply with the '**ethics requirements**' set out in Annex 1.

Before the beginning of an activity raising an ethical issue, the coordinator must submit (see Article 52) to the *Agency* copy of:

(a) any ethics committee opinion required under national law and

(b) any notification or authorisation for activities raising ethical issues required under national law.

If these documents are not in English, the coordinator must also submit an English summary of the submitted opinions, notifications and authorisations (containing, if available, the conclusions of the committee or authority concerned).

[23] The European Code of Conduct for Research Integrity of ALLEA (All European Academies) and ESF (European Science Foundation) of March 2011.
http://www.esf.org/fileadmin/Public_documents/Publications/Code_Conduct_ResearchIntegrity.pdf

If these documents are specifically requested for the action, the request must contain an explicit reference to the action title. The coordinator must submit a declaration by each beneficiary concerned that all the submitted documents cover the action tasks.

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 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 or 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 1290/2013[24], 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.

[24] Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 December 2013 laying down the 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).

ARTICLE 37 — SECURITY-RELATED OBLIGATIONS

37.1 Results with a security recommendation

Not applicable

37.2 Classified results

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

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 665826".
>
> 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 665826".

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 the *Agency* responsibility

Any communication activity related to the action 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.

38.2 Communication activities by the *Agency*

38.2.1 Right to use beneficiaries' materials, documents or information

The *Agency* 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 that it receives 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.

However, if the *Agency's* use of these materials, documents or information would risk compromising legitimate interests, the beneficiary concerned may request the *Agency* 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* 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 1049/2001[25], without the right to reproduce or exploit;

[25] 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.

(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*.

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* will insert the following information:

> "© – [year] – [name of the copyright owner]. All rights reserved. Licensed to the *Research Executive Agency (REA)* under conditions."

38.3 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 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 45/2001[26] 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 'service specific privacy statement(s) (SSPS)' 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).

[26] 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).

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 service specific privacy statement (SSPS) (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).

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

ARTICLE 41 — DIVISION OF BENEFICIARIES' ROLES AND RESPONSIBILITIES

41.1 Roles and responsibilities 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 Articles 44, 45 and 46.

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 '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 the above-mentioned tasks to any other beneficiary or subcontract them to any third party.

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 — PENALTIES — DAMAGES — SUSPENSION — TERMINATION — FORCE MAJEURE

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

ARTICLE 42 — REJECTION OF INELIGIBLE COSTS

42.1 Conditions

42.1.1 The *Agency* will — 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).

42.1.2 The rejection may also be based on the **extension of findings from other grants to this grant**, under the conditions set out in Article 22.5.2.

42.2 Ineligible costs to be rejected — Calculation — Procedure

Ineligible costs will be rejected in full.

If the *Agency* rejects costs **without reduction of the grant** (see Article 43) or **recovery of undue amounts** (see Article 44), it will formally notify the coordinator or beneficiary concerned 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 *Agency* rejects costs **with reduction of the grant** or **recovery of undue amounts**, it will formally notify the rejection in the '**pre-information letter**' on reduction or recovery set out in Articles 43 and 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* — **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

43.1.1 The *Agency* may — **at the payment of the balance** or **afterwards** — reduce the maximum grant amount (see Article 5.1), if the action has not been implemented properly as described in Annex 1 or another obligation under the Agreement has been breached.

43.1.2 The *Agency* may also reduce the maximum grant amount on the basis of the **extension of findings from other grants to this grant**, under the conditions set out in Article 22.5.2.

43.2 Amount to be reduced — Calculation — Procedure

The amount of the reduction will be proportionate to the improper implementation of the action or to the seriousness of the breach.

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 at the time of **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 an*other* executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the *Agency* 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/EC[27] applies.

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:

{{{ {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)},

[27] 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).

minus

{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:

{{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* 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 an*other* executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the *Agency* 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* 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 an*other* executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the *Agency* 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 AND FINANCIAL PENALTIES

45.1 Conditions

Under Articles 109 and 131(4) of the Financial Regulation No 966/2012, the *Agency* may impose **administrative** and **financial penalties** if a beneficiary:

(a) has committed substantial errors, irregularities or fraud or is in serious breach of its obligations under the Agreement or

(b) has made false declarations about information required under the Agreement or for the submission of the proposal (or has not supplied such information).

Each beneficiary is responsible for paying the financial penalties imposed on it.

Under Article 109(3) of the Financial Regulation No 966/2012, the *Agency or the* Commission may — under certain conditions and limits — publish decisions imposing administrative or financial penalties.

45.2 Duration — Amount of penalty — Calculation

Administrative penalties exclude the beneficiary from all contracts and grants financed from the EU or Euratom budget for a maximum of five years from the date the infringement is established by the *Agency*.

If the beneficiary commits another infringement within five years of the date the first infringement is established, the *Agency* may extend the exclusion period up to 10 years.

Financial penalties will be between 2% and 10% of the maximum EU contribution indicated, for the beneficiary concerned, in the estimated budget (see Annex 2).

If the beneficiary commits another infringement within five years of the date the first infringement is established, the *Agency* may increase the rate of financial penalties to between 4% and 20%.

45.3 Procedure

Before applying a penalty, the *Agency* will formally notify the beneficiary concerned:

- informing it of its intention to impose a penalty, its duration or amount and the reasons why and
- inviting it to submit observations within 30 days.

If the *Agency* does not receive any observations or decides to impose the penalty despite of observations it has received, it will formally notify **confirmation** of the penalty to the beneficiary concerned and — in case of financial penalties — deduct the penalty from the payment of the balance or formally notify a **debit note**, specifying 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 may **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 an*other* executive agency (from the EU or Euratom budget).

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

(b) 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.

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

46.2.1 Conditions

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.

Each beneficiary is responsible for paying the damages claimed from it.

46.2.2 Amount of damages - Calculation

The amount the *Agency* can claim from a beneficiary will correspond to the damage caused by that beneficiary.

46.2.3 Procedure

Before claiming damages, the *Agency* will formally notify the beneficiary concerned:

- informing it of its intention to claim damages, the amount and the reasons why and

- inviting it to submit observations within 30 days.

If the *Agency* does not receive any observations or decides to claim damages despite the observations it has received, it will formally notify **confirmation** of the claim for damages and a **debit note**, specifying 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 may **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 an*other* executive agency (from the EU or Euratom budget).

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

(b) 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.

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 reports 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, in whole or in part, the pre-financing payment and interim payments for one or more beneficiaries or the payment of the balance for all beneficiaries, if a beneficiary:

(a) has committed or is suspected of having committed substantial errors, irregularities, fraud or serious breach of obligations in the award procedure or under this Agreement or

(b) 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).

48.2 Procedure

Before suspending payments, the *Agency* will formally notify the coordinator:

- 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.

During the suspension, the periodic report(s) (see Article 20.3) must not contain any individual financial statements from the beneficiary concerned. When the *Agency* resumes payments, the coordinator may include them in the next 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:

(a) if a beneficiary has committed or is suspected of having committed substantial errors, irregularities, fraud or serious breach of obligations in the award procedure or under this Agreement;

(b) if a beneficiary 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) if 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:

- 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 by the coordinator (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 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 and 40) 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 **calculate** — on the basis of the periodic reports, the termination report and the report on the distribution of payments — if the (pre-financing and interim) payments received by the beneficiary concerned exceed the beneficiary's EU contribution (calculated by applying the reimbursement rate(s) to the eligible costs declared by the beneficiary 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.

- 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 is 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 and 40) 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 affecting the EU's financial interests;

(l) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has — in the award procedure or under the Agreement — committed:

(i) substantial errors, irregularities, fraud or

(ii) serious breach of obligations, including improper implementation of the action, submission of false information, failure to provide required information, breach of ethical principles;

(m) a beneficiary 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**').

50.3.2 Procedure

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

- 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 **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), and (l.ii) 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 by the coordinator.

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 the 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 and financial penalties (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 and 40) 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 **calculate** — on the basis of the periodic reports, the termination report and the report on the distribution of payments — if the (pre-financing and interim) payments received by the beneficiary concerned exceed the beneficiary's EU contribution (calculated by applying the reimbursement rate(s) to the eligible costs declared by the beneficiary 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.

- 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 the amount unduly received, 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 and 40) 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.

Until the payment of the balance: all communication must be made through the electronic exchange system and using the forms and templates provided there.

After the payment of the balance: formal notifications must be made by registered post with proof of delivery ('formal notification on paper').

Communications in the electronic exchange system must be made by persons authorised according to the 'Terms and Conditions of Use of the electronic exchange system'. 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 Terms and Conditions of Use of the electronic exchange system).

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 following address:

Research Executive Agency (REA)
Spreading Excellence, Widening Participation, Science with and for Society
COV2 02/040
B-1049 Brussels Belgium

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 '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

Nothing in the Agreement may be interpreted as a waiver of any privileges or immunities accorded to the UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION - UNESCO by its constituent documents or international law.

ARTICLE 54 — CALCULATION OF PERIODS, DATES AND DEADLINES

In accordance with Regulation No 1182/71[28], 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.

[28] 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).

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;
- 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.

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 *except for UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION -UNESCO.*

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, for the following beneficiaries:

- *UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION - UNESCO*

such disputes must — if they cannot be settled amicably — be referred to arbitration.

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 or financial penalties, 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 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

Research Executive Agency (REA)

Spreading Excellence, Widening Participation, Science with and for Society

ANNEX 1 (part A)

Research and Innovation action

NUMBER — 665826 — PERFORM

Table of Contents

1.1. The project summary

Project Number [1]	665826	Project Acronym [2]	PERFORM

One form per project

General information	
Project title [3]	Participatory Engagement with Scientific and Technological Research through Performance
Starting date [4]	The first day of the month after the signature by the Commission
Duration in months [5]	36
Call (part) identifier [6]	H2020-SEAC-2014-1
Topic	SEAC-1-2014 Innovative ways to make science education and scientific careers attractive to young people
Fixed EC Keywords	Responsible Research and Innovation (RRI), Science education, Training, Science Communication
Free keywords	Participatory action-research; Science and arts-based education approach; Secondary schools; Young people's engagement

Abstract [7]

The PERFORM consortium aims to investigate the effects of the use of innovative science education methods based on performing arts in fostering young peoples' motivations and engagement with science, technology, engineering, and mathematics (STEM) in selected secondary schools in France, Spain and the United Kingdom. A considerable percentage of young people in Europe is not interested in STEM careers mainly because they perceive that they lack the skills to deal with such topics. Such negative perceptions discourage adolescents from investing time in learning about science and undervalue the role of science in society. Addressing the challenge of engaging young people in STEM has never been more urgent in Europe in order to avoid loss of scientific talent and to ensure future innovation capability, excellence and competitiveness. PERFORM takes action to overcome the remaining distance between young people and science and to break the unidirectional model of scientific knowledge transfer. PERFORM will explore a creative, participatory educational process on STEM through the use of scenic arts with secondary school students, their teachers and early career researchers, who will get actively involved in experiencing science. They will also reflect on their own role in the interaction between science and society, and the values embedded in Responsible Research and Innovation. PERFORM will analyse how such human-centred, science-arts educational approach contributes to foster girls' and boys' motivations towards science learning and strengthen the transversal competences they will need for STEM careers and jobs. The education and communication skills required for teachers and researchers to further replicate the educational process will be explored and addressed in specific training toolkits. The project dissemination will be fulfilled by ensuring strong science-policy links and by linking PERFORM with Scientix.

1.2. List of Beneficiaries

Project Number [1]	665826	Project Acronym [2]	PERFORM

List of Beneficiaries

No	Name	Short name	Country	Project entry month[8]	Project exit month
1	UNIVERSITAT AUTONOMA DE BARCELONA	UAB	Spain	1	36
2	THE BIG VAN THEORY	TBVT	Spain	1	36
3	UNIVERSITY OF BRISTOL	UoB	United Kingdom	1	36
4	SCIENCE MADE SIMPLE LIMITED	SMS	United Kingdom	1	36
5	THE UNIVERSITY OF WARWICK	UoW	United Kingdom	1	36
6	L'ATELIER DES JOURS A VENIR	AJA	France	1	36
7	LES ATOMES CROCHUS	LAC	France	1	36
8	UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION -UNESCO	UNESCO	France	1	36
9	EUSEA - EUROPAISCHE GESELLSCHAFT FUR WISSENSCHAFTSVERANSTALTUNGEN	EUSEA	Austria	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	Project coordination and management	1 - UAB	24.00	1	36
WP2	Innovative science education methods based on performing arts	2 - TBVT	104.00	1	36
WP3	Building science education and communication capacity for teachers and early career researchers	3 - UoB	53.00	1	36
WP4	Impact assessment of the participatory educational process in students' engagement in and learning about science	1 - UAB	75.00	1	36
WP5	Sustainability and Policy Impact	8 - UNESCO	28.00	1	36
WP6	Dissemination and Outreach	9 - EUSEA	34.00	1	36
		Total	318.00		

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	Internal communication strategy and intranet	WP1	1 - UAB	Websites, patents filling, etc.	Confidential, only for members of the consortium (including the Commission Services)	4
D1.2	Risk management plan	WP1	1 - UAB	Report	Public	6
D1.3	Evaluation Report of the Advisory Board	WP1	1 - UAB	Report	Public	24
D1.4	Data Management Plan	WP1	1 - UAB	Report	Public	6
D2.1	Final protocol of tested methods to transform a performance-based activity into a PERSEIA	WP2	2 - TBVT	Report	Public	16
D2.2	Final protocol of tested methods to generate a transformative participatory educational process by using science and arts-based education approaches	WP2	2 - TBVT	Report	Public	30
D2.3	Guidelines for PERSEIA adaptation to science-museums	WP2	2 - TBVT	Report	Public	36
D3.1	Toolkit for researchers wanting to develop PERSEIAs	WP3	3 - UoB	Other	Public	33
D3.2	Toolkit for teachers wanting to develop PERSEIAs	WP3	3 - UoB	Other	Public	36
D4.1	Research report: Methodological aspects of science education assessment	WP4	1 - UAB	Report	Public	7
D4.2	Report on social media responses to science performances	WP4	5 - UoW	Report	Public	35
D4.3	Policy brief: Effective science and arts-based education approach	WP4	1 - UAB	Report	Public	36

Deliverable Number [14]	Deliverable Title	WP number [9]	Lead beneficiary	Type [15]	Dissemination level [16]	Due Date (in months) [17]
D5.1	Sustainability plan	WP5	8 - UNESCO	Report	Public	15
D5.2	Two policy briefs on WP5 related topics	WP5	8 - UNESCO	Report	Public	34
D6.1	Plan for communication, dissemination and exploitation	WP6	9 - EUSEA	Report	Public	4
D6.2	Website and social media launch	WP6	9 - EUSEA	Websites, patents filling, etc.	Public	6
D6.3	Report on outreach activities, including the final conference	WP6	9 - EUSEA	Report	Public	35

1.3.3. WT3 Work package descriptions

Work package number [9]	WP1	**Lead beneficiary** [10]	1 - UAB
Work package title	Project coordination and management		
Start month	1	**End month**	36

Objectives

The WP1 aims to coordinate and manage the PERFORM project's research tasks, partners and resources in a way to bring the successful completions of the general and specific project objectives. Specifically, this WP has the following objectives:
- To achieve an efficient coordination of both research and technical activities and overall progress of the project.
- To perform all legal, financial and administrative obligations and tasks according to the rules stated in the project's contract.
- To provide support on the establishment of technical and scientific discussion
- To design and maintain a sound and effective internal communication strategy.
- To link PERFORM to other European research science education projects.

Description of work and role of partners

WP1 - Project coordination and management [Months: 1-36]
UAB, TBVT, UoB, SMS, UoW, AJA, LAC, UNESCO, EUSEA
Task 1.1. Project management (led by UAB)
The organizational structure of PERFORM is carefully designed to best fulfill the objectives of the project. This will be achieved via ordering and timing of the different Work Packages (WPs), and their relations with one another.
The Coordination Team (CT) will be in charge to coordinate and supervise a proper legal, technical and financial management, providing support to the consortium members on reporting.
In particular, the UAB will be responsible for coordinating and overseeing:
- Legal issues related with the accomplishment and amendments of the Grant Agreement, the fulfillment and eventual modifications of the Consortium Agreement, and the use of Non Disclosure Agreements if needed.
- Budget expenditure of the project and efforts reporting according to the grant contract conditions and the project work plan. Furthermore, the General Assembly (GA) member of every partner will be responsible for surveying the financial expenses of the respective partner and will enable the generation of certificates on financial statements and audits, when necessary.
The financial administration and money transfer to partners will be done by the UAB as PERFORM coordinator for the overall project according to the EC Grant Agreement conditions.
A sound follow-up of project activities will be supported by project meetings. Consortium meetings with all representatives (GA) will be held every 18 months (i.e., kick-off meeting in Barcelona, intermediate meeting in Bristol and final meeting in Paris). Furthermore, every 6 months a project factsheet (including planning, project progress, main results, and estimation of occurred costs) will be sent to the CT. Also, working group meetings between specific partners and additional GA meetings will take place when necessary.
Finally, the CT will be in charge to ensure a sound and effective communication with the EC officers all along the project duration.

Task 1.2. Facilitation of the consortium communication (led by UAB)
The CT and the GA will be responsible of ensuring in-time and adequate data exchange between the different WPs.
An intranet (internal website) will be developed at the beginning of the project in order to allow dynamic follow-up of managerial components of the project by facilitating partners' tasks, exchange of information and communication. The intranet will be linked to the website generated by EUSEA in WP6. In particular, use of e-communication means (mail, web and telephone conferences) will be enhanced between partners, and – when required - videoconferences. The UAB will ask partners for their inputs and archive all management documents in the intranet to allow a dynamic follow-up of managerial components of the project.
Additionally, GA meetings and SC video conferences held during the project timeframe will contribute to strengthening the consortium partners' communication and collaboration.

Task 1.3. Scientific coordination and project monitoring (led by UAB)

The CT, with the support of the GA will perform the monitoring of the general execution of the project through assessing the work progress against the project aims and deliverables to assure and guarantee for the quality of the whole project. In particular, in order to ensure a quality control of project's progress, especially in terms of the deliverables, different monitoring activities will be implemented and internal processes will be established within the consortium with this specific aim. In particular, the quality of the work conducted will be evaluated constantly at different levels.
First, an internal interim report will be developed by each WP leader and submitted to the Steering Committee (SC) each 6 months in order to monitor the partners' performance, follow-up on the effort consumption, track deviations of the work plan, provide assessment and implement solutions if needed. Furthermore, in order to strengthen the quality of PERFORM results, an internal peer-review of the deliverables will be carried out before they are approved by the GA and submitted to the EC. The review will be carried out by a restricted number of project partners not involved in the generation of the deliverable that will provide feedback in terms of completeness and quality.
Also, a mid-term assessment of the project will be performed by all consortium members halfway through the project, evaluating the degree of completion of the project's objectives, the submission of deliverables, the expectations of the stakeholders, etc. through the implementation of specific performance indicators.
Finally, during the second half of the project, the Advisory Board will be in charge to evaluate PERFORM progress on the basis of results of the mid-term assessment and the analysis of the main project outputs. This evaluation will generate an Evaluation Report including comments and recommendations on achieved results and objectives, which will represent a key input to improve and/or adapt PERFORM development.
As an additional tool to ensure a sound project monitoring, a risk management plan will be also generated during the first year of PERFORM and implemented along the project life in order to foresee the main risks related with management issues and identify the corresponding potential responses or mitigation actions..

Task 1.4. Links to STEM education research projects and networks at European level (led by UAB)
The CT will identify and maintain regular communication to STEM education research projects and networks that focus on the PERFORM concept and approach through establishing direct communication with members of the European network Community for Science Education in Europe (Scientix) and participating in Scientix networking events in order to promote scientific collaboration.
In doing that, joining efforts among science education researchers will be created in order to: 1) develop sound research on science education, and 2) generate innovative performance-based science education activities and toolkits for training teachers that contribute to effectively engaging young people with science across Europe.
Such research links will feed the dissemination and outreach activities led by EUSEA in WP6.

Participation per Partner

Partner number and short name	WP1 effort
1 - UAB	16.00
2 - TBVT	1.00
3 - UoB	1.00
4 - SMS	1.00
5 - UoW	1.00
6 - AJA	1.00
7 - LAC	1.00
8 - UNESCO	1.00
9 - EUSEA	1.00
Total	24.00

List of deliverables

Deliverable Number [14]	Deliverable Title	Lead beneficiary	Type [15]	Dissemination level [16]	Due Date (in months) [17]
D1.1	Internal communication strategy and intranet	1 - UAB	Websites, patents filling, etc.	Confidential, only for members of the consortium (including the Commission Services)	4
D1.2	Risk management plan	1 - UAB	Report	Public	6
D1.3	Evaluation Report of the Advisory Board	1 - UAB	Report	Public	24
D1.4	Data Management Plan	1 - UAB	Report	Public	6

Description of deliverables

• D.1.1. Internal communication strategy and intranet (M4). An internal communication tool will be developed to regulate the administrative communication as well as an intranet to facilitate the flow of information between all members of the consortium.
• D.1.2. Risk management plan (M6). A risk management plan will be developed to foresee management potential risks and conflicts, estimate impacts, and define responses in order to achieve a resolution.
• D.1.3. Evaluation Report of the Advisory Board (M24). The members of the Advisory Board will elaborate a report whose recommendations, based on achieved results, will provide feedback to improve and eventually adapt PERFORM further actions.
• D.1.4. Data Management Plan (M6). In order to attend the requirements of the pilot action on open access to research data, a Data Management Plan (DMP) in which the consortium will specify what data will be open.

D1.1 : Internal communication strategy and intranet [4]

An internal communication tool will be developed to regulate the administrative communication as well as an intranet to facilitate the flow of information between all members of the consortium

D1.2 : Risk management plan [6]

A risk management plan will be developed to foresee management potential risks and conflicts, estimate impacts, and define responses in order to achieve a resolution.

D1.3 : Evaluation Report of the Advisory Board [24]

The members of the Advisory Board will elaborate a report whose recommendations, based on achieved results, will provide feedback to improve and eventually adapt PERFORM further actions

D1.4 : Data Management Plan [6]

In order to attend the requirements of the pilot action on open access to research data, a Data Management Plan (DMP) in which the consortium will specify what data will be open.

Schedule of relevant Milestones

Milestone number [18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS3	Mid-term internal evaluation	1 - UAB	18	Use of a specific set of indicators
MS6	Links to Scientix	1 - UAB	30	Participation in Scientix networking events and

Schedule of relevant Milestones

Milestone number [18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
				presence of Scientix members in PERFORM events

Work package number [9]	WP2	Lead beneficiary [10]	2 - TBVT
Work package title	Innovative science education methods based on performing arts		
Start month	1	End month	36

Objectives

This WP will explore new methodologies to develop PERformance-based Science Education Innovative Activities (PERSEIA) using applied drama and targeting young people. The aim is to engage young people in STEM through direct interaction with early career researchers and teachers in an environment that reinforces the human dimension of science and includes the values embedded in the RRI.
The specific objectives of WP2 are:
- To identify and include key education and communication tools in drama-based activities, that address the human dimension of science, young people's interests in STEM and the RRI values.
- To generate a participatory process based on PERSEIA, involving young people, teachers and early career researchers with the aim of providing young people with transversal competences needed to pursue STEM careers, with a special emphasis on girls.
- To up-scale resulting PERSEIA methodological approach to informal teaching and learning contexts, and specifically to science museums.

Description of work and role of partners

WP2 - Innovative science education methods based on performing arts [Months: 1-36]
TBVT, UAB, UoB, SMS, UoW, AJA, LAC
Task 2.1. Inclusion of the "human dimension" of science and the values embedded in RRI in performance-based activities (led by TBVT)
In an initial stage of the project, deliberative focus groups with selected secondary school students and teachers will be organised in each of the three case studies in order to collectively reflect about the concerns, needs and expectation of young people in STEM education, as well as their interests on relevant scientific topics related to current EU societal challenges. Specifically, and to allow for comparison, each case study will involve two secondary schools from low socio-economic contexts and two secondary schools from medium socio-economic contexts along the entire project. Schools will give their prior and informed consent and ethical approval of the activities to be performed and students will be asked for returning a signed parental consent form for participating in the project. The involvement of secondary schools and teachers in the project will be encouraged through non-economic and/or economic incentives (education material for schools, punctual payments and/or official recognition for teachers by the corresponding public administration).
Focus groups will be led by case study coordinators (LAC in France, TBVT in Spain and SMS in UK). The topics for discussion in workshops will be related to the RRI values: gender inequality and girl's barriers in STEM (with the support of UNESCO's Women in Science L'Oreal Programme); science-related stereotypes; two-way dialogue between scientists and the society; ethical issues in scientific research; the role of entrepreneurial and multidisciplinary research careers in labour market. TBVT, with the support of LAC and SMS, will lead the qualitative content analysis of the collective discussions generated during the focus groups. The result will be an integrated methodological protocol to develop performance-based activities based on the drama approaches of local partners' expertise: clown by LAC, stand-up comedy by TBVT and street theatre (science busking) by SMS. The protocol will include the topics listed above and provide effective tools to generate a fluid two-way dialogue between students and the researchers during the performance. Such dialogue will provide student reflection about researchers as role models, gender inequalities and ethical issues in STEM careers and scientific research.
LAC, SMS and TBVT will follow the developed methodological protocol to design specific PERSEIA that will be tested with a sample of students from 10 to 16 different secondary schools (from low and medium socio-economic contexts) in each case study, that will also be asked for giving their free, prior and informed consent, as well as student's parental consent. These secondary schools will be selected from the UNESCO's network of associated schools (ASPnet) to ensure their interest in the project.
During one year, the two-way dialogue generated during PERSEIA execution will be encouraged by using social networks (i.e., Twitter) to foster further students' engagement in and learning about scientific topics of their interest. Such interaction will be analysed by WP4.

Task 2.2: Participatory process with young people, teachers and early career researchers (led by TBVT)

In a second stage of the project, LAC, TBVT and SMS will conduct an interactive and self-mobilization participatory process with secondary school students, their teachers and early career researchers in each case study with the aim of assisting students in developing their own PERSEIA, following the methodological protocol generated in Task 2.1. To achieve it, a total of 120 students in each case study (30 students per school) will be actively involved in five participatory workshops to develop their own PERSEIAs and the activities further implementation.
Participatory workshops will address the following topics and their corresponding methodological protocols will be previously developed by the following PERFORM partners:
1. Selection of relevant scientific topics that address societal challenges: TBVT
2. Critical thinking and self-reflection: AJA-TBVT
3. Interaction between arts and the scientific method: UAB-TBVT
4. Gender issues (leadership, entrepreneurship, digital skills): TBVT-UNESCO
5. Performing skills: LAC-SMS-TBVT
TBVT will lead the collection, revision and integration of the individual protocols into a common protocol in order to implement participative workshops with young people, teachers and early career researchers.
As in task 2.1 the two-way dialogue between students and researchers will be encouraged using the social networks. The involvement of researchers in workshops and online dialogue with students will be encouraged through punctual payments.
Students will finally execute the generated PERSEIAs in their own schools, becoming agents to engage and to motivate other youngsters to approach STEM. Results from the qualitative content analysis of the collective discussions generated during the participatory process and from the assessment conducted in WP4 will assist TBVT, with the support of LAC and SMS, to generate an integrated methodological protocol to implement PERSEIA by students, teachers and early career researchers through a participative process.

Task 2.3. Pilot PERSEIA scaled up into informal context: implementation in science museums (led by TBVT)
This task will foster the implementation of PERSEIAs developed in formal contexts to science museums. LAC, SMS and TBVT will identify science educational activities conducted in local science museums and addressed to secondary school students in order to explore the best approach to adapt PERSEIAs to an informal learning and teaching contexts. A knowledge-transfer workshop based on the previous findings, and with the participation of science museum facilitators, will be conducted at a science museum in one of the case studies that will be contacted by TBVT at the beginning of the project (preferably from the ECSITE network). This will allow for designing integrated methodological guidelines to adapt PERSEIAs to science museums activities. These guidelines will be further developed by science museum practitioners once the project is finished.

Participation per Partner

Partner number and short name	WP2 effort
1 - UAB	4.00
2 - TBVT	42.00
3 - UoB	7.00
4 - SMS	30.00
5 - UoW	2.00
6 - AJA	1.00
7 - LAC	18.00
Total	104.00

List of deliverables

Deliverable Number [14]	Deliverable Title	Lead beneficiary	Type [15]	Dissemination level [16]	Due Date (in months) [17]
D2.1	Final protocol of tested methods to transform a performance-based activity into a PERSEIA	2 - TBVT	Report	Public	16
D2.2	Final protocol of tested methods to generate a transformative participatory educational process by using science and arts-based education approaches	2 - TBVT	Report	Public	30
D2.3	Guidelines for PERSEIA adaptation to science-museums	2 - TBVT	Report	Public	36

Description of deliverables

• D.2.1. Final protocol of tested methods to transform a performance-based activity into a PERSEIA (M16). With the knowledge attained in the workshops developed in task 2.1 and including all case studies, WP2 will generate a detailed protocol on how to take in the most relevant aspects (the human dimension of science, RRI values) in a performance-based activity to develop a PERSEIA in different UE contexts.
• D.2.2. Final protocol of tested methods to generate a transformative participatory educational process by using science and arts-based education approaches (M30). A methodological protocol to generate participatory educational between students, teachers and early career researchers in formal contexts will be developed with the aim of designing and executing PERSEIAs. The protocol will explain effective approaches to promote a mutual learning scenario between scientific and educational communities that will lead students to the development of PERSEIA.
• D.2.3. Guidelines for PERSEIA adaptation to science-museums (M36). The guidelines will address the key aspects to efficiently develop PERSEIAs in informal education context.

D2.1 : Final protocol of tested methods to transform a performance-based activity into a PERSEIA [16]

With the knowledge attained in the workshops developed in task 2.1 and including all case studies, WP2 will generate a detailed protocol on how to take in the most relevant aspects (the human dimension of science, RRI values) in a performance-based activity to develop a PERSEIA in different UE contexts.

D2.2 : Final protocol of tested methods to generate a transformative participatory educational process by using science and arts-based education approaches [30]

A methodological protocol to generate participatory educational between students, teachers and early career researchers in formal contexts will be developed with the aim of designing and executing PERSEIAs. The protocol will explain effective approaches to promote a mutual learning scenario between scientific and educational communities that will lead students to the development of PERSEIA.

D2.3 : Guidelines for PERSEIA adaptation to science-museums [36]

The guidelines will address the key aspects to efficiently develop PERSEIAs in informal education context

Schedule of relevant Milestones

Milestone number [18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS5	Inclusion of the RRI values	2 - TBVT	26	Participatory workshops of the performance-based science education methodologies

Work package number [9]	WP3	Lead beneficiary [10]	3 - UoB
Work package title	Building science education and communication capacity for teachers and early career researchers		
Start month	1	End month	36

Objectives

This WP focuses on the sharing of knowledge and skills relevant to teachers and early career researchers to develop performance-based science education activities; and on the development of training resources in this area. The main objectives are:
- To identify the relevant skills, knowledge and approaches needed to design and implement performance-based activities to engage young people with research and to and facilitate mutual learning amongst partners and external experts.
- To develop training modules and guidelines for researchers and teachers based on the results of the research carried in the first phase of implementation of PERSEIA activities, in order to prepare them to independently carry out the PERSEIA activities and to develop cross disciplinary skills associated with the PESEIAs such as communication and engagement skills, team working, a more holistic and interdisciplinary understanding of research including RRI values and social inclusion, amongst others.

Description of work and role of partners

WP3 - Building science education and communication capacity for teachers and early career researchers
[Months: 1-36]
UoB, UAB, TBVT, SMS, UoW, AJA, LAC
Task 3.1. Development of knowledge sharing workshop on performance-based activities and RRI values (led by UoB)
In a first phase of the project, the partners will collectively identify the skills and knowledge needed for the production and development of PERSEIAs. Each partner will also reflect on their own range of expertise. Based on this information, a knowledge sharing workshop will be organized where secondary school students, teachers and early career researchers as well as external experts on fields identified previously as relevant to PESEIAs will be brought together to inform and train the partners. The workshop will also offer an opportunity for the different partners to share their relevant knowledge and experience. Some of the skills to be developed may involve, for example, performance skills, working with schools and teenagers, participatory approaches, ethics in participatory research, evaluation, responsible research and innovation.
The information collated during this workshop will inform each partner's development of their PERSEIAs and will be used as a basis – subject to evaluation - for tasks 3.2 and 3.3.

Task 3.2. Development of training and guidelines for researchers (led by UoB)
The research and evaluation carried out during the first phase of developing PERSEIAs will inform the development of training, toolkits and guidelines for researchers interested in using performance based approaches in engaging with young people.
The training courses will be developed as a collaboration between UoB, AJA and UoW in order to benefit from the expertise of these partners in public engagement and training of early career researchers, on reflexivity of the research practice (social dimension of science) and in evaluation.
The specific topics for both trainings will depend on the results of the research done during the implementation of the PESEIAs (Task 2.2), but we envisage training in social aspects of science and reflexivity on the research practice, performance skills, communication skills, working with teenagers, working with schools, gender equality issues, and ethics amongst others. The training on these skills will be organised in the best way for the early career researchers to make the most of it, for example, we envisage having training on reflexivity on research practice before performance skills as that will improve the quality of the performance and avoid perpetuating a deficit-model type of science communication.
The first year, an initial training course (based on results from task 3.1 and 2.1) will be developed and piloted with the University of Bristol's Centres for Doctoral Training offered as weekly sessions over a period of several months. These Centres provide multidisciplinary training and researcher development for PhD students; Bristol has one of the largest concentrations of these Centres in the UK. Prior to this training, participants will take part in a summer school organized by AJA, aimed to enhance reflexivity on their research practice (social dimension of research, issues of integrity, responsibility, social outreach). Regarding participants to PERSEIA activities in France and Spain, a common training will be offered in an intensive format (one week summer school), delivered both by AJA & UoB.

Formative and summative evaluation of the initial training for researchers will be conducted by UoW and UoB, and will inform the development of a second training course to ensure the design and content are appropriate and that the training is effective. The second version of the training course will be delivered during the second year of the project following the same format of a summer school and weekly training in the UK and two intensive trainings in France and Spain. The early career researchers participating in the training will be offered the opportunity to take part in the development and implementation of PESEIAs but for those who decide not to get involved the training will have provided them with valuable personal development skills (such as resilience or confidence) useful in the employability agenda in higher education and in their future careers as engaged researchers. We will strongly encourage researchers to participate in PESEIAs and we expect a take up of about 30% to do so.
A first toolkit for early career researchers/engagement professionals will be developed as the result of the first trainings and on the evaluation carried out on it. This toolkit will be tested and evaluated during the second round of trainings and with the results a final and improved version of the toolkit will be developed. The toolkit will include background information on PERESIAS, guidelines on how to develop the skills identified as essential for PESEIAs and a collection of case studies and best practices resulting from the PERSEIA activities developed in the different participating countries as well as tips on how to implement them. The toolkit will be designed for institutions of Higher Education, , research institutes and any other institutions in charge of the training of researchers.

Task 3.3. Development of training and guidelines for teachers (led by UoB)
In parallel to the development of training and guidelines for early career researchers and using the results from the research done on the first phase of implementation of PESEIAs, UoB and AJA will develop a first version of training and guidelines for teachers (both from science and drama background) interested in using performance based approaches in engaging with students.
A first training will be developed and tested with secondary school teachers in Bristol, with special emphasis on working with schools from socially deprived areas. Following this pilot training, other trainings for teachers will be organised in each of the countries involved in the project in close collaboration with local partners.
In the same way as in the training for early career researchers, formative and summative evaluation of the initial training for teachers will be conducted by UoB, and will inform the development of a second training course to ensure the design and content are appropriate and that the training is effective. The second version of the training will be delivered during the second year of the project by the local partners involved in the project.
The topics for the training will depend on the results of the first implementation of the PESEIAs (Task 2.2), but we envisage training in performance skills, communication, working with researchers, cutting edge research and its related social aspects and ethics including gender equality issues.
A first toolkit for teachers wanting to develop PESEIAs will be developed as the result of the first trainings and on the evaluation carried out on them. This toolkit will be tested and evaluated during the second round of trainings and with the results a final and improved version of the toolkit will be developed. The toolkit will include background information on PERSEIAs, guidelines on how to work with students on the skills identified as essential to develop PERSEIAs and a collection of case studies and best practices resulting from the PERSEIAs developed in the different participating countries as well as tips on how to implement them.

Participation per Partner

Partner number and short name	WP3 effort
1 - UAB	3.00
2 - TBVT	4.00
3 - UoB	31.00
4 - SMS	2.00
5 - UoW	6.00
6 - AJA	6.00
7 - LAC	1.00
Total	53.00

List of deliverables

Deliverable Number [14]	Deliverable Title	Lead beneficiary	Type [15]	Dissemination level [16]	Due Date (in months) [17]
D3.1	Toolkit for researchers wanting to develop PERSEIAs	3 - UoB	Other	Public	33
D3.2	Toolkit for teachers wanting to develop PERSEIAs	3 - UoB	Other	Public	36

Description of deliverables

• D.3.1. Toolkit for researchers wanting to develop PERSEIAs (M33). The toolkit will include background information, guidelines on how to develop the skills needed as well as on the practicalities of setting up and resourcing a PESEIAs project and case studies and best practices resulting from PERFORM.
• D.3.2. Toolkit for teachers wanting to develop PERSEIAs (M36). The toolkit will include background information, guidelines on how to develop the skills needed as well as on the practicalities of setting up and resourcing a PESEIAs project and work with the students, and case studies and best practices resulting from PERFORM.

D3.1 : Toolkit for researchers wanting to develop PERSEIAs [33]

The toolkit will include background information, guidelines on how to develop the skills needed as well as on the practicalities of setting up and resourcing a PESEIAs project and case studies and best practices resulting from PERFORM.

D3.2 : Toolkit for teachers wanting to develop PERSEIAs [36]

The toolkit will include background information, guidelines on how to develop the skills needed as well as on the practicalities of setting up and resourcing a PESEIAs project and work with the students, and case studies and best practices resulting from PERFORM.

Schedule of relevant Milestones

Milestone number [18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	Selection of the specific training skills to be developed	3 - UoB	5	Knowledge sharing workshop

Work package number [9]	WP4	Lead beneficiary [10]	1 - UAB
Work package title	Impact assessment of the participatory educational process in students' engagement in and learning about science		
Start month	1	End month	36

Objectives

The aim of this WP is to monitor and to assess the effectiveness of the participatory educational process, including the performance-based science education activities, in raising the appeal of STEM for girls and boys by fostering their engagement, learning and the acquisition of transversal competences needed for scientific careers. This is directly related to the core of the project, as general goal 1 aims at leading students to explore, understand and learn about the human dimension of STEM through the different activities developed in WP2. Such assessment will combine state-of-the-art methodologies and technologies of social research.
Specific goals are the following:
- To identify and robustly investigate individual, contextual and methodological factors contributing to or detracting from the impacts of the participatory process in girls' and boys' learning and engagement in science.
- To systematically evaluate the quality and quantity of social-media-based impacts stemming from the science education activities based on performing arts on students' feelings, perceptions and attitudes towards science, and their views about the appeal of scientific careers.
- To assess the impact of the participatory process in promoting students' acquisition of transversal competences and skills (digital, civic, and entrepreneurship) that will allow them to engage in scientific ideas and practices.
- To assess the role of the participatory process developed through the project in embedding the values of the RRI approach.
PERFORM will treat any personal information connected to the audience response data with a high level of consideration, courtesy, privacy and ethical practice (as detailed in section 5).

Description of work and role of partners

WP4 - Impact assessment of the participatory educational process in students' engagement in and learning about science [Months: 1-36]
UAB, TBVT, SMS, UoW, AJA, LAC
Task 4.1. Development of an innovative and participatory impact assessment research methodology (led by UAB)
The methodology design will combine mixed methods and technology in a broad time framework, including assessment prior to, simultaneous and subsequent to the participatory process of creating and implementing the science education activities based on performing arts.
The UAB, with the support of UoW, will generate a set of expert-based assessment indicators on the grounds of literature review on transdisciplinary assessment frameworks (educational psychology, science communication, sociology, performance-based approaches, among others). This literature review will provide a grounding to define the evaluation criteria and design the data collection instruments to qualitatively and quantitatively analyze in a systematic way the impact of PERFORM activities on students' motivations and appeal for scientific careers.
Furthermore, special attention will be paid to the inclusion of students, and specially girls, in the evaluation process through participatory assessment methods. Each case study coordinator (LAC, TBVT and SMS), supported by UAB and UoW, will develop a workshop in the correspondent country to include the criteria and indicators that students consider important to the assessment of the impact of the project. Such approach will contribute to students' active engagement in the evaluation process, while including their voices and values, and thus, complementing the expert-based indicators.

Task 4.2. Evaluation of the social media-based impacts of the performance events on young people's engagement in science (led by UoW)
UoW will systematically evaluate the quality and quantity of social media-based impacts stemming from the students' participation in the performance events on their feelings, perceptions and attitudes towards science and researchers, and their views about the appeal of scientific careers.
Students' reception of PERFORM engagement activities will be mediated through platforms such as Twitter. The UoW team will develop a social media analysis tool that will initially require the development of a manually annotated corpus tuned and calibrated to discourse about science performances (different research assistants will analyse the same content independently). Iterative testing and improvement of the tool will then ensure its validity and reliability. The tool will pull tweets related to the different PERFORM activities from the social media Application-Programming Interface (API)

for processing. The tool will categorise responses according to specific 'impact' categories derived from the online ethnography results and a communication expert engaged in the project as an Advisory Board member. A small-scale, exploratory, online ethnography case study will be conducted through online interactions/content creation, interviews and content analysis of related material, led by a multi-lingual set of researchers. In addition to paying close attention to social and technological practices visible within youngster's social media discourse about science performances, an analysis of the nature of conversation within this distinctive communication setting will be also conducted.
In parallel, UoW will conduct qualitative interviews with a small sample of young people who have contributed their views on Twitter. Skype and telephone will be used in order to minimize cost.

Task 4.3. Evaluation of the acquisition of transversal competences by students during the educational process (led by UAB)
The UAB team will assess the extent of the students' involvement in the educational process through their active participation in PERSEIAs promotes changes in the way they engage in social and civic competences (e.g., critical and creative thinking), sense of initiative (i.e., entrepreneurship), and learning to learn (i.e., self-reflection, scientific method-approach).
For that purpose, UAB will combine systematic observation, interviews, and deliberative focus groups to analyse their perceptions and skills to study STEM and related careers. During selected WP2 workshops, systematic observation will be conducted and specific moments for collective reflection will be also provided in order to capture and retain students' experiences and appreciations along the process. UAB will also have formal data recorded in video and audio formats in order to compare over time and track processes within (e.g., decision-making or gender-balanced participation). To triangulate data sources while increasing the probability of in-depth understanding of the learning process, teachers and early career researchers involved in the process will be also interviewed about their perceptions on students' attitudinal changes and skill improvement at school.
Specifically, UAB will assess framing effects from different performance content, medium effects from diverse performance approaches and facilitator effects, including their capacity to connect with students, to stimulate the acquisition of such transversal competences. Data on individual and contextual factors such as students' demographics (e.g. gender, age, socio-economic status) will also be gathered and analysed to monitor such factors.

Task 4.4. Assessment of the Responsible Research and Innovation values (led by UAB)
The UAB team will evaluate the capacity of the participatory educational process to transmit the RRI values through the resultant science performances. The parameters analysed will be: a) the inclusiveness of all participants (i.e., students, teachers, and researchers) and its balanced participation in terms of gender equality, b) the ability to booster creative and critical thinking, c) fostering dialogue and learning between students and early career researchers, and d) the inclusion of ethical issues, such as social relevance of topics addressed, respect for cultural diversity, or participants' acceptation of the process and outcomes. WP4 will also measure the impact of the project's RRI approach in students' attitudes and pro-scientific behaviour and learning. Furthermore, performance's capacity to combine rigorous scientific content with aesthetic quality, which is considered as a key feature to achieve effective results, will be also analysed.
This assessment will be conducted through a triangulation of methods: surveys and informal interviews to key participants and systematic observation (described in Task 4.3). Pre- and post- surveys will be conducted at the beginning and the end of the participatory educational process in each case study whereas interviews and observation will be conducted during WP2 workshops. Framing effects from different performance content, medium effects from different performance approaches and facilitator effects (i.e., facilitators' capacity to stimulate inquiry learning or to mobilise emotions), will be also assessed. Data will be comparatively analysed considering gender and socio-economic factors. Case study coordinators will support UAB to ensure proper implementation and data collection in each case study.

Participation per Partner

Partner number and short name	WP4 effort
1 - UAB	54.00
2 - TBVT	3.00
4 - SMS	2.00
5 - UoW	14.00
6 - AJA	1.00
7 - LAC	1.00

Partner number and short name	WP4 effort
Total	75.00

List of deliverables

Deliverable Number [14]	Deliverable Title	Lead beneficiary	Type [15]	Dissemination level [16]	Due Date (in months) [17]
D4.1	Research report: Methodological aspects of science education assessment	1 - UAB	Report	Public	7
D4.2	Report on social media responses to science performances	5 - UoW	Report	Public	35
D4.3	Policy brief: Effective science and arts-based education approach	1 - UAB	Report	Public	36

Description of deliverables

• D.4.1 Research report: Methodological aspects of science education assessment (M7). UAB will lead a bibliographic review on assessment methods and criteria to evaluate participatory science educational processes and activities, including methodological questions and challenges to be addressed in each specific case study.
• D.4.2 Report on social media responses to science performances. (M35). UoW will lead this dimension of the research. The report will include key findings and insights from both the online ethnography case study and automated Twitter analysis tool.
• D.4.3 Policy brief: Effective science and arts-based education approach. (M36). UAB, in coordination with case study coordinators, will provide policy guiding in addressing the contribution of performance-based approaches in the development of innovative and creative scientific education activities promoting transversal competences, embedding RRI dimensions and raising the attractiveness of STEM careers.

D4.1 : Research report: Methodological aspects of science education assessment [7]

UAB will lead a bibliographic review on assessment methods and criteria to evaluate participatory science educational processes and activities, including methodological questions and challenges to be addressed in each specific case study.

D4.2 : Report on social media responses to science performances [35]

UoW will lead this dimension of the research. The report will include key findings and insights from both the online ethnography case study and automated Twitter analysis tool.

D4.3 : Policy brief: Effective science and arts-based education approach [36]

UAB, in coordination with case study coordinators, will provide policy guiding in addressing the contribution of performance-based approaches in the development of innovative and creative scientific education activities promoting transversal competences, embedding RRI dimensions and raising the attractiveness of STEM careers.

Schedule of relevant Milestones

Milestone number [18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS4	ICT development of an automated tool to enable social media data analysis	5 - UoW	24	Running a trial analysis, with a brief pilot automated social media analysis

Work package number [9]	WP5	Lead beneficiary [10]	8 - UNESCO
Work package title	Sustainability and Policy Impact		
Start month	1	End month	36

Objectives

This WP has the twofold objective of promoting the sustainability of the project and embedding policy linkages between PERFORM and EU science education policy and decision-makers from the beginning of the project, in order to ensure a significant medium and long-term impact of the PERFORM resultant methodologies and outcomes across Europe and to return the generated research results to the European society.
Therefore, WP5 specific objectives are the following:
- To promote the sustainability of the project and enhance its impacts on the engagement of young people in STEM in the medium- and long-term across EU Member States.
- To translate the innovative research and practical tools developed by PERFORM into specific policy actions that strengthen and coordinate the institutional ability of EU Member States to encourage scientific vocations among young girls and boys, promoting scientific literacy and awareness about STEM careers

Description of work and role of partners

WP5 - Sustainability and Policy Impact [Months: 1-36]
UNESCO, UAB, TBVT, UoB, SMS, AJA, LAC, EUSEA
Task 5.1: Generation of a sustainability plan (led by UNESCO)
This task will generate the PERFORM project sustainability plan with the aim of ensuring the successful implementation of resources and methodologies developed by PERFORM to be used by teachers and researchers, improving their capacities as science teachers and communicators, and engaging young people in STEM. Furthermore, the sustainability plan will guarantee the use of the generated resources by professional science education and communication communities interested in science-art projects entities across Europe beyond the end of the project. In doing that, the project will provide them with the skills needed to apply the methodologies and toolkits developed in order to improve their scientific education and communication activities and services.
For that purpose, screening of successful sustainability models of previous EU science education projects or other topic-related projects (including current and past UNESCO initiatives and programmes) will be conducted by UNESCO through the revision of the projects' website and the on-line (email or Skype) interviews of the coordinators about the best practices and opportunities to maximize the impact of a project beyond its end.
The vast know-how of UNESCO, its programmes and expertise will be also leveraged to promote the inclusion of new knowledge derived from the PERFORM results and toolkits into existing UNESCO programmes for their further exploitation and sustainability. During the PERFORM intermediate meeting, UNESCO will be responsible for the structure, arrangements and agenda of a cross-interaction one-day meeting that will provide all PERFORM partners and stakeholders with training and access to the latest UNESCO analytical policy tools and indicators on science literacy, education, gender, research and policy through web-based information systems: the Global Observatory on Science, Technology and Innovation Policy Instruments (GO-SPIN) and the web platform For Women in Science.
UNESCO will also seek frequent advice from the PERFORM Advisory Board to provide input on the project's maintenance and growth.
As part of the sustainability plan, UNESCO will also seek additional financial and intellectual support through strategic partnerships as an early and ongoing project activity to ensure that the outcomes of PERFORM are kept up and running once the grant period is over.

Task 5.2: Maximize the policy impact of PERFORM (led by UNESCO)
This task will contribute to research in the field of science education on how to implement PERSEIA on a larger scale from data collected at meetings with policy-makers and intersection with existing UNESCO successful programmes on science education and capacity-building.
For that purpose, WP5 will design, organize and execute external cross-interaction meetings with key stakeholders (teachers, students, early career researchers, partners) and policy-makers to ensure strong science-policy links with the timely transfer of the newly generated knowledge, results and toolkits to European policy-makers.
Beyond dissemination activities, WP5 will coordinate and lead delegations composed of selected PERFORM stakeholders (i.e., students, teachers, researchers, and partners) to attend the most relevant European science policy forums to present PERFORM in the form of panel discussions and oral presentations. Such participation will also involve

European policy-makers, practitioners, educational institutions at all levels, governments, civil society organisations and industry. During those meetings, UNESCO will conduct interviews and arrange separate roundtables and focus groups with key PERFORM stakeholders and European Ministers of Education, Science, Technology and innovation, accessed through the Scientix network and the UNESCO National Commissions in each European Member State. The preliminary list of events includes: World Science Forum 2015 (Budapest, Hungary), World Science Day 2016; (UNESCO HQ, Paris), UNESCO Youth Forum 2016/2017 (UNESCO HQ, Paris), ESOF 2016 (Manchester, UK), and Scientix General Conference (Brussels, Belgium).
This task will address specific efforts to organise a meeting in the context of a Future Classroom Labs (FCL) workshop held by Scientix in 2017 (dates and location to be defined). UNESCO will coordinate the participation of 10 to 20 selected PERFORM stakeholders. Participation will consist of networking and demonstrations of PERSEIA during a slot in the programme to an audience of policy-makers and the rest of the Scientix community. FCL workshops will provide a unique platform for policy-makers to receive up-to-date information about the state-of-play in STEM education research and practice and to rethink their science education strategies considering the input from teachers and students within flexible learning environments.

Participation per Partner

Partner number and short name	WP5 effort
1 - UAB	3.00
2 - TBVT	2.00
3 - UoB	2.00
4 - SMS	1.00
6 - AJA	1.00
7 - LAC	2.00
8 - UNESCO	15.00
9 - EUSEA	2.00
Total	28.00

List of deliverables

Deliverable Number [14]	Deliverable Title	Lead beneficiary	Type [15]	Dissemination level [16]	Due Date (in months) [17]
D5.1	Sustainability plan	8 - UNESCO	Report	Public	15
D5.2	Two policy briefs on WP5 related topics	8 - UNESCO	Report	Public	34

Description of deliverables

• D5.1. Sustainability plan (M15). A sustainability plan will be generated to ensure PERFORM's ability to maintain its impact over the medium and long term. The plan will include concrete actions to incorporate PERFORM's results and outcomes as resources under UNESCO programs and initiatives related to science education, from which they will be readily available to policy-makers at UNESCO National Commissions, and maintaining a repository of all project materials in Scientix.
• D.5.2. Two policy briefs on WP5 related topics (M34). The first policy brief will summarize the best practices and strategies to incorporate the PERSEIAs into the European science policy community of researchers and practitioners. The second policy brief will include an analysis of successful case studies on how the training tools developed by PERFORM can be effectively incorporated into the European science policy community of practitioners and teachers.

D5.1 : Sustainability plan [15]

A sustainability plan will be generated to ensure PERFORM's ability to maintain its impact over the medium and long term. The plan will include concrete actions to incorporate PERFORM's results and outcomes as resources under UNESCO programs and initiatives related to science education, from which they will be readily available to policy-makers at UNESCO National Commissions, and maintaining a repository of all project materials in Scientix.

D5.2 : Two policy briefs on WP5 related topics [34]

The first policy brief will summarize the best practices and strategies to incorporate the PERSEIAs into the European science policy community of researchers and practitioners. The second policy brief will include an analysis of successful case studies on how the training tools developed by PERFORM can be effectively incorporated into the European science policy community of practitioners and teachers.

Schedule of relevant Milestones

Milestone number [18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS2	Identification of actions for sustainability	8 - UNESCO	8	Screening successful sustainability models of previous EU science education projects or other topic-related projects

Work package number [9]	WP6	Lead beneficiary [10]	9 - EUSEA
Work package title	Dissemination and Outreach		
Start month	1	End month	36

Objectives

The specific objectives of WP6 are the following:
- To create a structure for dissemination and communication that makes the best possible use of the resources available in order to provide relevant, timely and targeted communication opportunities. This will include the online presence, including social media, and other forms of communication with and towards well defined target groups.
- To develop links and collaborations with existing networks and communities, and specifically with Scientix, including mutual visibility through websites, other media and events, to generate the best possible effects of the dissemination efforts.
- To organize and promote a final conference, with the aim to provide stakeholders and others interested with the most updated knowledge and findings/results of the project.

These objectives will be divided into measurable goals, e.g. through the use of web-based tools such as Google Analytics. Social media providers already offer such possibilities, and the possibilities to further refine communication efforts are most likely to increase even more in coming years. Other measurable goals are the number of final conference participants, the number of presentations at Scientix and other conferences, both nationally and internationally.
Part of the structure for communication and dissemination is the network and community of EUSEA, European Science Events Association, with about 100 science events' organizers in more than 30 European countries.

Description of work and role of partners

WP6 - Dissemination and Outreach [Months: 1-36]
EUSEA, UAB, TBVT, UoB, SMS, UoW, AJA, LAC, UNESCO
Task 6.1 Communication Plan and Tools (led by EUSEA)
A strategic and operational communication plan for dissemination and exploitation will be produced as a first step, identifying target groups, levels of pre-understanding, desired results, proposed actions, time and potential partners for the various activities (such as Scientix). The plan will also cover the data collection output, how the results of the activities will be disseminated and made available (Open Access) to the policy-makers, research and science teachers' communities. Attention will be given to "early adopters" among teachers and how they may be supported. Finally, the plan will also cover the use and importance of local languages for certain activities, such as teacher communication.
With this task, a structure and groups of actors will be created and their needs and expectations regarding communication with the project, for various levels of knowledge, engagement and actual participation will be defined. Electronic means of communication will be primarily considered, for the sake of speed, accuracy, costs and analytics, which will include website(s), social media and digital repositories for references and reports as well as digital tools for collaboration and inclusion. In the case of teachers, although many are fluent in English, translations of key parts will be done, primarily into the project's languages (i.e. Spanish and French). A flexible content system for web publishing will allow further major languages (e.g. German) to be added on a demand basis. Resources for translation will be allocated from the content part of the website and online presence.
A constant "editorship" of website, social media and other communication channels will be arranged. The person(s) in charge will be preparing, promoting and publishing stories, results, references, and other material that support the overall objectives of the project. The task will also include moderating possible discussion fora connected to the social media, events or website.
The online presence, including web and social media, will be designed from a mobile device user's point of view –thus making it easier for teachers and other groups to follow the project through Twitter or other digital media.
The communication structure will use a range of communication channels and tools in order to reach and engage the various target groups. EUSEA experiences from various EU-funded and other projects over the past 10 year period is that the needs and demands for access to information vary considerably between different groups, such as policy-makers and professionals, or members of the public and researchers. However, the following tools will, of course, be used to inform and engage the various groups of people that the project targets: 1) Newsletters, digitally distributed, primarily in English, 3-4 times/year; 2) Factsheets, available both printed and online; 3) Participatory videos, online; 4) Presentations, including slide shows as well as "science café"-like events; 5) Exhibits, e.g. posters, displays and screens to be used at conferences and other opportunities; and 6) Actual PERFORM shows performed inside and outside schools.

Task 6.2: Building the community relations and outreach (led by EUSEA)
This task will exploit existing networks, communities and other collaborations that exist within the project, and closely related to it, such as the Scientix resources as a result of the links created in Task 4.1. The person in charge of the collaboration and exchange with the Scientix community and resources for dissemination purposes will be responsible for the mutual benefits and visibility that can be achieved through this collaboration. In addition to that, the project will also expand its networks to individuals, projects, associations and public agencies that had no previous contact with members of the consortium. This may include (non exhaustive list):
- Cities and regions, depending on responsibilities for science education in different European countries, it is reasonable to build e.g. on the network of cities created through the EU funded PLACES project ("PLACES of Scientific Culture").
- Schools and school authorities connected to EUSEA members and event organizers in European countries –many science festivals have specific "schools programmes" with local communities of schools and teachers.
- Other interested and engaged parties, that may be connected as sponsors, partners, friends or "followers" to individual EUSEA members
- Local groups or individual researchers in the field, also connected to the science events or science centres and museums, for feedback, possible evidence bases, and references.
Furthermore, this task includes the creation and support of a repository of material that may be used for presentations and/or local adaptations to be used during science communication events (such as festivals or science centre days) in European countries. The internal communication structure and channels is a responsibility of WP1.
Finally, this task will involve the organisation of the PERFORM final conference. UNESCO will be responsible for such conference at the UNESCO Headquarters in Paris, in close collaboration with EUSEA. UNESCO will convene representatives of PERFORM stakeholders (students and teachers from the schools who participated in case studies, early career researchers from case studies) as well as European policy-makers, invited speakers including members of the PERFORM advisory board, and other interested practitioners (i.e., entrepreneurs in STEM fields, including industry). This final event will compile the most relevant research results and toolkits of the project, and will show the best ways for PERFORM methodologies implementation in Member States through oral presentations, panel discussions and round tables.
The extent of the responsibility is primarily limited to the actual structure and arrangements; it is expected that all partners will add knowledge and experience to the programme, e.g. by inviting educational, scientific and policy relevant organizations representatives as speakers and moderators. A separate programme committee will be set up, as well as a local organization committee. Contracts with service providers, including venue, local staff, catering, conference administration, etc will be organized by UNESCO.

Participation per Partner

Partner number and short name	WP6 effort
1 - UAB	4.00
2 - TBVT	2.00
3 - UoB	2.00
4 - SMS	2.00
5 - UoW	2.00
6 - AJA	1.00
7 - LAC	1.00
8 - UNESCO	6.00
9 - EUSEA	14.00
Total	34.00

List of deliverables

Deliverable Number [14]	Deliverable Title	Lead beneficiary	Type [15]	Dissemination level [16]	Due Date (in months) [17]
D6.1	Plan for communication, dissemination and exploitation	9 - EUSEA	Report	Public	4
D6.2	Website and social media launch	9 - EUSEA	Websites, patents filling, etc.	Public	6
D6.3	Report on outreach activities, including the final conference	9 - EUSEA	Report	Public	35

Description of deliverables

• D6.1 Plan for communication, dissemination and exploitation (M4). The plan outlines the communication and dissemination strategies and activities, focusing on different target groups, their levels of pre-understanding and how they may be reached and encouraged to engage in the project and its content.
• D6.2 Website and social media launch (M6). The project's online presence is a key function for the communication and accessibility of the project for teachers, researchers, school agencies and authorities, and the site and complementing media will be designed with consideration to several groups and several languages.
• D6.3 Report on outreach activities, including the final conference (M35). It will be possible to use the final report also as a guide for future events and projects, as it will be detailed in terms of preparations, outcome and recommendations.

D6.1 : Plan for communication, dissemination and exploitation [4]

The plan outlines the communication and dissemination strategies and activities, focusing on different target groups, their levels of pre-understanding and how they may be reached and encouraged to engage in the project and its content.

D6.2 : Website and social media launch [6]

The project's online presence is a key function for the communication and accessibility of the project for teachers, researchers, school agencies and authorities, and the site and complementing media will be designed with consideration to several groups and several languages.

D6.3 : Report on outreach activities, including the final conference [35]

It will be possible to use the final report also as a guide for future events and projects, as it will be detailed in terms of preparations, outcome and recommendations.

Schedule of relevant Milestones

Milestone number [18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS6	Links to Scientix	1 - UAB	30	Participation in Scientix networking events and presence of Scientix members in PERFORM events

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	Selection of the specific training skills to be developed	WP3	3 - UoB	5	Knowledge sharing workshop
MS2	Identification of actions for sustainability	WP5	8 - UNESCO	8	Screening successful sustainability models of previous EU science education projects or other topic-related projects
MS3	Mid-term internal evaluation	WP1	1 - UAB	18	Use of a specific set of indicators
MS4	ICT development of an automated tool to enable social media data analysis	WP4	5 - UoW	24	Running a trial analysis, with a brief pilot automated social media analysis
MS5	Inclusion of the RRI values	WP2	2 - TBVT	26	Participatory workshops of the performance-based science education methodologies
MS6	Links to Scientix	WP1, WP6	1 - UAB	30	Participation in Scientix networking events and presence of Scientix members in PERFORM events

1.3.5. WT5 Critical Implementation risks and mitigation actions

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
R1	Low teachers' engagement in performance science education approaches Teachers may not be interested in such innovative approaches since they are not part of the curriculum.	WP2, WP3	The likelihood of this risk is medium. Case study coordinators in France and UK will provide an economic compensation for teachers. In Spain, teachers will have an official recognition by the corresponding regional Department of Education. WP2 and WP3 leaders will also encourage teachers' participation by linking the performance-based science education approaches with the curricula, and specifically with science-related subjects. If a teacher decides to abandon the project, another teacher will be invited.
R2	Low participation of students in social media (Twitter) Students may not participate in Twitter's scientific debates after the PERSEIAs implementation in order to maintain an on-line dialogue with researchers.	WP2, WP4	The likelihood of this risk is medium. Case study coordinators and involved early career researchers will encourage students' participation in Twitter by asking direct questions related to the activities. LAC, TBVT, and SMS have expertise in promoting dialogue and scientific debate using Twitter. If students do not participate in Twitter, UoW will conduct qualitative interviews for assessment purposes by using skype and telephone in order to minimize cost.
R3	Low engagement of students in participatory workshops Selected students may not be motivated to actively participate in workshops for developing their own PERSEIAs.	WP2, WP4	The likelihood of this risk is medium. Case study coordinators will clearly explain the project and invite to participate to a wide range of students in each school. Workshops' schedule will be arranged taking into account the students' academic needs. PERFORM will also motivate students by

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
			offering visits to labs and encounters with experts. If a student or students are not interested in participating in PERFORM activities, the case study coordinator and the corresponding teacher will consider the possibility to select other required candidates.
R4	Lack of schools' support to students and teachers participating in PERFORM. The school ceases to support the participation of teachers and students in PERFORM. It may happen if there is a change in the school's board during the project.	WP2, WP3, WP4	The likelihood of this risk is low. Case study coordinators will promote schools' engagement through organising promotional meetings with schools in order to explain the benefits of the project. In Spain, schools' participation will be encouraged by providing them with educational material. Case study coordinators will also look for the institutional recognition of the participation of the school in the project by the corresponding public administration. If the school decides to cease its participation, another school will be invited and engaged by using existing contacts of the UNESCO network of Associated Schools (ASPnet)
R5	Low engagement of early career researchers in performance science education approaches Researchers may not be interested in participate in the process due to lack of time.	WP2, WP3	The likelihood of this risk has been rated as low since researchers involved in the project will receive a punctual payment for participating in workshops and online dialogue with students and their involvement will require less time than in the case of teachers. If a researcher decides to abandon the project, the case study coordinator will invite another researcher working in the same topic and who has been already involved

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
			in science dissemination activities with PERFORM partners to participate in the project.
R6	Low school commitment with the project The schools initially willing to participate in PERFORM may not be further committed due to the participation of the school in other projects.	WP2, WP3	The likelihood of this risk is low. It will be prioritized include schools with previous working-relation with the partners and which have shown a high level of commitment. If local partners perceive that a school's commitment with the project is not enough to accomplish the objectives of the project, the school will be encouraged to increase their commitment. If the situation does not change, another school will be invited and engaged by using existing contacts of the UNESCO network of Associated Schools (ASPnet).

1.3.6. WT6 Summary of project effort in person-months

	WP1	**WP2**	**WP3**	**WP4**	**WP5**	**WP6**	**Total Person/Months per Participant**
1 - UAB	16	4	3	54	3	4	84
2 - TBVT	1	42	4	3	2	2	54
3 - UoB	1	7	31	0	2	2	43
4 - SMS	1	30	2	2	1	2	38
5 - UoW	1	2	6	14	0	2	25
6 - AJA	1	1	6	1	1	1	11
7 - LAC	1	18	1	1	2	1	24
8 - UNESCO	1	0	0	0	15	6	22
9 - EUSEA	1	0	0	0	2	14	17
Total Person/Months	24	104	53	75	28	34	318

1.3.7. WT7 Tentative schedule of project reviews

Review number [19]	Tentative timing	Planned venue of review	Comments, if any
RV1	18	tbc	
RV2	36	tbc	

1.4. Ethics Requirements

Ethics Issue Category	Ethics Requirement Description
PROTECTION OF PERSONAL DATA	- Detailed information must be provided on the informed consent procedures that will be implemented.
PROTECTION OF PERSONAL DATA	- Detailed information must be provided 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.
PROTECTION OF PERSONAL DATA	- Justification must be given in case of collection and/or processing of personal sensitive data.
PROTECTION OF PERSONAL DATA	- Copies of opinion or confirmation by the competent Institutional Data Protection Officer and/or authorization, or notification by the National Data Protection Authority (whichever applies according to the Data Protection Directive and the national law) must be submitted to the REA before the commencement of the relevant part of the research during the lifetime of the project.
HUMANS	- The applicant must clarify whether vulnerable individuals/groups will be involved. Details must be provided about the measures taken to prevent the risk of enhancing vulnerability/stigmatisation of individuals/groups.
HUMANS	- The applicant must clarify how consent/assent will be ensured in case children and/or adults unable to give informed consent are involved.
HUMANS	- 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 provided.
HUMANS	- Detailed information must be provided on the informed consent procedures that will be implemented.
HUMANS	- Details on the procedures and criteria that will be used to identify/ recruit research participants must be provided.

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 fillings, videos, etc.
OTHER	

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.

History of changes

Change	Description
Addition of D.1.4.	A new Deliverable (**D.1.4. Data Management Plan** (M6)) has been added in order to attend the requirements of the pilot action on open access to research data.
Improved description of Table 3.4b.	Each partner exceeding 15% of personnel costs has provided more detailed explanations of the correspondent 'Other direct cost' items in Table 3.4b. Partner 2 (TBVT) has changed the amount to 40500€ (as requested). Partner 5 (UoW) has allocated translation costs from subcontracting as Other direct costs (3960€). Partner 9 (EUSEA) has added a table since Other direct costs would increase due to the removal of the website costs from subcontracting (see below).
Revised subcontracting in Section 4.2	TBVT and UoW have improved their corresponding description of activities to be subcontracted. EUSEA has removed the creation of the website from subcontracting activities (39000€). These costs would be allocated as: - Personnel costs: € 24000 (corresponding to 4 person-months added to WP6, the total amount of pm in WP6 is 18) - Travel: € 3700 (the total amount of travel costs is € 11500) - Other goods and services: € 3500 (the total amount of travel costs is € 6500) - Indirect costs: € 7800 (the total amount of indirect costs is € 36000)
Revised Ethics section	The section has been improved according to the EC Screening Report, which ethics requirements have been addressed and included in the text. This new version of the Ethics section has been reviewed and approved by the UAB's Ethics Commission for Human and Animal experimentation (CEEAH).

Table of Contents

1. Excellence

1.1 Objectives

The principal objective of the PERFORM project is **to deeply investigate the effects of the establishment of a direct interaction and communication between young people and researchers in the promotion of young people's motivations and engagement** in science, technology, engineering, and mathematics **(STEM)**. Such direct interaction and communication will be established by using **innovative science education methods based on performing arts approaches**.

There is an education research interest in exploring the effectiveness of a diversity of arts-based education approaches that are currently but not-systematically used in educational contexts, although mainly informal, in motivating young people in STEM. PERFORM will develop **a creative, participatory educational process on STEM** through the use of scenic arts in selected formal education settings in Europe. Secondary school students and their teachers, together with early career researchers, will get **actively involved in experiencing science and reflecting** about their own role in the interface between science and society, the scientific practice and the values embedded in **Responsible Research and Innovation.** By using such a **human-centred approach to science education**, the PERFORM project aims to shed light over the current academic debates on how humanising science contributes to foster **young people's motivations towards science learning, and strengthen the transversal competences** required for science careers and jobs.

The proposal has four specific objectives which will run concurrently:

1) **To explore new science education methods based on scenic arts that lead secondary school students to understand and to learn about STEM.** Through a participatory educational process, PERFORM will design suitable science education methods drawn on performance approaches. Such methods will create direct interaction between secondary school students from low and medium socio-economic environments, their teachers and early career researchers in order to reflect and to learn about scientists' practice and experience, the impacts and applications of science in real life, the transversal competences required to be engaged in science, the challenges of science labour market, and the values embedded in the **Responsible Research and Innovation** (RRI) approach, taking into account the necessary gender issues. The project will further explore how to upscale such education methods to informal educational settings.

2) **To identify and challenge limitations faced by secondary school teachers and early career researchers in teaching and communicating STEM to young people.** PERFORM will analyse the limitations and challenges in education and communication that both secondary school teachers and early career researchers face in order to engage students in science and foster their understanding on STEM issues in formal education settings. Special attention will be paid to potential gender differences through the learning and teaching processes. Such analysis will inform the design of feasible performance-based science education methods. The outcomes will also enable the development of training toolkits

targeted to secondary school teachers and early careers researchers aimed to acquire the communication and education skills needed to motivate students and foster their interest in science and scientific careers.

3) **To assess the impact of the participatory educational process in fostering secondary school students' motivations and engagement in science and with RRI values.** The PERFORM project will explore the effectiveness of the participatory educational process developed in selected formal educational environments. A set of key assessment indicators will be generated to qualitatively and quantitatively measure the impact of the process in raising girls' and boys' awareness of the relevance of science in their societal context and underlining the appeal of science and scientific careers. PERFORM will also assess the process potential impact in the enhancement of young people's acquisition of the transversal competences required to undertake scientific careers and also the RRI values that will enable them to take informed decisions for full civic participation in a knowledge-based European society. The assessment will specifically focus on identifying gender inequalities and the socio-cultural reasons behind them, in order to design appropriate policy recommendations.

4) **To implement a sound communication strategy for the dissemination and explotaition of the research's results for widespread policy adoption and implementation across Europe.** With the aim of spreading out the results of the research project, PERFORM will timely transfer the newly generated knowledge and innovative practical tools to policy-makers and the scientific and education communities across Europe. PERFORM will translate such research results into specific recommendations for policy strategies which will strengthen the institutional capacity of European Member States in encouraging scientific vocations among young people. The project will also establish links to other European research science education and communication projects and networks, specifically with *Scientix* -the Community for Science Education in Europe-, in order to create synergies on science education research, the development of training toolkits, and the maximization of the impact across Europe.

PERFORM will explore, through **participatory action research**, the effects of a human-centred science education approach based on the use of performing arts in increasing the secondary school girls' and boys' learning about and engagement in STEM.

1.2 Relation to the work programme

The PERFORM project relates to the H2020 Science with and for Society work programme topic SEAC.1.2014.2015- *Innovative ways to make science education and scientific careers attractive to young people*.

PERFORM addresses the call's specific challenge of "*raising the attractiveness of science education and scientific careers and boosting the interest of young people in STEM*" through the exploration of the effectiveness of **participatory learning processes supported by innovative performance-based science education methods in creating transformative changes across secondary school students leading to increase their engagement in science**. The project will focus on secondary school students because at these ages they start looking for their professional future (i.e., careers and jobs). They are also in a crucial stage of developing active participation as citizens and will later be making decisions in their cities or villages. **Case studies will be conducted** in secondary schools located socio-economic contexts of low- and middle- income level **in France, Spain and United Kingdom (UK)**, to ensure the wide representation of social groups and those socially disadvantaged.

Specifically, the project will contribute to the call's specific challenge through the development of participatory educational processes in three ways:

- PERFORM will **facilitate direct interaction inside and outside the classroom** (i.e., research centres) between secondary school students, their teachers and early career researchers by using performance-based science education methods, as a mean for **linking young people with real science**. Such interaction will enable students to get a more realistic vision of the scientific practice in different fields of research (i.e., environmental sciences, technology, engineering, physics, biochemistry, mathematics) in order to challenge myths about the complexity and limitations of STEM careers. As it is stated in the call: "*it needs young boys and girls to pursue careers in science, technology, engineering and mathematics, while at the same time adhering to the values embedded in Responsible Research and Innovation*", such interaction will also provide students' with the values embedded in **RRI (i.e., creative thinking, gender equity, inclusiveness, openness, and mutual learning)** since they are key to enhance the current educational process to ensure students' joint engagement in STEM.
- PERFORM will provide the students with the **transversal competences they will need for being successful in science careers and related jobs**. To address the following challenge included in the call, "*The Union needs all its talents to boost creativity and competitiveness*", PERFORM will explore and validate the effectiveness science education methods based on performing arts in fostering students' 1) sense of initiative and **entrepreneurship** (i.e., creativity, critical thinking and innovation), 2) **social and civic** competences (i.e., team work, collaboration, social responsibility) and 3) **learning to learn** (i.e., self-reflection, scientific method-approach). Such competences are significantly linked to the above mentioned RRI values and are also crucial for addressing the current labour

market needs. To ensure that secondary school teachers and early career researchers effectively transmit such transversal competences, PERFORM will identify the limitations and challenges they face when teaching and communicating science, respectively, and will provide them with appropriate education and communication skills.

- The effects of such participatory educational processes on girls' and boys' perception and attitudes towards STEM and related careers, as well as the **effectiveness** of such process in embedding the values of RRI, will be systematically assessed by PERFORM through a **sound evaluation methodology** that will combine quantitative and qualitative traditional evaluation tools with ICT (Information and Communication Technology) tools. In doing so, the project responds to the call's claim of "*a shift to innovative and effective methods is necessary"* by exploring and evaluating such new science education methods based on performing arts in formal contexts.

Moreover, PERFORM will address the ultimate challenge of the call: "*to make informed choices and to engage in a democratic, knowledge-based society*" through the promotion of transdisciplinary knowledge and RRI values via an inclusive participatory approach that will empower secondary school students to discriminate between credible and false information and critically and creatively reflect about nearer societal challenges.

PERFORM fits the purpose and scope of the topic of "*supporting a range of activities, which will raise young boys' and girls' awareness of the different aspects encompassing science and technology in their societal content*" through a participatory action research strategy that will set **secondary school students in the centre of the educational process** aiming to engage them in STEM.

By exploring innovative science education methods drawing on performance-based approaches between students, their teachers and early career researchers, **the project will foster both girls and boys direct contact with researchers and science to learn about and raise their interest in the progresses and challenges of the scientific work when dealing with current and relevant societal challenges** (i.e., climate change, health, food security, secure energy, smart and green transport, inclusive and secure societies). Appropriate interaction will also be fostered between the involved secondary schools and the universities and research centres of those early career researchers involved in the project.

To ensure **gender equality** in the action research process developed in selected settings, gender issues will be specifically addressed and analysed in all the stages of the project (i.e., exploring and assessing the impacts of science methods, building teachers' and researchers' capacity to communicate).

PERFORM will address the call's request of: "*bringing both girls and boys into the scientific world via formal and informal teaching and learning and to orient them towards undertaking scientific careers*" by scaling-up the results obtained in formal settings. In doing that, the project will transfer the knowledge generated to informal education settings (i.e., **science museums**) aiming to guide

further development of performance-based science education activities contextualised in such informal education contexts.

PERFORM will **disseminate and communicate the results and outcomes of the project to a broad audience** including secondary school students and teachers, researchers, and other practitioners interested in science education and performing arts **and, specifically, to policy-makers and scientific and education networks and projects across Europe**. In doing that, and as stated in the call, **PERFORM will establish direct collaboration with *Scientix*** both as user of *Scientix* services (i.e., teachers training workshops, *Scientix* networking events, dissemination to communities website) and as supporter to encourage knowledge exchange and dissemination across Europe (i.e., online resources, final conference).

1.3 Concept and approach

1.3.1. Challenges in boosting young people's interest in science across Europe

In the current European socio-economic and political context, **motivational and structural barriers constrain the interest of the citizens and their active involvement in science and technology**. As earlier as 2007, the European Commissioner Janez Potonick highlighted important challenges in engaging people with science: "*The current limitations in the dialogue between science and civil society have to be overcome*"[1]. Such statement has been recently stated by the 2012 European Commissioner for Research, Innovation and Science, Máire Geoghegan-Quinn, who claimed that "*The dialogue between science and the rest of society has never been more important*"[2].

Addressing the challenge of engaging citizens in science is even more urgent in the case of young people. Their considerable disenchantment with science and technology represents a critical limitation for the European society in order to ensure future innovation capacity, excellence and competitiveness. Results from the Flash Eurobarometer on "*Young People and Science*" (#239) [3] showed that **less than a third of the respondents showed an interest in studying engineering** (28%), natural sciences (25%) or mathematics (24%), versus a 36% and 39% of them who would consider studying economics or social sciences, respectively. In the UK, for instance, only 4% of respondents would definitively study natural sciences. The survey findings also suggested that important gender differences exist regarding their preferences on future careers and jobs. Boys were more interested in engineering or mathematics than **girls, who generally argued that they do not have the skills for studying engineering, biology or medicine**. Although the scientific practice itself involves curiosity, creativity, and practice, European young people, and mostly girls, still

[1] European Commission (EC).2008. Report of the science in society session. Public Engagement in Science. http://ec.europa.eu/research/science-society/document_library/pdf_06/public-engagement-081002_en.pdf
[2] EC. 2012. Responsible Research and Innovation. Europe's ability to respond to societal challenges. http://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf
[3] The Gallup Organisation. 2008. Young people and science. Flash Eurobarometer 239. EC http://ec.europa.eu/public_opinion/flash/fl_239_en.pdf

perceive science complexity as a barrier and scientific careers as useless and unprofitable, which might discourage them from science and studying such careers[4].

Three main reasons behind young people's discouragement with science have been identified by previous research:

- Young people are influenced by a **negative stereotypical and problematic image of scientists that dominates among adults**[5] [6] [7]. Scientific research is often perceived as not related to human and societal needs. Across Europe the efficiency of scientists' work is not clearly understood yet[8]. Moreover, the new role models of young people fed by the media do not include scientists[8] [9]. Media people, such as football players and pop artists, have a more interesting and attractive life for boys and girls and they earn more money than scientists. Young people know that they will not need scientific knowledge to be like their idols[9]. In Spain, for instance, one third of the population perceived science as an unattractive career option for young people and a similar percentage is not interested in science mainly because they do not understand it[10]. Such negative image of science discourages adolescents from investing effort and time in scientific learning. It also leads them to undervalue the scientific concepts, theories and methods they are taught at school for their daily lives and society wellbeing[4] [11]. A change in the perceptions of students towards science and scientists' jobs is then needed to engage them in STEM.
- **The promotion of transversal competences or skills are highly relevant for preparing students for their professional future, but have received less attention** than basic or cognitive skills in European educational programmes, including science education[12]. Specifically, transversal competences related to scientific activities are the following: 1) learning to learn, or the ability to pursue and persist in learning and effectively organise and manage time and information (i.e., self-reflection, scientific method-approach), 2) social and civic competences, or the ability to participate in an effective and constructive way in social life (i.e., team work, collaboration, social responsibility of science), 3) sense of initiative and entrepreneurship, or the ability to turn ideas into action (i.e., creativity, critical thinking and

[4] Littledyke, M. 2008. Science education for environmental awareness: Approaches tointegrating cognitive and affective domains. *Environmental Education Research*,14 (1), 1-17.
[5] Hughes, G. 2001. Exploring the availability of student scientist identities within curriculum discourse: An anti-essentialist approach to gender-inclusive science. *Gender and Education*, 13, 275-290.
[6] Long, M., Boiarsky, G., Thayer, G. 2001. Gender and racial counter-stereotypes in science education television: A content analysis. *Public Understanding of Science*, 10, 255-269.
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[8] EC 2010. Science and technology (Eurobarometer 73.1, Special Eurobarometer 340). http://ec.europa.eu/health/eurobarometers/index_en.htm
[9] Sjøberg, S. 1998. Naturfag som allmenndannelse: En kritisk Fagdidaktikk. Oslo, Norway: Ad Notam Gyldendal.
[10] FECYT. 2008. IV Survey of Social Perception of Science. Ministry of Science and Innovation. http://www.fecyt.es/
[11] Ruiz-Mallén, I., Escalas, M.T. 2012. Scientists Seen by Children: A Case Study in Catalonia, Spain. *Science Communication* 34(4): 520-545.
[12] EC,EACEA,Eurydice, 2012. Developing Key Competences at School in Europe: Challenges and Opportunities for Policy. http://eacea.ec.europa.eu/education/eurydice/thematic_studies_en.php

innovation)[13]. Beyond cognitive competences on STEM (i.e, communication, mathematical competence, digital competence), transversal competences are also potential tools for personal fulfilment and development, active citizenship, social inclusion or employability across our contemporary and diverse European societies[14]. For example, students need to learn about how to critically select, organise and deal with data if they would study a STEM career. Students' engagement in science needs to start from the acquisition of transversal competences they will use in their professional working life.

- Most of the science education activities addressed to secondary school students in Europe are still related to **unidirectional and vertical transfer of information based on expert knowledge, from the teacher to the students**. Although theoretical debates have replaced the information deficit model by two-way dialogue aiming to increase young people's active involvement in science and public support for research, such change in science education and communication practice is not a reality yet. Educational approaches actively involving the students often lack in the curricula, though they have proved to enhance their engagement[15]. Moreover, the transmission of scientific expert knowledge that is decontextualised from students' reality, although relevant and needed, has been not enough to motivate positive behavioural changes towards science[16]. It can also lead to alienation and irrelevance of contents, when pupils do not have the opportunity to connect the scientific curriculum with their experiences and practice[4].

Science education needs to take action in order to **challenge the remaining distance between young people and science and the mainstream formal education approaches at secondary schools**. **Innovative science education methods** are then crucial to engage young girls and boys in STEM and avoid loss of scientific talent in Europe.

1.3.2 Innovating to engage secondary school students in science education

Within a formal science education context, methodological innovation and integration becomes essential to raise the attractiveness of science education. **Innovation** in such learning contexts highlights the need of conducting 1) **participatory action-research and** 2) **trans-disciplinary scientific education approaches** that are able to integrate, in a creative manner, the different dimensions of knowledge and competences implied in scientific practice and careers.

Action research theory offers a theoretical and methodological framework for approaching innovative science education methodologies since it is based on the assumption that students will

[13] CIDREE. 2008. A toolkit for the European citizen. The implementation of key competences. Challenges and opportunities. Brussels: CIDREE and Department for Educational Development, Flemish Community of Belgium.
[14] EC. 2006. Recommendation 2006/962/EC of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning [Official Journal L 394 of 30.12.2006].
[15] NFER. 2011. Exploring young people's views on science education. Report to the Wellcome Trust.
[16] Frisk, E., Larson, K. L. 2011. Educating for sustainability: Competencies & practices for transformative action. *Journal of Sustainability Education*, 2, 1-20.

change their perceptions and attitudes and become engaged in science when they experience and reflect the need to change and will adopt new behaviours based on specific values[17].

Engagement is part of students' learning, understood here as a change in their understanding of the world or its relation to it[18]. When the change affects students' frames of reference (i.e., structural assumptions through which experiences are understood) leading to changes in attitudes, behaviour and social norms, this learning is identified as transformational[19]. Students' **engagement in science** can be defined then as the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught about science, beyond the transfer and acquisition of information. Engagement extends to the level of motivation they have to learn and progress in their education[20]. Educational psychology research has widely studied levels and types of motivations as well as the underlying attitudes that give rise to action[21]. According to self-determination theory, motivations can be related to the individual's expectation of getting an external outcome or reward (extrinsic motivations) or can exist within the individual as an inherent interest, satisfaction, curiosity or desire to be informed (intrinsic motivations). This theory suggests that intrinsic motivations are led by three psychological needs: competence or being able to do something efficiently, relatedness or connecting with others; and autonomy. Similarly, social cognitive theory suggests that engagement and learning are influenced by students' capacity to mobilize cognitive and behavioural resources needed to successfully execute a specific task within a given context, as well as by students' understanding of the potential outcomes they will get from implementing such task[22]. Value-based judgments and beliefs, as well as structural and situational dimensions are thus powerful drivers for change[16]. Research has also shown, however, that activities must be interesting themselves to satisfy those needs[21].

Engagement in science is needed but insufficient to be intrinsically motivated, **interesting science education activities** are also crucial as an external factor motivating students. New science education methods are thus required to improve the attractiveness of STEM

Participation and contextualisation are key elements in developing innovative science education methods leading to interesting and motivating scientific activities. Previous research has shown that **contextualized and participatory education approaches are more effective in engaging students and promoting learning acquisition** than those that rely on more passive techniques[23] [24].

[17] Webb, G. (1996) 'Becoming critical of action research for development' in O. Zuber-Skerritt (ed.) New Directions in Action Research, London: Falmer Press.
[18] Reed M.S., Evely A.C., Cundill G., Fazey I., Glass J., Laing A., Newig J., Parrish B., Prell C., Raymond C. and Stringer , L.C. 2010. What is social learning? *Ecology and Society* 15(4).
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[20] Great Schools Partnership. 2013. Glossary of Education Reform. http://edglossary.org/student-engagement/
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[22] Bandura, A. 1997. Self-efficacy: The exercise of control. New York: Freeman.
[23] Minner, D. D., Levy, A. J., Century, J. 2010. Inquiry-based science instruction-what is it and does it matter? Results from a research synthesis years 1984 to 2002. *Journal of Research in Science Teaching*, 47(4), 474–496.

To raise people's motivation and interest, the design of educational activities should be based on participants' opinions. Participation can only be achieved by developing learning methods that allow students to establish connections between their learning at school and their local problems[25]. Participation, however, can be understood and applied in different ways ranging in a continuum from students' involvement within a one-way flow of information by consultation (about the content or activities) to an interactive participation, co-decision and self-mobilization, when students are involved in the development of educational activities and may even take their own actions and decisions concerning the learning process (e.g. develop their own educational activities)[26] [27] [28].

Participatory approaches to education aiming to achieve interactive participation or self-mobilization highlight inquiry and situational dimensions of learning. **Inquiry-based science education approaches involve active inquiry from students through thinking and doing into a phenomenon or problem**, often mirroring the processes used by scientists and including hands-on activities as a way to motivate and engage students while concretizing science concepts[23]. This approach emphasises active thinking and creativity and has proved to increase students' interest and academic achievement[23] [29]. Meaningful connection to "real world" situations and experiences is of particular importance in science education if the learner is to develop an interest in the matter[24] [30].

Learning is situated when scientific knowledge and concepts are connected to specific contexts of action. **Situated learning or contextualized learning is application-related, world- oriented and self-directed and implies the active participation of the students, boosting their engagement in science.**

Participation in and contextualization of learning are essential from the lenses of the **Responsible Research and Innovation**[2], an inclusive approach to research and innovation. The RRI approach that guides the Horizon2020 programme ultimately aims to achieve a social and environmental benefit and highlights the relevance of involving the society from beginning to end of the research process, openness and transparency, and effectively prioritising impacts, risks and opportunities. When applied to science education contexts, the RRI also focus on the importance of enhancing social capacities within scientific practice (cognitive, social, motivational and emotional), training of key competencies within science education that are particularly necessary for personal fulfilment

[24] Ruiz-Mallén, I., Barraza, L., Bodenhorn, B., Ceja-Adame, M.P., Reyes-García, V. 2010. Contextualising learning through the participatory construction of an environmental education programme. *International Journal of Science Education*, 32(13): 1755 - 1770.
[25] Ruiz-Mallén, I., Barraza, L. 2006. Environmental learning in adolescents from a Mexican community involved in forestry. *International Social Science Journal* 189, 513-524.
[26] Arnstein, S. R. 1969.A ladder of citizen participation. *Journal of the American Institute of planners*, *35*(4), 216-224
[27] Blackstock KL, Kelly GJ, Horsey BL. 2006. Developing and applying a framework to evaluate participatory research for sustainability. *Ecological Economics* 60:726–742.
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[29] Education, Audiovisual and Culture Executive Agency (EACEA P9 Eurydice) 2011. Science Education in Europe: National Policies, Practices and Research. Available at: http://eacea.ec.europa.eu/education/eurydice)
[30] de Haan, G. 2006. The BLK '21' programme in Germany: a 'Gestaltungskompetenz' based model for Education for Sustainable Development, *Environmental Education Research* 12:1, 19-32.

and development, social inclusion, active citizenship and employment (Recommendation 2006/962/EC, European Parliament), and assessing the impacts of the learning process. **Gender issues are specifically relevant in scientific practice and science education** since girls' and boys' attitudes and perceptions are differently influenced by negative stereotypes, although some of them prevail across gender, such as the role of women in science, as previous research on the public perception of science across Europe has shown[11].

Trans-disciplinarity, as participatory action research, is also essential to explore innovative science education methods and ground scientific concepts into societal contexts and processes, going beyond the viewpoints offered by a single discipline[31]. Trans-disciplinarity nurtures such science education methods from different disciplines and methodological approaches, such as in the case of **arts and science**.

Arts-based educational approaches have been used in the last decades both in education research (for instance, under the label of "Arts-based Educational Research"[32] as well as more specifically, in science education[33] [34] [35]). These approaches are characterized by the infusion of elements from the arts (performance, literary writing, music, dance, storytelling, visual art and other mediums) in different stages of the research or the educational process in order to capture human experience, explore different ways of representation and convey meaning. Arts-based practices have been identified as particularly useful for projects that aim to describe, explore, or discover[36], all of which are important features of a learning process. Specifically, **applied drama** -referred to dramatic activities that primarily exist outside conventional mainstream theatre institutions, and have objectives that go beyond the artistic, and are also educational, social and political- **has participatory, dialogic and dialectic qualities as effective and democratic ways of learning[37]**. The integration of both rational and emotional dimensions within dramatic activities provides a rich source of individual and collective experimentation and exploration[38]. Furthermore, dramatic activities have been identified as particularly useful teaching and learning strategies for integrating affective and cognitive education to informed action[4]. As a collaborative art form, applied drama embodies a pedagogy designed to encourage interactivity and collaboration, emphasizing the centrality of the student in the pedagogic process. As a practice, knowledge in drama is embodied, culturally located and produced through interactions with others, generating new forms of social and cultural capital[37].

[31] Pohl C.2008 From science to policy through transdisciplinary research, Environmental science & policy, 11(1), 46-53
[32] Barone, T., Eisner, E. 2004. Arts-based educational research In pp. 95–109.
[33] Metcalfe, R.J.A., Abbott, S., Bray, P., Exley, J., Wisnia, D. 1984. Teaching science through drama: an empirical investigation. *Research in Science & Technological Education*, 2, 77- 81.
[34] Ødegaard, M. 2003. Dramatic science. A critical review of drama in science education. *Studies in Science Education,* 39, 75–101
[35] Dorion, K. R. 2009. Science through drama: A multiple case exploration of the characteristics of drama activities used in secondary science lessons. *International Journal of Science Education*, 31(16), 2247-2270.
[36] Leavy, P. 2009. Method meets art: Arts-based research practice, The Guilford Press, New York.
[37] Nicholson H. 2005. Applied drama. Theatre and Performance Practices. Palgrave Macmillan, Basingstoke.
[38] Baraúna Teixeira, T., Motos Teruel, T. 2009. De Freire a Boal. Pedagogía del Oprimido – Teatro del Oprimido. Ñaque Editora, Spain

Dramatic activities have been used in science education within formal and informal settings to address different STEM subjects such as chemistry, biology and physics and transversal topics such as sustainability[33] [34] [35] [39]. Experience suggests that this medium supports learning of affective, cognitive and procedural knowledge, especially higher order thinking skills relating to analysis, synthesis, and evaluation[35]. **The use of drama in science education has been commonly addressed to facilitate students' understanding of STEM concepts**, such as for instance, a dramatization of electricity, representing voltage, current and resistance[40]. Another strategy mainly oriented to engage students in STEM, but less extended among practitioners and researchers, has been the use of drama to relate scientific topics to affective contexts of social, cultural, and intellectual discourse in order to reflect on the role of science in such societal contexts, such as playing stories of scientists to get critical insights of the scientific process[34].

The **potential of applied drama in science education** through these two strategies (i.e., facilitating STEM concepts' understanding and reflecting on the role and use of science in society) lies not only in communicating and bringing to life scientific concepts, but also in addressing the nature of science as a **transformative learning process embedded in a certain societal context**.

Developing such innovative science education activities linked with applied drama requires **accurate and rigorous assessment approaches monitoring and evaluating** the effectiveness of these activities in students' engagement and as a learning process. Assessments of performance-based approaches are generally based on summative evaluations -at the end of the process, although some experiences include experimental designs based on the use of questionnaires and interviews pre and post-performance[41]. Yet, evaluation methods based on integrative and in-depth approaches covering the whole process of creation and representation of such drama activities have not been systematically developed in the field of science education.

1.3.3 PERFORM overall approach and methodology

In order to address the above mentioned European challenges and limitations in science education, and to contribute and innovate in such a research field, the PERFORM project will conduct a **participatory action research to explore and assess the effectiveness of innovative science education methods based on performing arts** in stimulating secondary school students' engagement in STEM.

Such participatory action research will rely in a **holistic and trans-disciplinary methodological framework** integrating elements from arts-based methods, behavioural psychology, science education, science communication, sociology and anthropology.

[39] McNaughton, M. J. 2004. Educational drama in the teaching of education for sustainability. *Environmental Education Research*, 10(2), 139-155.
[40] Tveita J. 1998. Can untraditional learning methods used in physics help girls to be more interested and achieve more in this subject? In E. Torracca (Ed.) Research in Science Education in Europe (pp.1-7). Dordrecht: Kluwer.
[41] Heras, M., Tàbara, J. D. 2014. Let's play transformations! Performative methods for sustainability. *Sustainability Science*, 9(3): 379-398

PERFORM research will be conducted in a total of **twelve secondary schools in France, Spain, and UK** by using a case study approach. A total of approximately 600 students will be constantly involved in the research as stakeholders whereas 6,000 students from other 30 to 48 schools will be punctually engaged (i.e., attending the resultant performances).

The following specific drama-based education approaches will be explored in each setting:

- Clown in France,
- Stand-up comedy in Spain, and
- Street theatre in the UK.

The criterion behind the selection of these performances is twofold:

1) There is an education research interest in exploring the effectiveness of a diversity of arts-based education approaches beyond the most traditional ones (i.e., theatre) in motivating students in STEM when developed through the above described PERFORM conceptual approach.
2) The previous expertise of the consortium partners that will be performing the arts-based education approach has shown that the selected approaches can be potentially effective in motivating young people with STEM.

Through collectively exploring the interface between science and arts with secondary school students, their teachers, and early career researchers PERFORM will create direct interaction between them in order to link researchers' scientific knowledge and science values with students' experience, emotion and meaning within transformative learning processes, with the ultimate aim of humanising science.

Humanising science in such learning context refers to the exploration of educational actions that address the human dimension and values embedded into science and technology with the aim of bringing STEM closer to young people and their reality. Such actions will thus explore women and men scientists' motivations and personal experiences behind scientific practice, unveil and address human values related to science, promote contextualisation of scientific impacts and applications in real life, enhance responsibility of scientific decisions and outcomes and address power relationships and gender and ethical issues.

Through the conceptual approach of humanising science, the scientific concepts and practices worked at classroom will be contextualised into the European current societal challenges[42] to prepare students as tomorrow's European citizens, and engage them in RRI values (e.g., inclusiveness, creative and critical thinking, entrepreneurship, gender equality, openness, mutual learning[2]). Such values and competences will further enable students to contribute to the creation of a knowledge-based society.

[42] H2020 EC Societal challenges http://ec.europa.eu/programmes/horizon2020/en/h2020-section/societal-challenges

As showed in Figure 1.3a, the conceptual approach underpinning the PERFORM project involves the two elements highlighted by previous recommendations from European Commission reports to overcome current limitations in science education:

1) the exploration of science education methods based on performing arts as **innovative ways to engage secondary school students in STEM**; and

2) the promotion of teachers' and researchers' communication and education capacity building to **provide students with valuable learning experiences in formal science education contexts**.

Such approach ultimately aims to address three key priorities of the Horizon2020 strategy to prepare European tomorrow' citizens to deal with current socio-economic and political challenges: smart, sustainable and inclusive societies.

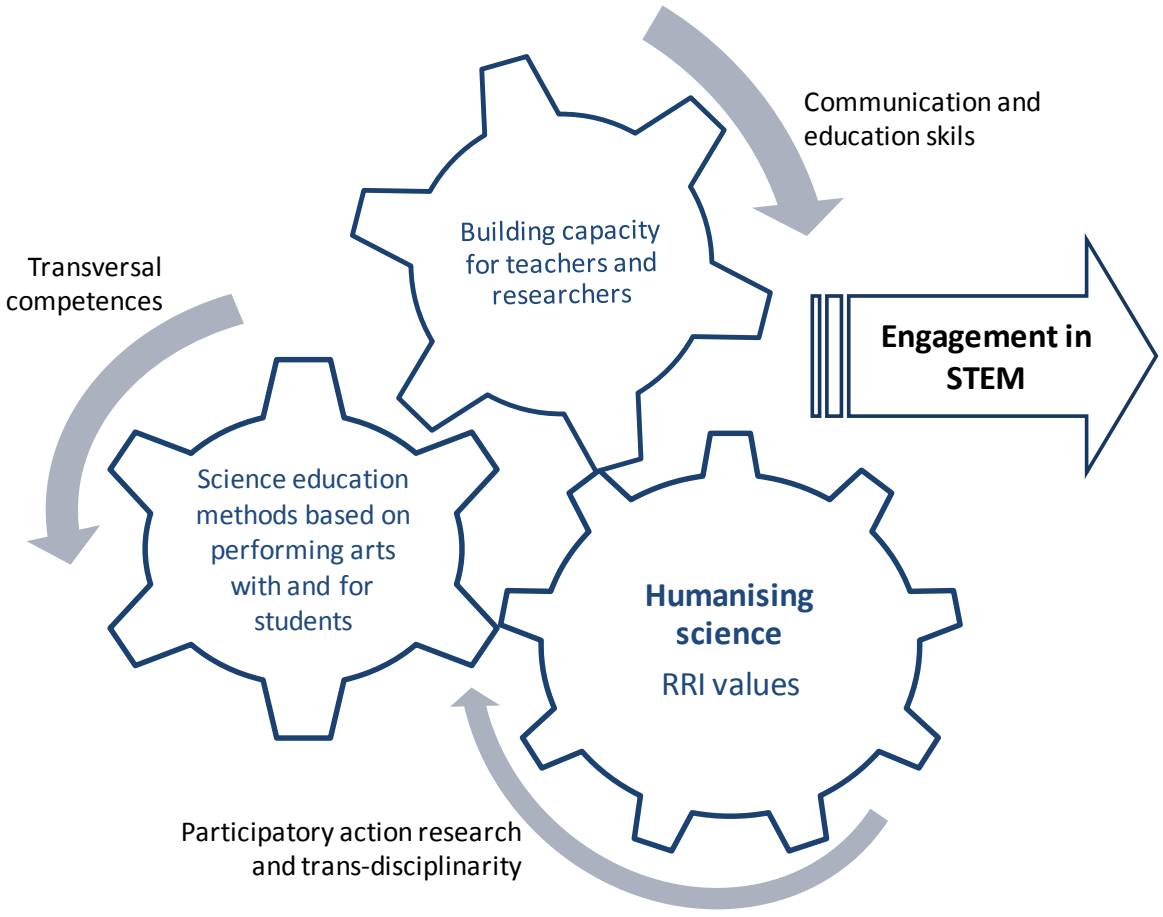

Figure 1.3a. Concept and approach of the PERFORM project

The exploration of science education methodologies and activities based on such performing arts will highlight the human dimension of the scientific research and practice by fostering students'

critical thinking and reflection about the relevance of science in its societal context, and including ethical issues, gender equality, among other values embedded in the **RRI approach**. The inclusion of such RRI values into the performance-based science education methods will be supported by the set of tools for education community generated by the *RRI Tools* FP7 project[43], and specifically those related to public-engagement, formal education to science, gender equality, and ethics.

The use of performing arts will also emphasise **the integration of different disciplines and realms of knowledge to address the scientific topics** selected by the students from the different societal challenges identified in the Horizon 2020 programme during the design of the performance (i.e., health, climate change, smart and green transport, food security, secure energy, inclusive and secure societies). In this way, the aesthetical experience will be also balanced with robust data and focused information. By opening the *black-box of science*, students will be guided through a collaborative creation process addressing these issues, with the aim of creating active learning environments.

PERFORM will focus on developing learning experiences that integrate transversal competences related to learning to learn, civic and entrepreneurship skills into the educational methods based on performing arts. The dramatization process will allow students to think about scientific concepts in ways that are meaningful to them, while the teachers and researchers may gain insight into the students' understanding. The students will be encouraged to use social networks to maintain direct dialogue with researchers to extend the learning process.

The guiding role of teachers and early career researchers during the process will provide a constant conceptual support and assessment of contents. Their involvement with young people in the exploration of the performance-based science education methodologies through the participatory process will be a key element that will face directly the public engagement required for a RRI. Early career researchers will also reduce the generational gap with students.

Secondary school teachers' and researchers' involvement in the project will be encouraged in each case study through non-economic incentives (i.e., official recognition of teachers' participation by the corresponding regional Department of Education in Spain) or/and economic compensations (i.e., punctual payment for researchers –and teachers in the case of France and UK- participating in workshops and online dialogue with students).

The education and communication skills needed by secondary school teachers and early career researchers to be able to further replicate the participatory educational process and implement the methods will be investigated and further addressed in specific toolkits for training teachers and researchers. PERFORM toolkits will provide from rapid tools to use tricks from drama to engage young people in their scientific or educational activities to guidance to long-term participatory process promoting the human dimension of science and the RRI values. Links to *ENGAGE*, *Pathway* and *TEMI* FP7 projects will be established in order to develop PERFORM toolkits, since these projects have created materials for training teachers on RRI and inquiry-based science education; yet none of them involve the use of performance-based approaches. PERFORM will also participate in *Scientix* teachers' training workshops to encourage knowledge exchange between the

[43] http://www.rri-tools.eu/rri-for-education-community

project and such a network that supports and promotes collaboration among STEM teachers, education researchers, and policy-makers in Europe.

PERFORM will **systematically monitor and assess the educational process and activities** in a broad time framework, including assessment pre, during and post performance. Since assessment is still an underexplored research topic in the field of performance-based educational activities, the development of an impact assessment methodology evaluation represents an essential pillar of the research process.

The assessment will provide an analysis of the potential impacts on girls' and boys' cognitive and behavioural changes towards science and related careers, including students' gender as category of the analysis, as well as their socio-economic background. For that purpose, assessment will be divided into:

- An assessment of the punctual interactive events in which performances are played in front of students' audiences.
- An assessment focused on the participatory learning processes among students, researchers and teachers; and

In both cases, a mix of qualitative and quantitative methods will be applied, including the use of social media analyses since such dimension of young people's social world is under-studied, in order to analyse cognitive, emotional, and behavioural changes, as well as attitudes and motivations towards STEM.

The evaluation design will be based on literature review on trans-disciplinary assessment frameworks (educational psychology, science communication, sociology, performance-based approaches, anthropology). This will provide a grounding to define the evaluation criteria and design the data collection instruments to qualitatively and quantitatively analyze the impact of the PERFORM educational process on students' motivations and attractiveness for scientific careers in a systematic way. The design will also take into account the inclusion of all participants (girls and boys, teachers, researchers) in the evaluation process through participatory evaluation methods. In the analysis, we will consider individual and contextual factors that potentially influence students' learning and engagement in STEM, such as **students' gender and schools' socio-economic context**.

Special attention will be placed on addressing gender equality issues across the research project, as one of the RRI values, taking advantage of the UNESCO expertise in gender equality programs as *Women in Science*. Dialogue and reflection on the role of women in science will be encouraged during the design of performance-based science education methods between students, teachers and early career researchers, as well as during training workshops. This will be achieved by ensuring the participants gender balance along the three years of the project. To address challenges related to gender stereotypes, we will first identify our subjects specifically[44], that is, our targeted groups of students will include both girls and boys, and the early career researchers interacting with them will

[44] Following the recommendation for analyzing gender of Gendered Innovations (http://ec.europa.eu/research/science-society/gendered-innovations/index_en.cfm)

include both women and men scientists. For example, during workshops for designing the performance, boys and girls will reflect on their different concerns to pursue STEM careers and how are currently influenced by stereotypes about science jobs. Through the impact assessment we will then understand girls' and boys' perceptions and attitudes towards science, which is crucial to designing successful education methods and training tools that will assist teachers and scientists to overcome these concerns.

The PERFORM project will be positioned in the level 6 of the Technology Readiness Level (TRL) since the project's outputs and products will be demonstrated in selected formal teaching and learning contexts in France, Spain and UK (Figure 1.3b). Further exploitation of the project's results will allow for updating the developed science education methods and training toolkits to other European countries in order to become a science education reference in Europe.

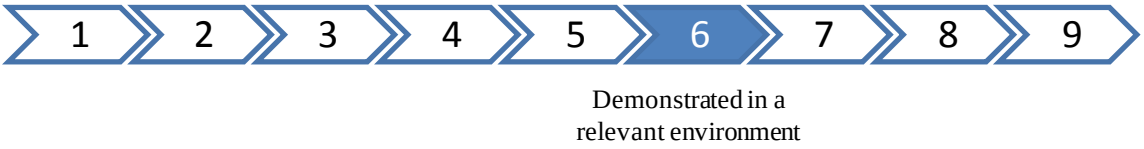

Figure 1.3b. Position of the PERFORM project according to the Technology Readiness Level

In a last step, the **PERFORM activities will be up-scaled to informal contexts**, specifically to science museums, through transfer workshops to provide science museums with methodological guidelines to potentially develop innovative education tools based on performing arts once the project will be finished. PERFORM will use the *ECSITE* European network of science centres and museums, science festivals, and other institutions and companies to scale-up and disseminate the results into information educational settings through EUSEA.

The dissemination and communication of PERFORM findings, products and outcomes will be fulfilled through two main activities:

- The project will generate interaction spaces among the partners and European policy-makers in order to ensure strong science-policy links with the timely transfer of the knowledge, results and practical tools developed by PERFORM into concrete recommendations for policy actions aiming to encourage scientific vocations among young people. Specifically, links to *UNESCO Network of Associated Schools (ASPnet)* will be established to further disseminate the resulting training toolkits and science education methods to other interested European schools.
- The project will design and manage a sound dissemination and communication plan addressed to a broad audience of public education institutions, teachers, and researchers interested in science communication and education, other interested companies and education practitioners. Such a plan will include the development of concrete actions and supporting materials to disseminate the project products and results among the scientific and educational communities and linking PERFORM to other European research science

education projects, as well as science communication platforms and initiatives (i.e., the FP7 *PLACES* project, and the *Famelab contest*). Specifically, **PERFORM will participate in *Scientix* networking events and collaborative dissemination to the *Scientix* network and dissemination of the project results across European countries**.

The dissemination and communication plan will also ensure that specific results from the gender analysis and the resulting science education methods and tools including the gender dimension (as RRI value) reach the scientific educational communities and policy-makers, with the aim of promoting specific action to challenge gender inequalities in STEM education.

1.4. Ambition

The use of performing arts in engaging people about science is part of the burgeoning field of science and art collaborations. **Science and arts projects are becoming increasingly popular** throughout the world; sometimes as a way to reach new audiences who are involved in the arts sector but not necessarily already engaged in science. But, more frequently, projects combining science and performing arts (i.e., stand-up comedy) are aimed to communicate scientific topics and issues to broad or general audiences. A recent research conducted in Portugal showed the effectiveness of using stand-up comedy in increasing the interest of the audience in science[45]. However, **the use of performing arts** to promote innovative science education means of learning in formal learning and teaching contexts **is still an under-explored field of research and practice**.

In general, initiatives and projects aiming to engage students in science do not use dramatized methods, and such initiatives are usually targeted to children. For example, *ScienceLab* is a German initiative to bring science to kids (4-10 years old) using their own motivation and curiosity to act as a steering force. By means of experiments, *ScienceLab* helps to bring the attention of students in science in this early stage including biology, physics, chemistry, medicine, astronomy, and geology. Other initiatives with secondary school students are placed outside the school. In Spain, for instance, the *Escolab* project invites students to discover the latest scientific advances and the leading laboratories of Barcelona guided by researchers.

PERFORM aims to fill this gap and **innovate** in the field of science education action research **by involving secondary school students, teachers and early career researchers in an active inquiry process on relevant scientific topics through the use of performing arts** at schools. This is a ground-breaking approach never used in the past to combine science and arts.

Importantly, science and arts interface provides an opportunity for different disciplines to share ideas and methodologies and learn from each other's practices – from scientists learning new methods to articulate their research, to artists gaining access to scientific concepts that may have an

[45] Pinto, B. et al. 2013. Communicating through humour: A project of stand-up comedy about science. *Public Understanding of Science* http://pus.sagepub.com/content/early/2013/12/05/0963662513511175.full.pdf+html

impact on future society, and for both to gain insights and perspectives that can reach and deepen their respective practice.

For audiences, performing arts, such as theatre, stand-up comedy and clown, have the potential to offer new and unexpected routes into the findings, dilemmas, puzzles and delights of science and scientific research, and can take a number of forms. Amongst recent developments is a trend towards collaborative science theatre, where researchers are actively involved in the development of the performance[46]. This collaboration can take many forms – from the researcher acting as an expert advisor or consultant on the scientific aspects to being an active contributor and even performer. Initiatives such as *Famelab* and *LHComedy* fall in to the latter category. In these, the role of the audience is as a passive receiver of the engagement, education or entertainment. Another variety of collaboration puts an emphasis on audience participation, and this ranges from inviting people to ask questions of the performers to structuring the performance in a flexible way that allows the audience to participate in helping shape its direction. An example of the latter is *Deadinburgh*[47] – an immersive theatrical experience where the participants had to make choices in an epidemic scenario.

However, in each of the examples given, the audience is only involved in the performance itself and not with its development. The emphasis is given to the science itself and misses the opportunity to foreground the creative, performative aspects of collaboration with artists, which has the potential to draw in and engage the existing skills and interests of the participants, working with them to develop those skills and interests as they immerse themselves in the complexities of an issue in science and the means by which it can be communicated. **The aim of PERFORM is to take this interaction to the next level and enable the chosen audience – in this case, young people – and empower them to participate in the design of the programme.** This puts the young people, rather than the research, at the centre of the performance, and creates toolkits for them to construct their own future performances. In addition, it offers the opportunity for the performances to be informed from the start by, and then co-developed with, the students, rather than taking on board audience's feedback at a later stage. Moreover, **such direct interaction and collaboration between the students, teachers and early career researchers is a novel approach in formal education** that will be systematically tested and validated during the project in three European countries.

PERFORM is ambitious not just in the performance methodology but in the way that it is used in an educational setting. Informal science learning is a term that is often applied to activities that take place outside of the formal education system and seek to raise awareness of, interest in and engagement in science[48]. Many of these informal science learning activities are designed to enhance and complement the science curriculum. As described in the section above, initiatives can range from traditional forms of informing and educating about science to more collaborative projects where the young people participate in the development of their own learning. However, very few

[46] Dowell, E. and Weitkamp, E. 2011, An exploration of the collaborative processes of making theatre inspired by science, Public Understanding of Science, 21 (7): 891-901
[47] The Enlightenment Café: Deadinburgh: http://www.lastheatre.com/portfolio/deadinburgh/
[48] Review of informal science learning 2012, Wellcome Trust: http://www.wellcome.ac.uk/About-us/Publications/Reports/Education/WTP040865.htm

focus on performance. **As such this project is novel in that it fuses collaborative educational concepts with the methodology of performance in a highly participatory approach.**

In addition, a strand of this proposal involves the **training of teachers and early career researchers** in performance and participation so that they can create activities with, and for, young people. This training will also be an important facet in teachers' practice and researchers' career development. The unidirectional and vertical transfer of information based from the teacher or expert to the students has been challenged with two-way dialogue models. To be engaged, students need to be active actors of the process instead of receptors. This project would enable the development of training programmes for teachers and researchers on education and communication skills ranging from performance to participation, thus helping to facilitate this shift in institutional culture. Furthermore, **PERFORM training programmes and resultant toolkits will represent unique capacity building process and outcomes** since they will involve effective education and communication skills based on RRI values and performing arts in order to engage students' in STEM. Such toolkits will be key to ensure the further multiplier effect of the project in learning and teaching contexts.

Therefore, monitoring these processes along different time frameworks and case studies across Europe will represent a **pioneering experience and a remarkable added value of the research project**.

2. Impact

2.1 Expected impacts

Today there is an urgent need to boost the interest of children and young people in STEM, so they can become the researchers of tomorrow, and contribute to a science-literate society. Creative thinking calls for science education as a mean to make change happen. In line with this need, the overall **long-term objective of PERFORM is to become the EU-wide reference standard set of tools and methodologies that feeds a specific science education subject in secondary school curricula** showing students the importance of scientific careers for building a sustainable, informed, democratic, and competitive knowledge-based society **through applied, interactive, and creative approaches.**

The process and the different steps to be followed for achieving the above-mentioned overall objective will have a series of impacts in the short, mid and long term that are aligned with those contained in the call:

1) *"Coordination and leverage of Member States activities with respect to innovative approaches in the field of science education and scientific careers."*

Although there is a considerable political and economic effort on developing and implementing the Europe 2020 Strategy in the areas of research and science education, there is still a clear gap to be bridged for the implementation of the flagships directly concerned ('Innovation Union', 'an Agenda for new skills and jobs', and 'Youth on the move') in order to engage young people in Science and technology careers. Europe needs to coordinate to better equip future researchers and other societal actors with the necessary knowledge and skills to fully participate and take responsibility in the research and innovation process.

For that reason, during the project execution **PERFORM will establish a dialogue with relevant regional, national and European stakeholders in the fields of education and research** (e.g. education authorities, scientific and research clusters, policy-makers, associations, media, and science-based entrepreneurs, etc.) in order to identify and analyse the actual gaps between education and scientific careers and map the different best practices developed at the regional level, with special emphasis in areas with strong presence of science and technology clusters, for engaging students, teachers, researchers, and science-based entrepreneurs for the valorisation of scientific careers. This will also allow **PERFORM to update the European science policy community of innovative methods developed by the consortium in science education**. Additionally, the development of the performance-based science education activities through the PERFORM participatory process will foster a mutual learning scenario in which students will acquire from researchers and teachers, basic knowledge about STEM, performing skills and transversal competences needed to pursue STEM careers, while researchers and teachers will realise about young people's interests and concerns towards STEM. **Researchers, students, and teachers will then become engaging actors of new young people in STEM, thus generating a multiplying engaging effect in STEM.**

In parallel, the project will be in direct and permanent interaction with students, teachers, and researchers in order to get a first-hand knowledge of the motivations of secondary-school students for choosing scientific careers, and the actual gaps and actions taken for an effective engagement of all concerned societal actors in the appraisal of science as a career opportunity, in line with the European Union's RRI strategy. The outcome of this process will provide PERFORM with an overall overview, at least in a first stage, of the current situation in France, Spain and UK (the participating Member States in the project). This analysis will allow the identification of commonalities in the different teaching and learning settings as a way of establishing converging strategies for engaging authorities and stakeholders in communicating the value of the scientific careers.

Ultimately, the process will result on a series of **policy recommendations** and a unifying roadmap with a variety of bottom-up, constantly updated methodological approaches for science awareness based on performing arts that becomes in the long term the standard reference across Europe.

The role of partner UNESCO will be key for allowing the direct interaction with policy-makers (national and regional science and education ministries, European parliament, etc.) and associations in order to promote the uptake of the developed standards and promote the implementation of the policy recommendations for bridging the gap between science and education and support building an innovative Europe able to give answers to tomorrow's societal challenges with scientific solutions. Eventually, this should lead to an optimisation of the different regional, national and European efforts for developing scientific career opportunities for young people (through better and attractive measures for increasing mobility, training, knowledge exchange, etc.), and a way for promoting the STEM careers among students.

2) *"Position EU research teams on the map as leaders in innovative science education methods and meeting Europe's targets regarding R&D intensity and competiveness, increasing the number of researchers and innovators, including women, in the public sector and in industry able to better address societal challenge (...) and increase the range of innovative products that reflect societal needs."*

Today, 80% of researchers and 75% of research investment happen outside the EU. Furthermore, researchers are a really small percentage of the European work force (account for only 5.6 in every thousand of the work force in the European Union, against 9.3 in the US and 10.7 in Japan) and Europe still largely suffers from brain drain[49]. PERFORM aims at changing the current perception that research careers are unattractive and not very prestigious from a social point of view will encourage young people to pursue these careers. This should be accompanied with parallel actions and policies that help perceiving by society at large that research and innovation are key priorities to build a competitive ERA that can face tomorrow's society challenges.

According to the project's exploitation strategy (see section 2.2 below), **PERFORM aims at up-scaling from the pilot actions to a broader, Europe-wide level where testing and improving the developed methods and toolkits with more students, teachers and researchers in the post-**

[49] European Research and Innovation - 2020: What can the leading institutions of civil society do for Europe? Atomium Culture, 2009

project phase. The mid-term objective will be creating a sustainable structure that 1) manages the generated results, 2) establishes the necessary mechanisms to periodically engage all key actors in the field, 3) maintains a continuous research process for generating and implementing new tools, approaches and methodologies based on the performing arts, 4) develops an on-line platform for making available the generated resources that allows at the same time the establishment of a community of users and developers that enriches the available material and fosters the dialogue and innovation process with other related projects, networks and initiatives, and 5) creates an official multidisciplinary European training programme addressed to teachers and researchers on awareness and promotion of scientific careers among students, and on providing transversal competences like creativity, entrepreneurship and initiative to help young people to develop their full potential for innovation.

The above-described **sustainability strategy** will be key for reaching the mid-term objective of establishing a permanent and robust programme that makes the difference in young students with regards to their engagement in STEM for developing their professional career. Although the PERFORM project will work directly only with 600 students through the implementation of its pilot actions in France, Spain and UK, it is estimated that almost 6,000 students will benefit from the results as spectators of the activities performed. With this numbers in mind, and considering an escalation of the programme to more Members States in the post-project phase, it is estimated that PERFORM will interact with ca. 3,200 students in the following 5 years after the project ends, reaching the additional amount of 32,000 students that will benefit as spectators of the actions. Furthermore, the application of the programme in this formal setting will be complemented by the implementation of some of the methodologies in e.g. museums, which will imply reaching a broader audience across Europe and impacting in more young people.

If successfully applied, the PERFORM programme should imply an increase of the number of students pursuing scientific studies of 9% by 2020, which will translate afterwards on scientific research careers. This will help support the objective of training and employ at least one million new researchers compared with 2008 levels in order to reach Europe's R&D intensity target of 3% of GDP for 2020[50]. The increase of the scientific taskforce, together with some recent measures already in place such as the increase of the funds devoted to Science and Technology research in Europe and the coordination of the ERA, and the creation of a single European Patent, will position Europe's research production in the top positions at the global level and consolidate it as a single space for research and innovation.

This process should be accompanied by the promotion of Europe as a place of equal access opportunities in research careers, and where research as a whole is driven by the principles and values of RRI. **PERFORM will include as a key aspect of its strategy the implementation of the RRI values**, which entails demolishing the gender barriers of specific scientific careers, the encouragement of the use of open access to make available scientific results, and the application of ethical principles and values across the whole research and innovation chain.

[50] Smarter, greener,more inclusive? Indicators to support the Europe 2020 strategy. European Commission. ISBN 978-92-79-31156-7

The changes in demography that Europe will face in the coming years (Europe will account 30% of the world's people of more than 65 years old) will imply great problems in terms of health services, communication, environment, etc., and pose great challenges that can only be addressed by research, development and innovation[51]. Their strengthening is the only chance to follow being a preeminent actor on the global scene in the close future, which can only occur at an Europe-wide, multidisciplinary, and intersectorial level, reinforcing and involving all agents in the innovation chain, which includes mainly companies and industries as a way of translating research results into tangible solutions for making people's life better.

On this regard, the PERFORM project will also promote the involvement of industry and science-based entrepreneurs in the interactions with the students. **The project will transmit the RRI values and transversal competences linked to entrepreneurial mindset** and will show the value chain of the research process that goes from the lab to the market application, which results into commercial benefits for the society at large. Europe needs for more companies that capitalise the research results and become the drivers for increasing innovation capacity and R&D[52]. PERFORM will convey the relevance of the socio-economic dimension of science for creating sustainable growth and employment, developing career opportunities, and bringing innovative solutions that give answers to societal needs and challenges.

2.1.1. Potential challenges to maximising the impact

There is a global alignment among European experts from all disciplines on the idea that research and innovation are the only way to get out of the serious economic crisis that is affecting Europe, and that affects also its capacity for facing the mid and long-term needs and challenges of its population. Several reports and recommendations coming from policy-makers and stakeholders at large have raised the red flag about the weakness of Europe as a whole for engaging new generations on research careers, for attracting and retaining scientific talent, and for supporting the generation of companies that are able to translate basic research into competitive solutions that make Europe an attractive hub for innovation.

The implementation of the Europe 2020 Strategy by the European Commission, which builds from the fails of the Lisbon Strategy, is the answer at the policy level of the concerns expressed in the recent years. Europe is aware of the critical moment it is going through and the need of building into a new sustainable, social, market, smarter, and greener economy, where prosperity will come from innovation and from using resources better, and where the key input will be knowledge[51]. Creating favourable conditions for innovation, education and research are of paramount importance to move towards higher value added activities. The recently approved flagships 'Youth on the Move' and 'New skills for new jobs' are vital instruments for implementing the policy strategies and will determine the future actions for achieving Europe's objectives. On this regard, it is envisaged that policies become quite stable or are even reinforced in the coming years in order to face Europe's challenges. Education and research are in the center of the knowledge and innovation

[51] Commission working document, Consultation on the future of the "EU 2020", COM (2009) 647
[52] Regional Policy contributing to smart growth in Europe 2020. SEC(2010) 1183

process and will benefit from governmental support and attention as the most important long-term and long-lasting ways of leaving the economic crisis behind. Therefore, it is expected that PERFORM will not encounter any relevant barrier or obstacle for achieving its impacts.

2.2 Measures to maximise impact

PERFORM is an ambitious project which includes activities, research and has an impact in several dimensions. The project will generate and deliver a wide range of qualitative and experimental approaches to science education, with the overall objective of making science education and scientific careers more appealing to young people. This will be done through a series of actions, and will target a range of stakeholders and participants at the local, regional, national and European levels, such as secondary school students and teachers, early career researchers, policy-makers, science teacher trainers, and the science education research community. The **communication plan for the dissemination and exploitation of the PERFORM project's results** will be built accordingly, and will support this structure, with the following two perspectives of goals and aims.

Firstly, PERFORM **dissemination actions** will:

- **make the relevant and evidence-based research-related outcomes of the project available and accessible to the European and global research communities**, thus contributing to make an impact in its scientific meaning, e.g. in terms of citations, and fostering further research;
- reach a significant number of stakeholders in the European science education community, including national and municipal policy-makers, science teachers associations, researchers, and other relevant representatives and practitioners, with the aim of **facilitating its uptake and the application of policy recommendations and measures**; and
- inform the above mentioned potential users about the PERFORM results and outcomes (i.e., training toolkits, science education methodologies) **in order to ensure its further exploitation** through an appropriate IPR strategy, and the sustainability of the project's results.

The fulfilling of these goals will partly be the result of "traditional" dissemination work and skills, i.e. identification of target groups, defining and designing of messages, and selection of the most appropriate channels for maximum reach and impact, including:

- the **publication** of PERFORM research results in top **peer-reviewed journals** on science education, science communication and related topics, and/or other academic formats (i.e., books, books chapters);
- the selection of and participation in scientific **conferences** (e.g., *Scientix* General Conference)**, workshops** (e.g., Future Classroom Labs held by *Scientix* in 2017), **science policy events** and **outreach events** (including slide shows as well as "science café") to

facilitate the uptake of the results by target groups (i.e., researchers, teachers, science communication practitioners); and

- the organisation of the **PERFORM final conference** to maximise the dissemination impact and to promote the further exploitation of the results by informing the European research and science policy communities and entrepreneurs in STEM fields (including the industry) about the innovative science education methodologies based on performing arts explored in order to engage secondary school students in STEM. UNESCO will be responsible for such conference at the UNESCO Headquarters in Paris, in close collaboration with EUSEA. EUSEA has an extensive experience on this field, not least from the arrangements of the Final Conference of the *PLACES* project in March 2014.

In order to ensure strong **science-policy links,** PERFORM will also organise **panel discussions, roundtables and focus groups** with key stakeholders (teachers, students, early career researchers) and policy-makers invited by UNESCO –the leader of the sustainability and policy impact work package– that will contribute to foster wider dissemination of the research and to update the European science policy community of the PERFORM innovative formulas and results in science education through a direct exchange and networking.

Participatory videos about the transformational educational process (i.e., students' carrying out the resultant PERFORM activities) will also be edited and produced by EUSEA, the leader of the dissemination work package, for our target audiences (i.e., researchers, teachers, science communication practitioners).

Finally, **a significant role in the project's dissemination will be played by *Scientix* European network**, an additional and valuable resource which is already hosting important resources in terms of structures as well as national and European networks addressed to targeted audiences –such as Internet portals and social media. The PERFORM communication plan will establish specific collaboration and exchange actions with the *Scientix* network to make use of the community resources (e.g. attending the *Scientix* conference, inviting *Scientix* representatives to the PERFORM events and final conference). By establishing such direct collaboration and using *Scientix* publicly available resources and tools, PERFORM and *Scientix* will enhance the mutual benefits and their visibility. Moreover, the European Schoolnet that is in charge of *Scientix*, is a member of EUSEA, and the two associations have a previous collaboration experience in EU projects. Science teachers and schools will also be reached through EUSEA members, relevant networks and individuals among policy-makers.

Secondly, the PERFORM project will deliver a range of qualitative and experimental approaches to science education and to the overall objective of making science education and scientific careers more attractive to secondary school students, e.g. through the following actions:

- the development of methodological guidelines to provide insights to scientific and educational communities to better address and guide a transformational and participatory educational process based on science and arts activities that can promote and transmit the human dimension of science and the RRI values, while teaching STEM in formal education.

The complete participatory process will generate a mutual learning scenario providing young people with basic knowledge about STEM, performing skills and transversal competences while teachers and early career researchers will realise about young people's interests and concerns towards STEM;

- the generation of toolkits to assist the enormous range of contexts of EU early career researchers and teachers, as well as educators, to implement performance-based science education activities and methodologies to engage students in STEM. PERFORM toolkits will provide rapid tools including the use of tricks employed in drama to engage young people in their scientific or educational activities to effective guidance to the implementation of the above-mentioned science and arts activities.

The presentation and dissemination of such results require a different methodology, and a different approach to communication than the previous goals. Whereas the first part reflects a more formal approach, with target groups that can be defined and approached, **these other actions will benefit most from an "informal" dissemination**. It is about finding the teachers, the "early adopters", supporters and volunteers that will help spreading the word, thus contributing to an increasing interest in the topics, ideas and experiences.

EUSEA members in the European countries will have an important task when it comes to **identify local and national target groups from countries both included and not included in the PERFORM project**; e.g. national teacher conferences and/or unions, as well as the most relevant venues and opportunities to communicate, through conferences, articles, presentations, etc. An important aspect of this, which is sometimes overseen, is that **the three project's languages (e.g., French, Spanish and English) will be used** and presentation material, such as slideshows and participatory videos, will be produced with this in mind, making the material available for translation and adaptation.

Integrating different target groups, with participatory formats, in different European countries, will also contribute to disseminate the project through such "informal dissemination", both inside and outside schools.

Likewise, the *Scientix* network also plays an important role in this work, as not only it reaches the "formal" science education structures, but also individual teachers, e.g. through web, media and annual conferences.

Finally, a purely **communication** strategy addressed to a general audience will be created by means of the definition of messages and the selection of the most appropriate channels for maximum reach and impact. Such strategy will be developed both at the internal and external levels. At the **internal level, as part of the management work package**, a smooth environment will be created to ease the collaboration within the consortium (i.e., intranet, meetings, internal reports). At the **external level**, the leader of the dissemination work package will use **different communication tools** (website, factsheet, mass media, social media, e-Newsletter) to explain the project objectives, activities, partners, and the outcomes. EUSEA will contribute its communication skills but also, and foremost, its local, regional and national presence in virtually all EU Member States.

Specifically, PERFORM will provide a **multifunctional and multi-lingual web portal**, which will act as a virtual campus for lifelong learning, and will be used beyond the project duration. Project websites and communication structures are purely content driven. Their only *raison d'être* is the useful contents for the visitor. The portal will constantly collect and disseminate materials and results generated within the execution of the project: science education methodologies, teaching materials and toolkits, reports and results. PERFORM will also extend the dialogue between young students, their teachers, and early career researchers, thus creating spaces for face-to-face interaction as well as a virtual space to interrelate through **social networks** (e.g. Facebook, Twitter). These social networks will be used to guide young people in the search and use of scientific and educational open access online materials. The use of **traditional communication channels**, such as local newspapers and radio programmes, will be also envisaged.

PERFORM will employ both the dissemination and communication tools for informing the potential users about the expertise, good practice and outcomes obtained in PERFORM and thus **ensure wide exploitation** of such research data and results during the project.

All **data collected** by the PERFORM partners from students, teachers and researchers participating in PERFORM case studies will be **systematically anonymised** in order to prevent possible identification of individuals' opinions or ideas. Such data will be gathered mainly through interviews, workshops and focus groups (audio or/and video recorded), as well as surveys and social media ethnography. Since different types of data will be collected for different analytical purposes in each work package, the partners leading each research task will create the corresponding database and will upload the data obtained during the project. Databases will be shared among partners under request and approval of the correspondent partner in order to promote research collaboration within the consortium. At the end of the project, the UAB coordination team will store all the databases in the **Digital Document Repository of the UAB**, under the protection of standard security means. Such database will be available to other researchers under request and with the approval of all consortium members.

Following the terms and conditions of the Horizon 2020 Grant Agreement, and specifically those related to Individual Property Rights and Open Access, the UAB project manager will set up a **Consortium Agreement** which will also deal with all the main aspects of the relationships between partners, including legal aspects, ownership of knowledge, protection of knowledge, use and dissemination of knowledge and access rights to knowledge, and further exploitation of the results. The Consortium Agreement will thus regulate partners' confidentiality obligations to protect results and personal data, as well as **intellectual property rights** of the knowledge generated by the PERFORM partners (i.e., copyright and related rights, know how, scientific reports, methods of research and developments and documented data). The Consortium Agreement will include guidelines and regulations related to the ownership and access to the key knowledge and outcomes generated during the project, and thus facilitating further applicability and exploitation of the results.

The obligation of publishing all the resultant scientific publications in open access will also be included in the Consortium Agreement. Moreover, the **resultant outcomes and results** of this

project (i.e., science education methods based on performing arts, teachers' and researchers' training toolkits, participatory videos) will be available at the project website and *Scientix* on-line repository for any interested individual and entity, and protected under the **Creative Commons license**.

Furthermore, PERFORM will **generate a sustainability plan** to ensure the PERFORM project's ability to maintain its impact in the medium and long term once the project is finished. This will be mainly achieved by incorporating the outcomes (e.g., science education methods based on performing arts, training toolkits) as resources under UNESCO programs and initiatives related to science education, from which they will be readily available to policy-makers at UNESCO National Commissions, and, as mentioned above, maintaining a repository of project outcomes in *Scientix*.

A **draft dissemination and exploitation plan** will then include the two perspectives mentioned above, the "formal" and the "informal" communication. Naturally, this plan will have to be developed during the initial phase of the project, in close collaboration with *Scientix* and local EUSEA members and the project network, using existing, traditional, channels for communication as well as new ones (Table 2.2a).

Table 2.2a. Draft plan for the dissemination and exploitation of the PERFORM results –basis for the Communication Plan

Formal communication				
Target group	**Level of pre-understanding**	**Desired result**	**Proposed action**	**Time**
Policy-makers	Basic	Make them feel informed and engaged	Policy briefs, evidence-based stories to be disseminated through relevant channels, e.g. *Scientix* but also through NCPs, national and local Education boards, etc.	Second half of project
Science education research community	Advanced	Create interest in developing further research for evidence	a) making on-going project known through articles (not academic), blogs, at conferences etc. b) report research results as early as possible, through open access, at conferences etc.	Prepared from the start, likely to be more public in second half
Science education public administration and entrepreneurs in STEM fields, including industry	Basic +	Informed and aware, possibly engaged, and preparing for action	Participation in conferences, articles, slide shows, media releases, newsletters, social media	From the start, with a view to frequent updates
Science teachers training	Informed, partly academic, part practical	Informed, prepared to include in training	Training material, including evidence based knowledge and examples	Towards end of project
Science teachers, primarily "early adopters"	Practical	Engaged and prepared for action	Social media, teachers associations, teachers conferences and media,	From the start, with a view to frequent updates.

Informal communication				
Target group	**Level of pre-understanding**	**Desired result**	**Proposed action**	**Time**
Science teachers, primarily "early adopters"	Informed, engaged	Engaged and ready for action, i.e. implementing in class-room	Access to local language material (videos, presentations, etc), PERFORM Toolkits	As soon as possible, probably from second half
Early career Researchers	Informed, curious	Engaged and ready for action, i.e. implementing in their own science communication activities	Access to local language material (videos, presentations, etc), PERFORM Toolkits	As soon as possible, probably from second half
DATA COLLECTION OUTPUT				
Policy-makers	Informed	Decision supporting material	Policy briefs, research reports, incl. summaries	Second half
Research community	Academic interest,	Citations	Academic: peer-reviewed articles, conference presentations, also using web based services like slide-share, academia.edu, etc.	Second half
Science teacher community	Interest, engagement	Implementation in schools	Useful protocols, toolkits, guidelines, including use of web-based tools like YouTube, Facebook, but also through *Scientix* portal	As early as possible, to generate interest and "followers"

3. Implementation

3.1 Work plan — Work packages, deliverables and milestones

The consortium will work with nine entities from four European Member States conducting action-research in selected formal education settings in case studies in France, Spain and UK. PERFORM will achieve its objectives executing six work packages and their corresponding tasks (Figure 3.1a):

- WP1: Project coordination and management, led by UAB
- WP2: Innovative science education methods based on performing arts, led by TBVT
- WP3: Building science education and communication capacity for teachers and early career researchers, led by UoB
- WP4: Impact assessment of the participatory educational process in students' learning about and engagement in science, led by UAB
- WP5: Sustainability and policy impact, led by UNESCO
- WP6: Dissemination and outreach, led by EUSEA

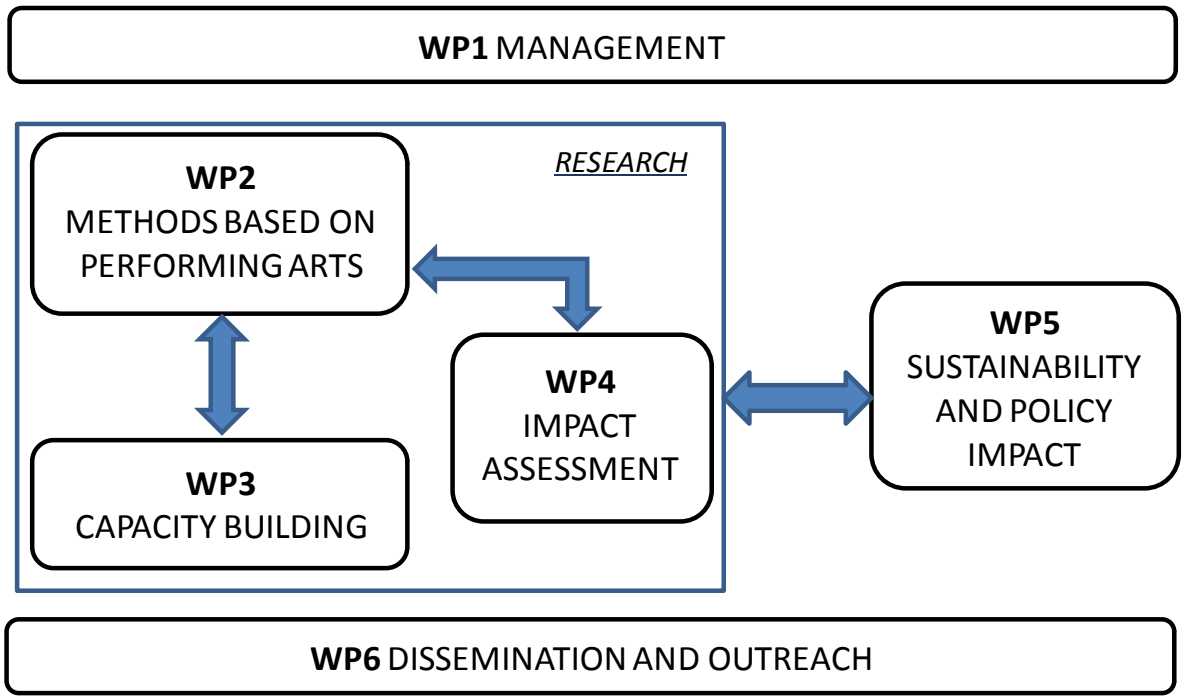

Figure 3.1a: Schematic representation of WPs interrelation in PERFORM.

WP1 will handle the whole legal and financial administration of the project and continuously monitor its technical progress. It will also facilitate the partners' communication and knowledge exchange during the project, and specifically between entities contributing to the same case study.

WP2 will explore innovative science education methods based on performing arts through a participatory educational process with secondary school students, their teachers and early career researchers in selected case studies in order to engage girls and boys in STEM and related careers. By using such approach, the developed methods will also provide students with the transversal competences they will need in a science-related professional future. In a final stage of the project, such science education methods will be scaled-out to informal learning and teaching environments. Through the participatory educational process developed by WP2, WP3 will identify and address the educational and communication skills required by teachers and researchers to develop such performance-based science education methods with students in the resulting training programs. Furthermore, the activities developed in both WPs will address the human dimension of science and the RRI values. The effectiveness in boosting students' engagement in STEM of such participatory educational process generated in WP2 will be systematically assessed by WP4.

As noted in the Gantt chart (Figure 3.1b), WP2, WP3 and WP4 will be highly interrelated along the three years of the project to conduct sound science education research.

	Months																	
Work Packages	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
WP1: Project coordination and management																		
T1.1. Project management		D																
T1.2. Facilitation of the consortium communication																		
T1.3. Scientific coordination and project monitoring			D						M			D						
T1.4. Links to STEM education research projects and networks															M			
WP2: Innovative methods based on performing arts																		
T2.1. Inclusion of human dimension and RRI in PERSEIA								D										
T2.2. Participatori process with young people													M		D			
T2.3. Pilot PERSEIA scaled up into informal context																		D
WP3: Capacity building																		
T3.1. Development of knowledge sharing workshop			M															
T3.2. Development of training and guidelines for researchers																	D	
T3.3. Development of training and guidelines for teachers																		D
WP4: Impact assessment																		
T4.1. Impact assessment research methodology				D														
T4.2. Evaluation of the social media-based impacts												M						D
T4.3. Assessment of transversal competences																		D
T4.4. Assessment of RRI																		
WP5: Sustainability and Policy Impact																		
T5.1. Generation of a sustainability plan				M				D										
T5.2. Maximize the policy impact of PERFORM																	D	
WP6: Dissemination and Outreach																		
T.6.1. Communication Plan and Tools		D																
T.6.2. Building the community relations and outreach			D												M			D

Figure 3.1b. General Gantt chart of PERFORM work plan and their components (D=Deliverable, M=Milestone)**.**

To ensure the exploitation of PERFORM results beyond the project, WP2, WP3 and WP4 will timely transfer the new knowledge generated to WP5 and WP6. WP5 will generate a sustainability plan and embed policy linkages with European policy and decision-makers designing and coordinating interaction spaces to ensure strong science-policy links with the timely transfer of the newly generated knowledge, results and practical tools generated by PERFORM. Simultaneously, WP6 will develop and execute a dissemination and exploitation plan to make the project's results, toolkits and methodologies available to their final users and to communicate the results and outcomes to wide audiences. WP6 will also build community relations to generate the best possible effects of the project outreach and to engage the general public in PERFORM. WP5 and WP6 will be highly interrelated in order to ensure a coordinated delivery and the exchange of information with all stakeholders (including the promotion and organization of a final conference).

3.2. Management structure and procedures

3.2.1. Organisational structure and decision-making mechanisms

The PERFORM project will be coordinated by the Institute of Environmental Science and Technology (ICTA) based at the Universitat Autònoma de Barcelona (UAB), and specifically conducted by the research group of the Observatory of Science Dissemination (ODC). Both ICTA and UAB have a strong background in participating and leading European and international projects in the framework of the main EU funding programmes (i.e., FP7, LIFE, Horizon2020, Interreg, ESF among others).

Scientific and operative decision-making will be organised around three main bodies: the General Assembly, the Steering Committee and the Coordination team (Figure 3.2a).

The **General Assembly (GA)** will be composed by one key person from each institution participating in the project and will ensure the sound achievement of the project objectives under the supervision of the CT. The GA will have to provide co-coordination of the research and technical work within the WPs, to ensure that the tasks in the Work Plan are achieved as expected, both in terms of quality and time. The GA will be responsible for all major decisions regarding the PERFORM, modifications and amendments to the work plan, budget allocation in accordance with the original contract, and changes to the consortium composition, if any. The GA will act under the leadership of the CT. Each partner will appoint one key person to attend the meetings that will be held every 18 months, and he/she will be authorized to make decisions and recommendations on behalf of the institution. The CT will inform the GA about time and cost irregularities if they appear.

The **Steering Committee (SC)** will be composed by each work package leader. The SC will be responsible for coordinating and reporting all activities within their designated work packages, ensuring the delivery and the quality of all deliverables, integrating work and deliverables within the work packages and for maintaining a sound communication among its members. The SC will assemble regularly every 6 months either within the scope of the consortium meetings or through

video conferences. The SC will be chaired by the CT. Each member of the SC will report on the activities, progress and, if relevant, problems within the respective work packages. A project factsheet (including planning, project progress, results, estimation of costs made) will be sent every 6 months to the CT.

The SC will also work in coordination with the Case Study Coordinators (CSC, see below) in order to ensure a fluent communication between WPs.

In the event that a conflict will be arising, it will be handled firstly by the CT and with the partner concerned. If no resolution is achieved the GA will be involved in order to resolve the situation. As last option and if the conflict may cause obstacle in achievement of project objectives, the CT shall inform the EC.

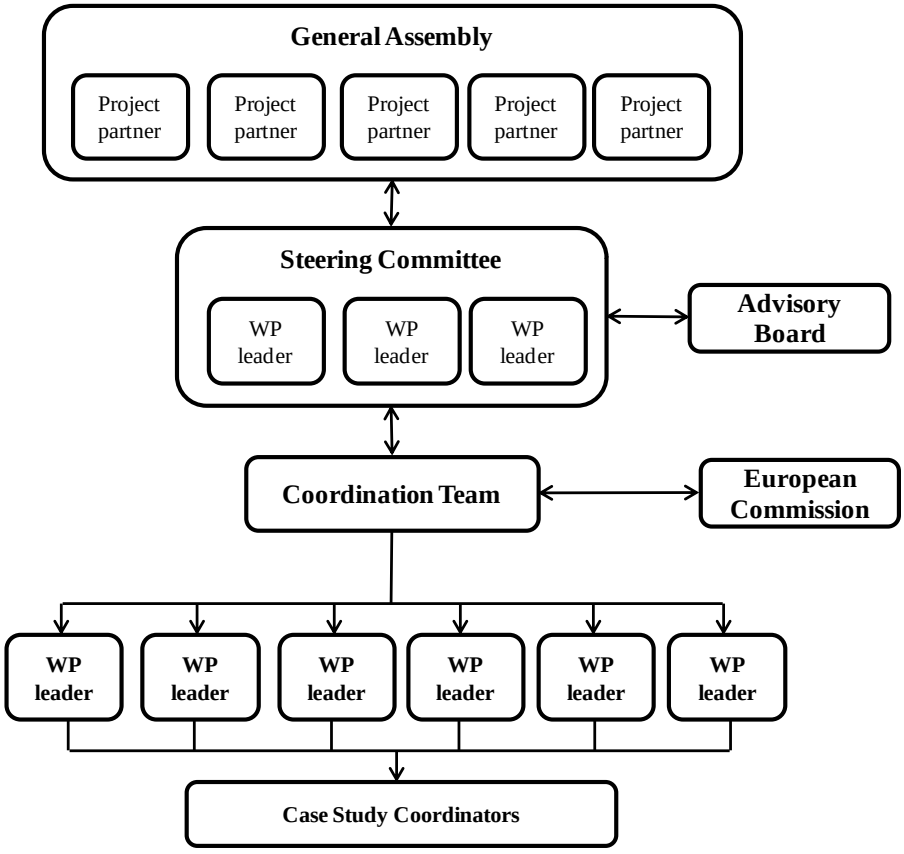

Figure 3.2a. Schematic organization of the project

The **Coordination Team (CT)** will be composed by the Project Coordinator (Prof. Maria Teresa Escalas), the Research Coordinator (Dr. Isabel Ruiz-Mallén) and a Project Manager (to be hired) at UAB.

The Project Coordinator will administer the coordination of the project and have overall responsibility for the communication with the EC and timely technical and financial reporting. The Project Coordinator and the Research Coordinator will supervise and coordinate the project

execution. They will be in charge to check and approve all reportings. Both will ensure the efficient execution of the work plan and the efficient use of financial resources in order to ensure the accomplishment of the objectives. Maria Teresa Escalas has ample experience in leading and participating in international, European, and national projects and networks related to science education and young people (e.g. YPSSI, Young People and Science in Society Issues). She has more than 30 years of experience in conducting science education and communication research projects in both formal and informal educational context and is well aware of the conditions and problems of the education system and specifically secondary schools. Isabel Ruiz-Mallén has a considerable experience in conducting research on science communication, environmental science education, and public understanding of science in a variety of socio-cultural contexts in international and national projects, as her publications show.

The Research Coordinator will share scientific responsibilities with the Project Coordinator. The Research Coordinator will supervise the project's progress monitoring and evaluation of the work packages. The Research Coordinator will integrate the outcomes and develop the scientific progress and annual reports to be submitted to the EC. She will coordinate between work packages and facilitate scientific discussion within the project. This explicit focus on synthesis will ensure that the work conducted in different work packages and in different case studies will get connected and that the separate work package reports are linked in its findings and consequences. Through that an overall common picture of insights and findings can be developed jointly. Additionally, the Research Coordinator will also be responsible for the communication with the partners and, in interaction with the GA, for the coordination of common outreach activities.

A Project Manager at UAB will support the Project Coordinator and the Research Coordinator in all legal, financial and administrative tasks and will facilitate and supervise the financial and administrative flow of the project. The Project Manager will also supervise the adherence to the grant agreement, arranged between the consortium and the EC, and to the consortium agreement, arranged between the consortium members, and will support problem solving. Legal, financial and administrative shortcomings will be identified by the Project Manager and reported to the General Assembly (see below). The CT will be based at UAB to work in close collaboration and to ensure that neither the administration nor the content drift away in different directions but lead to joint insights.

Work package leaders will be responsible for coordinating the implementation of the tasks in each case study, as well as for the timely submission of deliverables and reports of their respective work package. WP leaders will have the competence to delegate work within the work package, to decide on the methods and procedures implemented and to control the quality of the work done.

Case Study Coordinators (CSC) in each case study will be responsible for coordinating the implementation of work packages' tasks in their corresponding case study. CSC will work in coordination with the SC in order to ensure a fluent communication between WPs and case studies. Each CSC will present an update of the activities progress as well as challenges and successes encountered in each case study to the SC every 6 months.

An **Advisory Board (AB)** will act as an external and independent reviewer of the project. The membership and commitment of the AB will be defined and established along the first year of the project. The AB members will be invited by the SC. It will be an interdisciplinary and intersectorial panel composed of a distinguished expert on education and communication research, a representative of entrepreneurs in STEM fields (including industry), a member of decision making and national education agencies, and a member of civil society organisations related to the inclusion of Responsible Research and Innovation values in science education (e.g., Observatory of Gender Equity). They will peer-review the progress and annual reports and deliverables of the project, advice on the project tasks and specifically on the design of performance-based science education methodologies and training toolkits, provide links to other programs and activities, and make recommendations to the SC for new activities through the elaboration of an Evaluation Report. It is planned that they hold two video conferences over the project, at different times and locations as a result of the SC interests. The AB members will also attend the intermediate project meeting in Bristol. Additional virtual ad hoc meetings will be convened whenever needed.

During these meetings the scientific quality and practical utility and applicability of the research activities results will be discussed and enhanced. The Advisory Board solely acts as a consulting body and does not have any decision-making power.

3.2.2. Strengths of the organisational structure

The consortium's organisational structure will ensure an effective and efficient implementation of the PERFORM project through three main strengths. First, the PERFORM project clearly allocates responsibilities regarding financial, administrative and technical management aspects to the different decision-making bodies (Table 3.2a).

Second, the protocol that will be implemented to prevent financial and technical shortcomings is also an organisation structure's strength in this project. The CT, GA and SC will have different and complementary roles in supervising the work plan. In the case that any partner does not meet a deadline, the CT will send a reminder to the partner and wait for two weeks. If the partner does not react, the research coordinator will convene the GA in a video conference, where the case will be discussed and decided upon. The sanctions may range from giving a last deadline, to financial shortcuts or withdrawal of project responsibilities.

Third, each partner participating in the project has worked beforehand with at least another participating institution in other science education and communication activities or projects. Hence, cooperation between institutions is already established and tested over time at the start of the project. Further collaborations will be developed over the course of the project. The project coordinator and the research coordinator have also worked together over a long period of time leading and participating in science education and communication research projects at the Observatory of Science Dissemination and the Institute of Environmental Science and Technology at the UAB. Even though all partners have not worked in all the countries where the case studies will be developed, the case study coordinator in each country, under the supervision of the CT, will

inform and facilitate the implementation of the research to the other partners, acting as communicators between the local teams and the WP leaders.

Table 3.2. Responsibilities and power of decisions within the project (to be developed in the consortium agreement).

Project responsibilities	**Power decisions**					
	General Assembly	Coordination Team	Steering Committee	WP Leaders	Case Study Coordinators	Advisory Board
Work plan overall supervision	X	X				
Supervision of project resources	X	X				
Changes in consortium composition	X					
Time schedule monitoring		X	X			
Financial and technical reporting		X				
Allocation of work within work packages				X		
Methods and tasks implemented within work packages				X		
Methods and tasks implemented within case studies					X	
Sanctions against project partners		X				
Quality management	X	X	X	X	X	X

3.2.3. Critical risks for implementation

PERFORM has conducted a very thorough analysis of the risks connected with the execution of the project activities, and which might affect the eventual achievement of the project objectives (Table

3.2c). Risks related to the overall management and scientific coordination will be specifically addressed by the Risk Management plan as a task of WP1.

The partners are among Europe's leading science communicators, dissemination and networking specialists with many years' experience in their fields of activity. In addition, several of the partners (UAB, UoB, UNESCO, EUSEA) led other successful European projects, in which they acquired valuable experience in this type of communications and outreach, targeting young European citizens. Other partners of the consortium have also participated in previous EU proposals and projects (i.e., SMS).

3.3 Consortium as a whole

In order to ensure the successful achievement of the PERFORM objectives, the project requires the involvement and contribution of different types of actors with specific expertise in fields as performing arts, science education and communication, social science (i.e., behavioural psychology, sociology and anthropology), outreach, dissemination and policy impact. To this end, the project will draw together a team of partners with the right mix of skills, knowledge, expertise, and competences (Table 3.3a).

The lead partner is UAB (Spain), and specifically the Institute of Environmental Science and Technology (ICTA). The consortium of the project is composed by distinguished universities (UoB, UoW), successful professional science communication entities involved in science engagement, learning and communication activities (AJA, EUSEA) and specifically in science and arts (LAC, TBVT, SMS), and multilateral organizations working with young people on science education (UNESCO). The consortium team has been carefully drawn to meet the project objectives, embedding a total of 9 entities that will conduct sound research on this topic, develop effective performance-based science education methodologies and training toolkits that will contribute to increase young people's interest in STEM and related careers and promote dissemination actions during the project.

UAB, as the consortium's leader, will coordinate the whole project (**WP1 leader**). The vast experience of UAB, and specifically of ICTA, in leading EU projects ensures the effective management and coordination of the consortium. Moreover, the PERFORM project coordinator and her research team (Observatory of Science Dissemination) has also been involved in the steering committee of the main Youth and Science European network, called YPSSI (Young People and Science in Society Issue) till recently. It is also important to consider that other partners and/or their current representatives have been also involved in EU projects. Its previous expertise will positively contribute to the project management and development.

To establish timely and sound communication and coordination between the partners of the project, previous collaborations among partners will facilitate and promote an efficient execution of the planned work, as those detailed below.

The **exploration and development of innovative science education methods by using performing arts** (i.e., PERSEIAs) to foster direct interactions between young people and

researchers is one of PERFORM specific goals, which will be addressed by **WP2.** TBVT is the most suitable entity to lead this WP since the TBVT team of STEM researchers and communicators has developed science communication activities using drama techniques that consist of short scientific-monologues in a humoristic tone and a final open space for questions. The casual tone of the conversation created during the monologues promotes public participation and interest. Specifically with secondary school students, these shows have allowed for establishing a direct interaction with the students and breaking some of the stereotypes related to science and the scientists. TBVT will work jointly with LAC from France and SMS from UK in order to implement the project in three case studies. LAC and SMS also have a huge expertise in communicating science through the use of a diversity of performing arts and therefore their common role in using a science and arts-based communication approaches will facilitate teamwork. In order to support and extend the capacity of TBVT, LAC and SMS in conducting sound research to systematically explore performance-based approaches addressed to design science education methods, the consortium will includes two universities: UAB and UoB. The UAB team will provide to the consortium previous expertise in conducting research on participatory and trans-disciplinary education methods on social and environmental topics through the Observatory of Science Dissemination's Annual Agenda funded by the Spanish Foundation of Science and Technology since 2008, in which TBVT has also participated. UoB, through its Centre for Public Engagement has wide experience in public engagement projects and events that involve multidisciplinary collaborations including art and science collaborations. Some of those collaborations include for example *danceroom Spectroscopy*, a project bringing together quantum chemists, choreographers, dancers and technologists, and Seeds of Change that brought together researchers from different disciplines, sound artists, storytellers, schools and community groups to discuss and work around issues of heritage, history and diversity in Bristol. For PERFORM, the Centre for Public Engagement will work together with SMS and researchers and bring all its expertise to produce participative performance-based scientific education activities to engage and inspire young people with science.

UoB will also lead WP3 on building science education and communication capacity for teachers and early career researchers. The Centre for Public Engagement, the Graduate School of Education (GSoE) and the Bristol Doctoral College (institutions from UoB) have wide experience in teacher and researchers training, respectively, and will collaborate with the UoW and AJA as well as with external experts to develop, deliver and test a training programme for these two target groups. Such experience on training teachers and researchers on science communication and outreach makes UoB in the most suitable for WP3 leading. For instance, the Bristol Doctoral College has experience in developing training programmes for PhD students to develop their skills in different fields including responsible research, personal development, professional and career development and research tools and teaching amongst many others. The GSoE is also actively involved in the Teach First programme that aims to train and support people with leadership potential to become inspirational teachers in schools in low income communities. AJA will be key partner in complementing UoB expertise and enhance the WP3 capacity building process due to its previous expertise in organising

summer schools and other courses in order to train researchers on reflexivity in the research practice (i.e., integrity, responsibility, outreach, social dimension of science).

The impact assessment of the resultant participatory education will be led by UAB (WP4). The UAB research team has considerable expertise in developing evaluation tools to assess the effectiveness of science education and communication activities in shaping young people's perceptions and attitudes towards science and technology, mainly in formal learning and education settings. Furthermore, the Observatory of Science Dissemination is currently coordinating, among other projects, a pilot national project to evaluate the inclusion of RRI values in science communication and dissemination activities in Spain (*EXODI*, funded by the Spanish Foundation of Science and Technology) and, since five years ago, a regional project that promotes and evaluates secondary school students and young researchers dialogues on scientific issues in Catalunya (funded by the Barcelona's Institute of Culture). UAB is also currently collaborating with AJA in monitoring an inquiry-based science education project where the secondary school students are stimulated to engage in dialogue with researchers, and to co-create open questions (*Nouveaux Commanditaires Sciences* funded by Foundation de France). UoW will complement such impact assessment by delivering a groundbreaking analysis of responses to performance-based science engagement on the social media platform Twitter. UoW will bring extensive expertise in this field of research, with a string of proceeding research grants in the domain of social media-based public engagement, including projects funded by the Arts & Humanities Research Council, the National Endowment for Science, Technology and the Arts and other UK government funders.

The combined expertise of **UNESCO, leading the sustainability and policy impact (WP5), and EUSEA, leading PERFORM dissemination and outreach (WP6)**, will be crucial to ensure a sound communication strategy that enhances the dissemination and exploitation of the PERFORM research project**.** UNESCO will provide access to European science policy-makers through its Member States delegations in Paris and offer its resources and more than 50 years of expertise in science education, science policy and gender studies. EUSEA will contribute communication and outreach skills, experience and expertise as well as an extensive and diverse network of science events and science communication experts all over Europe. In particular, members of EUSEA have extensive experience in adding informal learning processes, programmes and activities, such as specific school programmes in festivals, and thus also considerable knowledge about the evaluation and assessment of such events. Furthermore, the members of EUSEA are most often well positioned in between the local or regional general public and other stakeholders and policy-makers, including school authorities, in municipalities and local industry – both of which very important partners in the development of attractive science careers and education. Also, *Scientix* is run by the European Schoolnet, which is a EUSEA member. Individual EUSEA members and the European Schoolnet have collaborated on a number of projects, and the two entities together on one of the *WONDERS* projects, in 2007.

The combined expertise of UNESCO and EUSEA will be crucial to organise a successful final conference of the project. UNESCO will contribute the European and international dimension through its global outreach to states and ministries and EUSEA will contribute the expertise of event experts and project managers within the science communication field. UNESCO and EUSEA

have collaborated before with TBVT and AJA in science outreach events (e.g. Science Slam Mallorca 2014, Isola di Einstein 2014) which will facilitate and promote an efficient communication strategy. LAC also has a good national and international network of organisations mixing arts and science that can help disseminate the outcomes of the project (e.g. *ECSITE*).

Table 3.3a. Schematic representation of partners' expertise in relevant fields for PERFORM.

Expertise	**UAB**	**TBVT**	**UoB**	**SMS**	**UoW**	**AJA**	**LAC**	**UNESCO**	**EUSEA**
Science education and communication research	X		X		X		X		
Performed-based activities boosting young people's engagement in science		X		X		X	X		
Participatory and trans-disciplinary approaches in science education	X	X	X	X		X	X		
Training in reflexivity, critical thinking and RRI	X		X			X	X	X	X
Training on scenic arts and science communication	X	X	X	X		X			
Impact assessment of science education activities	X				X				
Linkages with policy-makers								X	X
Communication, dissemination and exploitation	X		X					X	X

3.4 Resources to be committed

PERFORM involves 9 institutions from different EU countries, including academia representatives (UAB, UoB, UoW), SMEs (EUSEA, LAC, AJA), civil society organizations (TBVT, SMS) and one international organization (UNESCO).

The overall PERFORM budget (and requested contribution) amounts to 1.997.252,50€, considered to be adequate for the successful implementation of the envisaged project activities.

The total effort for the project is 318 p-m including permanent personnel and specifically hired experts for the implementation of the project.

Each partner of the Consortium has actively contributed to the definition of the budget providing accurate estimation of costs in consistency with its specific national law and institutional usual practice. Also, the adequacy of the overall financial plan has been verified by the financial departments/experts of all participating institutions. Costs have been allocated to optimise the scientific and technical quality of the project, to reach the best value for money and to maximize the cost-effective use of resources. Financial resources have been distributed and balanced between partners in relation to their specific role and contribution within the PERFORM work plan. In particular, no single country receives more than 35% of the overall project budget.

Major efforts (232 p-m) and related costs (63% of budget allocation) are allocated to RTD activities to be carried out within WP2, WP3 and WP4 which represent the core actions of this RIA. Such actions are fundamental to develop the innovative PERFORM participatory action research approach in three ways. First, these actions are needed to explore innovative science education methods based on performing arts to boost young people's interest and motivations in STEM and related career. Second, these research actions are also addressed to build teachers' and researchers' capacity and skills to teach science by using such innovative methods and thus contributing to the participatory educational process. Finally, research is needed to conduct the impact assessment of this educational process in order to assess the effectiveness of the innovative methods in promoting young people's engagement in STEM.

Management activities consist of 24 p-m. They are mainly attributed to the Coordinator and include primarily the Project manager and Research Coordinator effort, but also foresee the contribution from all consortium partners to project management and scientific coordination. The total budget for management activities accounts for the 7% of the overall requested contribution, which has been considered necessary to a 3-year project involving 9 partners.

A relevant share is also dedicated to other key activities such as project dissemination (34 p-m and 19% of the total requested contribution) and exploitation (28 p-m and 11% of the total requested contribution), considering them crucial for an effective uptake of project outcomes as remarked in the description of the methodological approach. Since the research results and outcomes will be generated in selected case studies from three European countries, an effective dissemination and communication strategy will ensure the exploitation and potential replication of such methods and tools across Europe. At this aim, personnel efforts have been allocated not only to the WP leaders (UNESCO and EUSEA) but also to the other partners of the consortium. Costs allocated to WP6

also include the organization of the final international conference addressed to scientists, practitioners, entrepreneurs and policy-makers in the fields of science education and communication. A budget portion has been also allocated to the subcontracting of minor tasks. Considering the different budget items, the highest share is allocated to Personnel costs, which represents 61% of the overall PERFORM financial resources. The personnel costs consists of highly qualified researchers and technical experts who will lead the development of the research actions described above and also be directly involved in the dissemination, communication and management of their corresponding institutions. Such personnel costs also include professional communication and policy experts who will lead the dissemination and exploitation of the PERFORM project.

Travel & Subsistence costs for all partners to allow them to take part to technical meetings and to the governance bodies (i.e., General Assembly) to ensure the best coordination, including travels for the attendance of project meeting by the AB members. A share of the T&S costs is allocated to dissemination activities and policy events to participate and / or to present contents and results of the PERFORM. Where relevant also T&S for research activities and joint actions among partners have been considered, in particular for attending the training organized within WP3 and visiting the case studies in France, Spain and UK.

A minor allocation of resources will be dedicated to the purchase of equipment and durable goods (in accordance with the usual amortization practices of each institution) such as audio visual equipment to be used during the PERSEIA events and specific recording and data collection equipment for social media analysis

Other goods and services include economic compensation for teachers and researchers attending project workshops in WP2 and WP3, materials and services for the organization of project meetings, events and training workshops, audiovisual materials for dissemination, and fees of conferences to disseminate the results to scientific and non-scientific audiences.

Indirect costs (corresponding to 25% of direct costs excluding subcontracting) have been calculated considering the indirect cost models chosen by each participant, according to the provisions of EC financial rules, and each specific accounting principle.

The table below shows details for each participant where its sum of the costs for' travel', 'equipment', and 'goods and services' exceeds 15% of the personnel costs (according to the budget table in section 3 of the proposal administrative forms).

Table 3.4b. 'Other direct cost' items (travel, equipment, other goods and services, large research infrastructure)

UAB	Cost (€)	Justification
Travel	37000	Intermediate meeting (UK, 5 days, 2 people): €3150 Final meeting and conference: (France, 5 days, 2 people): €2500 Knowledge exchange meeting (UK, 5 days, 2 people): €3150

		Research trips/meetings to case studies (Spain, France and UK, 5 days, 1-2 people): €18600 National and international trips for dissemination, communication and policy impact (i.e., Future Classroom Lab meeting, 3 days, 1-2 people; ESOF 2018, 2-3 days, 1-2 people): €4000 Advisory Board travel costs (final conference in France, 1-2 days, 4-6 people): €5600
Equipment	1000	Video camera for impact assessment data recording
Other goods and services	23000	Hosting the kick-off meeting consortium meeting (Spain): €15000 Audio-visual material for dissemination: €1100 Fee of scientific conferences to disseminate the project: €1600 Publication costs (open access): €3000 Translation or language revision of the project outcomes (policy briefs and other publications): €2300
Total	61000	

TBVT	**Cost (€)**	**Justification**
Travel	25000	• **National Trips (7000€)** National trips to develop and deliver PERSEIA and workshops at 10 to 16 high schools to be chosen in Spain. For each school, from 3 to 4 members of TBVT will travel to execute PERSEIA and workshops. Average cost per trip including accommodation for two days: 200 euros / person • **International trips to conferences (8000 €)** ESOF 2016 (Manchester) or PCST 2016 (Istambul) and ESOF 2018 or PCST 2018; Final dissemination conference; Two meetings with Policy-Makers (WP5). For each trip, from 1 to 2 members of TBVT will travel. Average cost per trip including accommodation for three days: 1000 euros /person /conference • **Management and research meetings (10000 €)** Two members of TBVT will attend kick-off and intermediate meeting. From one to two members of TBVT (as WP2 leader) will visit, at least once per year, SMS-UoB (UK) and LAC (France) in order to ensure an optimal development and delivery of PERSEIA and workshops. Average cost per trip including accommodation for 1 week/ person: 800 euros
Equipment	6000	Audio-visual equipment for PERSEIA: Projector: 2000€ Microphones: 1500€ Camera: 500€ Props and perishable materials for PERSEIA: 2000€
Other goods and	9500	• **Materials and food for workshops/shows (1500€)**

services		Refreshing, snacks and meals for participants of PERSEIA workshops in Task 2.1: up to 10, in Task 2.2: up to 30, in Task 2.3: up to 5. • **<u>Audio-visual material (4000 €)</u>** Generation of flyers, posters, trailers, web content etc. for the PERSEIA will be necessary to ensure the impact objectives and to reach the possible beneficiary local audiences as young people, secondary school teachers and young researchers. • **<u>Registration fees to conferences (4000 €)</u>** Cost of registration for one to two members of TBVT in conferences for disseminating the project as ESOF 2016 (Manchester) or PCST 2016 (Istambul), ESOF 2018 or PCST 2018, final dissemination conference and two meetings with Policy-Makers (WP5). Average cost per person / conference: 800€.
Total	40500	

UoB	**Cost (€)**	**Justification**
Travel	14340	Travel for workshops, events, meetings and activities: Workshops – 4 training workshops in Bristol plus Summer Schools externally Events- presentation of the projects in conferences and other national and/or international dissemination and policy impact events Meetings – Consortium meetings and other meetings with partners in the UK and abroad. 2/3 people to travel from UoB. Activities – associated to PERSEIA performances (details below)
Equipment	0	
Other goods and services	31500	Coordinating training workshops – there will be in Bristol at least 4 training workshops, 2 for researchers and 2 for teachers. Summer schools in France and Spain. (7164.86€) Hosting knowledge exchange workshop - 4 days (5728.65€) Conducting PERSEIA activities – number of performances to be determined in collaboration with Science Made Simple, but at least one project per year will be developed. This cost include materials, transport of materials, venue, etc. (10026.49€) Hosting the consortium intermediate meeting - 5 days (2867.02€)

		Toolkit development – costs could include graphic designer, illustrator, film maker, narrator, etc. but the type of costs will depend on the final format which will be determined by the needs of the partners (5712.98€)
Total	45840	

UoW	Cost (€)	Justification
Travel	10400	Kick off Meeting Barcelona - Travel €300, 2 nights accommodation and subsistence €320, 1 person Intermediate meeting Bristol - Travel €135, 1 night accommodation and subsistence €160, , 1 person Final Meeting Paris - Travel €300, 2 nights accommodation and subsistence €320, , 1 person KE Meeting Bristol - Travel €135, 1 night accommodation and subsistence €160, 1 person Future classroom lab in Brussels - Travel €300, 3 nights accommodation and subsistence €480, 1 person 2 x 3-day trips to Bristol @ €455 each (Travel €135, 2 nights accom €320 , 1 person 2 x 3-day trips to Paris @ €620 each (Travel €300, 2 nights accom €320), 1 person 2 x 3-day trips to Barcelona @ €620 each (Travel €300, 2 nights accom €320), 1 person Dissemination at EU and UK conferences – registration fees, travel and accommodation (€4400), 1 person
Equipment	9000	Project laptops and accessories €4750 Specialist software €500 Recording equipment for data collection €1000 Tablets and accessories €2750
Other goods and services	9160	Casual research assistance to contribute to detailed data analysis, literature searches and other tasks as needed, including annotating tweets for the automated analysis tool – 194 hours @ €21.15 per hour = €4103.10 Compensation for approximately 45 student participants @approximately €24 per person in the online ethnographic research who agree to be interviewed at length €1096.90 Translation (total €3.960) will be allocated across multiple smaller subcontracts as follows: 1. Social researchers (expected to be postgraduate students) from Spain and France commissioned to conduct set number of interviews, which they translate to English, as well as translating tweets and related materials from those individuals into English for the research assistants to analyse (15 foreign language interviews plus full sample of tweets per country (€960 per country) x 2 countries = total of € 1.920). 2. Translation of social media report deliverable 4.2 into Spanish

		and French (€240 per language = € 480.00). 3. Translation of project research into Spanish and French for publication in Spanish and French language journals (€240 per language = € 480.00). 4. Helping with the translation aspect of adaptation of the automatic social media analysis tool to Spanish, French language data (€ 1,080.00).
Total	**28560**	

Travel costs are consistent with the University of Warwick policies, and all travel costs are directly linked to the conduct of the action. Appropriate financial records relating to all travel and other costs will be kept by the University.

UNESCO	**Cost (€)**	**Justification**
Travel	24000	International trips to conferences (coordination, dissemination and policy impact of the project) and meetings (management of the project): • **Big Events (10 000€)** 2015 World Science Forum, Budapest 2016 EUROSCIENCE OPEN FORUM (ESOF), Manchester 2016 EMBO Meeting, Birmingham 2017 EMBO Meeting, Mannheim 2015/2016/2017 World Science Day, Paris (travel for invited participants 3-5 people) For each Big Events, at least 2 UNESCO staff will travel. • **Workshops (3 000 €)** Kick-off meeting and intermediate meeting and workshops (2) will be organized in each country (France, Spain, and UK) in which the twelve pilot secondary schools identified are located. For each workshop to be organized, 1 to 2 UNESCO staff will travel. • **Meetings (11 000 €)** UNESCO plans to organize several meetings for policy makers. Some of them will be organized at UNESCO HQ. The others around Europe.

		At least 3 to 5 meetings in HQ. At least 3 to 4 capacity building meetings all around Europe. For each meeting to be organized: - 1 to 2 UNESCO staff will travel - 6 to 11 Participants will be invited
Equipment	0	--
Other goods and services	90000	Organization of meetings and events with partners and policy makers (including final event), materials & food for the meetings with policy makers: 50000€ - At least 9 conferences will be organized for policy makers around Europe. - At least 6 to 11 meetings will be organized in HQ including the 3 PERFORM consortium meeting Fee of conferences to disseminate the project: 22000€ Audio-visual material for dissemination: 18000€
Total	114000	

EUSEA	**Cost (€)**	**Justification**
Travel	11500	Kick-off, intermediate and final project meetings (4-5 days each): 3000 International trips for dissemination, communication and policy impact (i.e., Future Classroom Lab meeting, 3 days, 1-2 people; Three Scientix conferences (Brussels): 2-3 days, 1-2 people, additional travels for policy or dissemination meetings): €8500
Equipment	0	--
Other goods and services	6500	Provisions for a sustainable access to the site for a period of 5-10 years after the project, i.e. web hosting at € 3,000 Displays for conferences, € 1500 Roll-ups for conferences and meetings, € 1000 Printed material € 1000
Total	**18000**	

4. Members of the consortium

4.1. Participants (applicants)

4.1.1. UAB

The **Universitat Autònoma de Barcelona** (UAB) is one of the major public universities in Spain, with over 41000 students and almost 3000 researchers and teaching staff.

Currently, it offers 84 undergraduate courses, 30 official Master's degrees, 6 Erasmus Mundus and one doctorate Erasmus Mundus. The UAB is a pioneering institution in terms of fostering research. In 2009, UAB achieved the institutional recognition as a Campus of International Excellence by the Ministries for Science and Innovation of Spain. Regarding the UAB's research activity the following data stands out: 3,496 articles published in indexed journals (2012 Thompson Reuters WOK); 347 research agreements; 231 research national projects; 51 patents claimed (2012) and 53 spin-off companies (2012). Furthermore, The UAB has so far been a partner in 168 projects of the 7FP, acting as the coordinator for 16 of them and received more than 44 million Euros of funding. UAB is currently hosting 9 excellent projects funded by the European Research Council (ERC Starting and Advance Grants). Regarding the Marie Curie Action, UAB is the first Spanish university in number of projects and has already hosted 33 Marie Curie fellows. Finally, the UAB also participates in more than 114 European research projects outside the 7FP (DG EAC projects, LIFE, CORES, ESF, NATO etc). The Institute of Environmental Science and Technology (ICTA) of UAB was established in 2003 with the objective of promoting interdisciplinary research and training in the area of environmental science and technology. At present, ICTA is made up of a research staff of more than 60 internationally known specialists and has an active publication role with an average of ca. 120 SCI/SSCI articles per year. In the period 2006-13 ICTA was awarded more than 16 million€ in direct funding for research projects and agreements, a large part coming from the European programs. In particular, at present 23 European and International collaborative projects are ongoing, funded in the framework of the main EU programmes (FP7, Interreg, LIFE+, etc), of which 4 under ICTA's coordination.

Curriculum Vitae

Teresa Escalas holds a PhD in Chemical Sciences and she is the director of the UAB Observatory of Science Dissemination (ODC), involving civil society in research decision-making thorugh mutual learning and reflection on their interests and needs in science and technology. Her main interest deals with science communication with general public and school context through coordinating participatory activities, designing and evaluating projects, studying social perception of science and technology, often in collaboration with municipalities authorities. She is member of the Catalan Council on Scientific Communication and of the European Network on Training in Scientific Communication (ESCW – ESConet). She is Advisor for the web page "Recerca en Acció" and Spanish coordinator of the European project "Young people within the building of a European knowledge-based society". She is also a member of the research group TIRE (Quality

Research Group denomination from the Catalan Government) and the research group in computer technology and educative research.

Isabel Ruiz-Mallen holds a PhD in Environmental Sciences at the UAB (2009). She is currently working at the ICTA-UAB in the framework of the FP7 COMBIOSERVE project on analysis of communities' adaptive capacity to environmental and socioeconomic changes. Her research interests lie in local perceptions and attitudes towards natural resources conservation, local participation in community conservation and natural resource management, environmental education, public understanding of science, and science communication. She is also collaborating with the Observatory on Science Dissemination at the UAB (ODC).

Maria Heras holds a MSc in Interdisciplinary Studies in Environmental, Economic and Social Sustainability (2008). She is currently working at ICTA-UAB in her PhD research, through which she explores the interplay between arts, science and participatory methods in social learning processes. Her main research experience and interests are connected to the design and facilitation of participatory processes within action-research and participatory knowledge integration in Sustainability Science.

List of publications:

- **Heras, M.,** Tàbara, J.D (2014) Let's play transformations! Performative methods for sustainability. Sustainability Science 9(3): 379-398
- **Ruiz-Mallén, I.**, Escalas, M.T. (2012). Scientists seen by children. A case study in Catalonia, Spain. *Science Communication* 34(4): 520-545.
- Reyes-García, V., Kightley, E., **Ruiz-Mallén, I.**, Fuentes-Pelaez, N., Demps, K., Huanca, T., Martinez-Rodríguez, M.R. (2010) Schooling and local environmental knowledge: Do they complement or substitute each other? *International Journal of Educational Development* 30, 305-313.
- **Ruiz-Mallén, I.**, Barraza, L., Bodenhorn, B., Ceja-Adame, M.P., Reyes-García, V. (2010). Contextualising learning through the participatory construction of an environmental education programme. *International Journal of Science Education,* 32(13): 1755 - 1770.
- **Ruiz-Mallén, I.**, Barraza, L., Bodenhorn, B., Reyes-García, V. 2009. Evaluating the impact of an environmental education programme. An empirical study in Mexico. *Environmental Education Researc*h, 15(3), 371-387.

List of projects:

- Teresa Escalas (PI) *TANDEM-Schools Project*, Autonomous University of Barcelona, Rovira i Forns Highschool. Fundación Catalunya-La Pedrera. € 60.000, 2013-2016.

- Teresa Escalas (PI), *Anual Agenda of Activities from the UCC+i*, Observatory of Science Dissemination, Autonomous University of Barcelona. Spanish Foundation of Science and Technology (FECYT), Ministry of Science and Technology. € 11.000. 2013-2014.
- Teresa Escalas (PI), *Shall we explain or dialogue? Assessment on RRI features in activities of science dissemination*. Observatory of Science Dissemination and Universitat Autònoma de Barcelona. Spanish Foundation of Science and Technology (FECYT), Ministry of Science and Technology. € 26.000€. 2013-2014.
- Teresa Escalas (PI) *Talk, Experiment and Chat with a scientist in Barcelona*. Institute of Culture, Barcelona City Council. € 3000, 2014.
- Teresa Escalas and Isabel Ruiz-Mallén (PI), *Science dissemination course "Opening science: building bridges between research and society*. Collaboration Agreement with "La Caixa". € 9.000, 2013.

Infrastructure

None specific infrastructure is needed to develop this Project.

4.1.2. TBVT

Founded in 2013, and with an outstanding exponential growth, **The Big Van Theory** (TBVT) is a Civil Non-profit Organization, composed by 12 scientist, 11 of them PhD holders, created to perform science educational and outreach activities around Spain and internationally. TBVT aims to share the enthusiasm about science by offering humorous performances and stand-up comedy shows that are tailor-made for schools, festivals, museums, adult audiences at pubs, discos, etc. TBVT's mission is to engage people with STEM topics as part of their general culture, inspire the next generation of scientists and engineers, and to strengthen the connection between researchers and the public. We do this in two ways:

- By performing Stand-Up comedy shows, designed and executed by scientists, not only in places thought to hold scientific events (schools, museums, festivals) but also at places that are normally out of the scientific circuit, like theaters, pubs, discos. In every show, we leave a space for dialogue with the public, both in person and via social media, in which scientists can learn about societalconcerns about science, and the public can talk and explore how the real life of a scientist is.
    - Since June 2013, we have performed in more than 250 shows, reaching around 20.000 people.
- By training professional science communicators for high quality science shows, through a variety of formats. These include live presentations, demonstrations, workshops on theatre techniques and other artistic means. We have trained more than 250 science professionals in communication skills to date

The impact of TBVT shows have been assessed by external auditors in two different national projects where TBVT is involved:

- Ciudad Ciencia (CC) is a spanish scientific program organized by CSIC (Spanish National Research Superior Council) whose aim is to bring scientific educational activities to cities below 30.000 inhabitants. TBVT has had great success in contributing to this initiative, especially among young people. More than 1700 highschool students have taken part in the TBVT show in 2014 with more than 64% showing an improvement in their regards towards the scientific labour and more than 50% stating that the contents exposed during the show were excellent[53].
- TBVT has also taken part in private initiatives to bring science closer to people. The most important of which has been an extensive collaboration (7 shows) with the "La Caixa" Foundation. An external assessment undertook by "La Caixa" Foundation during first trimester of 2014 showed that more than 80% of the attendants enjoyed being talked about science in the show, and more than 77% preferred TBVT format to the standard scientific talk format. Notably, 65% of attendants stated that they would talk about science with friends or relatives due to they learned new scientific concepts during the show.

Curriculum Vitae

Oriol Marimon Garrido, PhD, will be the coordinator of PERSEIA development. He is co-founder and active science communicator in TBVT, specialized in clown and storytelling techniques. He has been working as a non-formal educator instructor with children and teenagers for more than 10 years, being actively involved in international cooperation projects related to scenic arts and science. As a science communicator trainer, he has developed a solid experience in mediation with young people and has organized numerous science activities with various audiences to publicize scientific knowledge. He has coordinated as well the design and execution of the TBVT communication training courses since the beginning of the company. He holds a PhD in biophysics.

Helena González Burón, PhD will be the coordinator of PERSEIA participatory processes. She is co-founder and active science communicator in TBVT, specialized in drama techniques. He has been working as as an explainer in the Scientific Park of Barcelona for more than 6 years. She has coordinated and executing international cooperation projects related to gender equality, becoming an expert in participatory processes developed in conflict zones. She has participated as a trainer in TBVT training courses since the beginning of the company. She holds a PhD in biomedine and a diploma in drama studies.

List of publications

- Bringing Science to Stage. *Science Careers.* By Michele Catanzaro. July 23, 2014

[53] Official poll undertook by the CC Program, sample of 365 students between 14 and 18 years old, manuscript in preparation.

- 13th International Public Communication of Science and Technology Conference (PCST). Salvador, Bahia, Brazil. The Big Van Theory, scientists on the road. Performance 20745. 5-8 May, 2014.
- The Big Van Theory: Los otros nerds que tienen fans. SciDev.Net Latin America. By Aleida Rueda. May 8, 2014
- *2014.* Science communication book "Si tu me dices GEN, lo dejo todo". Publisher: La Esfera de Los Libros.
- 2014 (manuscript in preparation). Science Communication through humour, a new way of bringing science to the general public.

List of Projects

- More than 20 shows within Ciudad Ciencia. (Science City), CSIC.
- Stand-up comedy shows at science Festivals: CERN (Comedy collider: LHCollider 2014), Cheltenham Festivals (FameLab final show 2014), La Isola di Einstein (Italy, 2014).
- Training courses for Science Slam participants in Spain and México.
- Training courses for students and educators in Parque Explora (Colombia).

Infrastructure

None specific infrastructure is needed to develop this Project.

4.1.3. UoB

The **University of Bristol** is one of the most prestigious universities in the UK. It is a thriving international community combining excellence in research and innovation with a vibrant entrepreneurial culture. Research is at the heart of the University's mission and accounts for its international reputation. The University organizes its academic affairs in 25 Schools and 15 research centers arranged in six faculties: Engineering, Science, Medicine and Dentistry, Medical and Veterinary Sciences, Social Sciences and Law, and Arts. In the 2008 UK Research Assessment Exercise (RAE2008), nearly 93% of research at the University was deemed to be of an international standard. Over 60% of the research assessed was awarded either the top 4* rating, defined as 'world leading', or the 3* rating, 'internationally excellent'. As a result, in 2009-10 the University was allocated the 8th highest share of government research funding in the UK. The University participates in hundreds of international collaborations both within and outside of Europe and attracts research funding from organisations around the world.

Centre for Public Engagement

Within the Communications Division, the **Centre for Public Engagement** (CPE) works across the University of Bristol to support and promote public engagement with research and teaching. This involves running a programme of public engagement activities including discussion events, exhibitions and festivals, and helping academics to engage with the public by working with them to

attract funding, providing appropriate training and facilitating collaboration with partners outside the University. The CPE works closely with the National Coordinating Centre for Public Engagement which shares best practice in engagement across the UK universities.

Graduate School of Education

The mission of the Graduate School of Education (GSoE) is to develop learning and leadership for a changing world through research and teaching that promotes achievement, opportunity and social justice.

Since its founding in 1913, the GSoE has achieved international prominence and distinction in developing the professional and academic skills of educationists in the United Kingdom and around the world. Nowadays, more than 60 academic colleagues teach and guide over 600 students in doctoral, masters' and initial teacher education programmes each year. These programmes lead to careers in research, teaching, school leadership, educational and social policy, educational psychology, teaching English as an additional language and many other fields."

Bristol Doctoral Centre

Bristol's outstanding research profile is underpinned by the contribution of our postgraduate researchers. The Bristol Doctoral College (BDC) provides a focal point for doctoral training activity and researcher development across the University and in collaboration with our partner institutions.

With over 250 PhD scholarships available across our six faculties, Bristol has one of the largest concentrations of funding for collaborative research training in the UK. This includes doctoral training grants from all UK Research Councils alongside EU funding and charitable organisations. The BDC offers integrated support for staff setting up and running doctoral training partnerships and centres.

Curriculum Vitae

Centre for Public Engagement

Dr Kate Miller is the Academic Liaison Officer at the Centre for Public Engagement, where she works with staff and students wishing to engage audiences beyond academia. This includes brokering partnerships, helping researchers develop and evaluate their own engagement activities, providing training and development opportunities, and organising engagement activities. Current projects include SYNENERGENE (funded by the EU), which is exploring responsible research and innovation in synthetic biology, and Know your Bristol (funded by the Arts and Humanities Research Council). She has worked as a public engagement practitioner for over 7 years and holds a PhD in bioscience engineering.

Dr Fiona Hyland, Centre for Public Engagement, has 14 years of experience working in higher education; 7 years as a researcher, with a PhD in health psychology, and an additional 7 years working in Professional Services supporting the teaching and research activities of staff and students. Fiona has a wide range of project management skills gained through the supervision of a

number of research and public engagement projects including in 2013 *Seeds of Change: Growing a Living History of Bristol*, a Heritage Lottery Funded community engagement project.

Mireia Bes is Public Engagement Officer at the CPE where her role is to look after the organisation of CPE's large-scale public events such as Bristol Bright Night (part of EU Researchers' Night) or the University's contribution to the Bristol Festival of Nature. Before joining the CPE in October 2012, she worked at the Barcelona Science Park coordinating the public engagement activities and developing content for several FP7 European Projects such as Nanoyou, Xplorehealth and Nanopinion, that aimed to engage young people with research in biomedicine and nanotechnologies. She also has an MSc in science communication from Imperial College London where she did her final project on Theatre as a tool in Science Education.

Graduate School of Education

Jon James holds a M.Sc in Science Education from the University of Bristol and is currently working on a Ph.D in the area of science teachers' development of their subject knowledge. He has been engaged with research projects examining teaching approaches that integrate literacy and science in primary schools, and the development of behaviour management skills in trainee teachers. He has also carried out work for the National Network of Science Learning Centres on the importance of subject knowledge in science teaching and the needs of early career teachers in this area. He leads and teaches on several Science teacher training programmes at the University of Bristol, including the PGCE and Teach First programmes. Prior to working at the University he spent over 20 years working in a variety of roles in UK schools and as a local government adviser for education. He is a member of the strategic research group for Natural England, a body which promotes the engagement of communities with the environment.

List of publications

- James, J. (2014), Not using scientific terminology? A study that investigates language and concept development in the primary science classroom . In Constantinou, C.P., Papadouris, N. & Hadjigeorgiou, A. (Eds.), E-Book Proceedings of the ESERA 2013 Conference, Part 16, 71-81, Nicosia, Cyprus: European Science Education Research Association
- Berry,B. , James, J., Rivett, A. & Wharf, M. (2013) Identifying subject-knowledge gaps and CPD needs of early career teachers. A report by the Science Learning Centre South West for the Research, Impact & Accreditation Group of the Science Learning Centre Network
- Pabuccu, A., Erduran, S & James, J.P. (2012). Heating up the discussion: promoting and investigating argumentation in the context of chemistry stories. International Dynamic, Exploratory and Active Learning Conference, Bayburt, Turkey

Sarah Eagle holds a PhD in Education at the University of Bristol. Her main interests are in learning in informal contexts (the home, museum, public space) and other contexts that are not

explicitly framed by educators and institutions, and in designed artefacts (especially new technologies) in such settings. Over the last three years she has worked as evaluator of an informal science engagement programme delivered by one of the city's museums (2010-present), carried out an Arts Council UK funded research study of the work of a group of Creative Technologists, and run a UoB funded interdisciplinary workshop series for academics on Creativity, Learning and the Internet of Things. She was a team member of the EU FP7 projects *STELLAR* (the European Network of Excellence in Technology Enhanced Learning and *CoCreat* (Enabling Creative Collaboration through Supportive Technologies). Currently she holds an ERCIM postdoctoral fellowship and is working with colleagues at the Norwegian University of Science and Technologies (NTNU) on a study of learning and creativity involving physical computing across a variety of educational and informal settings.

Infrastructure

None specific infrastructure is needed to develop this Project.

4.1.4. Science Made Simple (SMS)

Founded in 2002, '**science made simple**' is an award-winning social enterprise organisation based at Cardiff University, but working across the UK and internationally to achieve a three-part mission:

- to inspire the next generation of scientists and engineers
- to engage a wider public with STEM as part of popular culture
- to be a STEM translation service between researchers and the public

The enterprise was founded and is led by Wendy Sadler (FRSA) who was awarded the EU Descartes Laureate award in 2006 for Innovative action in science communication using performance. SMS reaches around 70,000 people a year with a range of inspirational STEM presentations for a wide range of age groups and audiences and have reached over half a million people since they began. They currently employ 13 staff and are have regional offices in three areas of the UK. The company specialise in developing and delivering interactive and engaging shows that connect audiences with research and give context for science and engineering topics. They have worked in over 26 countries to date including an extensive tour of South-East Europe with an innovative, non-verbal science theatre performance called 'visualise - the beauty of science'. They work with a number of academic and industrial partners and have built up a specialism for engaging audience with engineering and physical sciences in particular.

In addition to their performance work, they have built up a substantial range of training experiences for academics and science communicators ranging from one-day presenting courses to specialist master-classes and week long summer schools. They are currently jointly responsible for the

Outreach and Public Engagement training for organisations such as The Institute of Physics, The Royal Academy of Engineering and the Engineering and Physical Sciences Research Council (EPSRC) Doctoral Training Centre at Bath University. They reach around 150 adults each year with training experiences in science communication or outreach and have delivered professional training programmes in Sweden, Malta, Greece, Canada and South Africa amongst others.

Curriculum Vitae

Wendy Sadler has been working professionally as a science communicator and public engagement specialist since 1994. Her scientific background is in Physics and Music (BSc – Cardiff University) and she has since completed an MSc in Science with the Open University with a dissertation on the impact of science shows as a form of engagement. She is a fellow of the ERA foundation and the RSA (Royal Society of Arts) and is the author of 19 published books on science for children. She has been a judge for FameLab International and has been involved in training researchers in communication and presentation skills since 2001. She is a member of the EPSRC Peer Review College on issues of Public Engagement and Science in Society and holds a Gold Medal (Grade 8) distinction qualification for public speaking (LAMDA).

James Piercy has a degree in chemistry and MSc in science communication. He has been involved in writing, producing and delivering; science performances, workshops and dialogue events for wide ranging audiences since 1995. He has been awarded the LAMDA gold medal in public speaking and is Chair of the British Interactive Group (BIG) – the UK network for science communicators.

Before joining science made simple James was Director of Inspire Discovery Centre, a small hands-on science centre in Norwich, where he developed the outreach and educational programmes.

James is a senior trainer for science made simple and has extensive experience delivering training on behalf of Edinburgh Science Festival, FameLab, Abu Dhabi science festival, Research Councils UK (RCUK) and the Royal Society.

David Price is a science communicator with a specialism in Science Busking (Street performance using science and maths demonstrations) He has been an invited judge in Malaysia for the international science busking competition, and in 2013 he was awarded the ‘Learning outside the Classroom’ award for innovation for training school students to use busking techniques in the classroom. In 2010 David was awarded the Manchester Science Festival Josh award for outstanding innovation in science communication, for his work in developing and popularizing science busking techniques.

David is a LAMDA trained public speaker to gold level with distinction. He regularly trains diverse groups in both science communication and science busking techniques. Recently he undertook a month long tour of Norway on behalf of the Association of Norwegian Science Centre’s in order to foster science busking there.

List of publications

- Piercy, J and Roberts, E. (2013) – "How not to present science" – published in proceedings of British Science Association Science Communication Conference e-book. http://www.britishscienceassociation.org/science-communication-conference/reporting-2013-conference
- Sadler, W.J. (2012) – "Why do golf balls have dimples?" (Accent Press) and 19 other published science titles for primary school children
- Physics Education (2008) – 'Physics and Performance'
- ASTC Dimensions (2007) – "Evaluating the short and long-term impact of an interactive science show"
- Sadler, W.J. ((2004) – "Evaluating the short and long-term impact of an interactive science show" (unpublished MSc dissertation, Open University – received a distinction)

List of projects

- Co-Investigator/Partner for EPSRC Engineering Stage Award scheme (2007) – "Engineering for Life: From Cradle to Grave" with Cardiff University. Taking Medical engineering shows to schools across the UK and working with researchers to develop engaging content. (£212,500 awarded)
- Co-applicant STFC Science and Society Awards (2007) – "Gravity: Beyond the Apple" Working with researchers on gravitational waves to develop school shows (£13,245 awarded)
- Principal applicant STFC (2008) – "Herschel and the mysteries of the cold universe" Working with research astronomers on the Herschel telescope project for a performance in schools across the UK (£14,658 awarded)
- Delivery partner – Engineering UK (2011 – present) – "Tomorrow's Engineers". Working in partnership with various companies (Rolls Royce, Airbus, Jaguar Land Rover etc) to develop and deliver a touring show about engineering. The show has been taken to over 200 schools and we continue to deliver the show across the UK. (£150,000 awarded so far)
- Lead delivery partner with EPSRC and Welsh Government National Science Academy Grant – "Whose maths is it anyway?" – Developing two new Maths performances highlighting the context of Maths in a range of career and everyday life settings and touring the performances to schools around Wales. (£124,000 awarded so far)

Infrastructure

None specific infrastructure is needed to develop this Project.

4.1.5. UoW

The **University of Warwick** ranks 7th overall in the UK according to the latest Research Assessment Exercise, and 3rd within the 'Top 50 under 50' QS world rankings. Warwick has an annual income of over €500m with approximately 22,000 students (over 8,000 from overseas) and 5000 staff. The University is internationally acclaimed and has also been singled out, time and again, by academics, politicians, and industrialists as a model both of academic excellence and of entrepreneurial ethos. In 2012/13 Warwick's annual research income exceeded €150 m of which 15% was derived from EU awards. The University of Warwick is currently co-ordinating 47 FP7 projects and is a partner in a further 34 FP7 projects, and its total income from FP7 is in excess of €60m. Warwick also successfully led numerous projects under FP5 and FP6 and has significant experience of managing a wide variety of international awards, from individual fellowships to large multi-partner projects.. The University of Warwick therefore has a very successful track record of managing and participating in large international projects.

Curriculum Vitae

Dr Eric Jensen, Associate Professor, Department of Sociology will lead on employing ICT tools to evaluate the impacts of performance-based science engagement events. Jensen is a widely published researcher in the field of public engagement, and is an expert in public engagement (including mediated public engagement), media sociology and impact evaluation methodology. His main research interest is the interface between forms of expert knowledge and broader publics. He is founder and director of the Master of Science programme in Science, Media & Public Policy at the University of Warwick. His research in this domain has included studies of the impacts of science events, museums, galleries, universities, zoos, research groups and festivals at engaging publics with particular ideas. He has also researched the production and delivery of activities designed to engage publics with expert knowledge and ideas, as well as the role of online resources in enhancing public engagement practice. Recent projects include 'Public Engagement with Research Online' (funded by JISC), the Qualia project developing an evaluation and feedback app for the arts and culture sector (funded by the Digital R & D Fund for the Arts: Nesta, Arts & Humanities Research Council and the Arts Council), a 'rapid evidence assessment' funded by Defra, an upcoming project on 'The role of technology in evaluating the non-economic impacts of arts and culture' (funded by the Arts & Humanities Research Council) and Wellcome Trust-funded seminar series on impact evaluation in public engagement. In terms of theory, Eric has linked these research interests to a new model of social change, developed in his recently published book: *Culture & Social Change: Transforming Society through the Power of Ideas* (Information Age). Eric has a forthcoming research book on science in the public sphere (2014, Ashgate), two books under contract with Cambridge University Press set for publication in 2014 (*From Conservation Education to Public Engagement* and *Making the Most of Public Engagement Events and Festivals*) and a forthcoming research methods textbook for SAGE entitled *Doing Real Research*. Eric has a PhD in Sociology from the University of Cambridge.

Dr Mireille Mazard is a postdoctoral research fellow in the Department of Sociology, University of Warwick. Mazard has a PhD from the University of Cambridge. She has over five years of experience designing, planning and executing social research projects, leading to research publications and conference presentations. She will be taking the lead in delivering the empirical research to be conducted in WP4. She has extensive experience in survey design, academic report writing and dissemination.

To supplement the existing expertise within the University of Warwick, there will be relatively small contributions from other academic experts acting as consultants employed by Warwick.

Prof. Mike Phillips and Christopher Hunt (i-DAT, University of Plymouth) will bring their expertise and technical experience to bear on developing the technology to be used for WP4, including an automated social media analysis tool (using a combination of machine learning and rules), smartphone app and user interface for science engagement practitioners.

Professor Mike Phillips' (i-DAT, University of Plymouth**)** experience includes ICT projects for Arts Council England, NESTA, EPSRC, AHRC/B, ESF, EU Marie Curie ITN, EU Culture Programme and commercial partners ranging from Architects (Woods Bagot, Feilden Clegg Bradley Studios) to publishers (AA, Dorling Kindersley. Phillips is the Director of i-DAT, an Arts Council National Portfolio Organisation with a specific remit for digital support for the cultural sector. i-DAT is sponsored by IBM Smarter Planet and collaborates on beta testing and software development with digital companies. Phillips is a member of the TSB Internet of Things SIG and the AHRC Internet of Things Advisory Board. He brings a wealth of experience and expertise at the intersection of art and digital technology.

Christopher Hunt is a research assistant and developer at i-DAT and is currently studying for a Masters of Research (MRes) in Digital Art and Technology at Plymouth University. His research is currently focused on the use of machine learning, big data and the internet of things in technology and exploring potential applications for public engagement organisations. Chris graduated with a BSc (Hons) in Digital Art and Technology in 2012, and was also awarded the IBM Smarter Planet award for his work on i-DAT and Beaford Art's Confluence Project, which connected schools and artists with wireless environmental sensors. Currently acting as a lead software developer for the Qualia project, he has also worked on a variety of i-DAT's projects and collaborations.

List of publications

- Jensen, E. & Buckley, N. (2014). 'Why people attend science festivals: Interests, motivations and self-reported benefits of public engagement with research'. *Public Understanding of Science*. (Journal ranked 2nd in History & Philosophy of Science, 5th in Communication; Impact factor: 1.838)
- Dawson, E. and **Jensen, E.** (2011). Towards a 'contextual turn' in visitor research: Evaluating visitor segmentation and identity-related motivations. *Visitor Studies, 14*(2): 127-140.

- B. Wagoner**, E. Jensen** and J. Oldmeadow (Eds.), *Culture and Social Change: Transforming society through the power of ideas*. (2012, Information Age Publishers).
- Jensen, E. & Buckley, N. (*under contract*, for delivery in June 2014). *Making the Most of Public Engagement Events and Festivals: Research, Principles and Practice* (Cambridge University Press)
- Jensen, E. and Phillips, M. (invited by book series editors; planned for delivery in September 2015). *Mediating Creativity: Technology in Public Engagement with Art and Culture* (Palgrave, book series on 'Creativity and Culture').

List of projects

- Principal Investigator (Aug. 2014 - Aug. 2015), 'Using Social Media to Identify and Leverage Engagement (SMILE) with Arts and Culture'. *Arts and Humanities Research Council: Digital Amplification fund*. (£79,971 awarded).
- Principal Investigator (2014), 'The Role of Technology in Evaluating Cultural Value'. *Arts and Humanities Research Council: Cultural Value Fund*. (£39,968 awarded).
- Principal Investigator (2013), 'Qualia: Automated impact evaluation', funded by *Digital R & D Fund for the Arts*, National Endowment for Science, Technology and the Arts / Arts and Humanities Research Council / Arts Council (£125,000 awarded). Qualia.org.uk.
- Co-Principal Investigator (2013), 'Household food security: A review of Food Aid', funded by UK Government Department for Environment, Food and Rural Affairs (Defra). (£43,140 awarded)
- Principal Investigator (2012), 'Public Engagement with Research Online: Embedding impact analysis good practice through integrated web-based linguistic and quantitative analysis solutions'. Part of theme on 'Embedding impact analysis in research using BCE practitioners – 2nd Round', funded by the Joint Information and Skills Committee, UK. (£29,978 awarded)

Infrastructure

None specific infrastructure is needed to develop this Project.

4.1.6. AJA

The **Atelier des Jours à Venir** is a French non profit cooperative company, composed of young researchers and teachers who conceive their role as scientists, educators, and citizens as a coherent whole. It develops and performs teaching for university students in university research curricula, aiming at fostering sound responsible practices within the research community. By addressing the implicit usages and values that coexist with rational investigation, it aims at empowering university

students to become active, creative and responsible members of the research community, contributing to a fruitful dialogue with society.

More specifically, the Atelier des Jours à Venir currently delivers trainings on integrity & responsibility, scientific literacy, and strengthening societal outreach of research for PhD students in Paris universities (Paris Descartes & Diderot) and Zürich university & ETH. The Atelier des Jours à Venir also delivers this trainings in the form of summer schools open to students from all places in Europe.

In addition, the Atelier des Jours à Venir creates and supports projects of scientific culture with a strong social commitment : conveying the research and the values of scientific communities, can empower citizens, in particular in socially deprived contexts, such as French suburbs, Egypt, ex-Yougoslavia where AJA members have been taking action. AJA also takes action to spread tools for citizen participation in research, from creating questions to gathering & analyzing data.

Curriculum Vitae

As a researcher, **Livio Riboli-Sasco** holds a PhD at the crossroads between philosophy and biology, theoretical biology and ecology-evolution. He continues to explore different approaches of the concepts of biological information and biological individuals, within the theoretical context of extended heredity. He also teaches "scientific humanities" at Sciences Po Paris and Reims : an introduction to the norms, values, practices of the research community for students who will not become researchers yet may have important political responsibilies. After having founded Paris-Montagne association, which uses scientific culture as a tool for social inclusion and empowerment, he became a social entrepreneur. He is now co-director of Atelier des Jours à Venir and works as a trainer, facilitator and designer of new activities.

Claire Ribrault holds a PhD in neurosciences (Paris 6 university, 2010), and an interdisciplinary master degree with a major in chemistry. In parallel of her research work, she was involved in the development of innovative teaching approaches (such as project-based learning, critical reading methods…). Together with a few colleagues, she also developed initiatives aiming to promote scientific integrity and responsible research practices. She also participated to Paris-Montagne association, which aims to share the research practice with youth from deprived suburbs of Paris. In 2012, with a few colleagues, she co-founds the cooperative company Atelier des Jours à Venir in order to pursue these diverse actions of education and share the research practice with citizens.

List of projects

- Trainings for PhD students in Paris Descartes university, AgroParisTech, Paris Diderot university and Zürich ETH & university since 2012, specifically on integrity & responsibilty and scientific literacy.
- Nouveaux Commanditaires sciences : 4 ongoing participatory research projects, in France, Spain and Portugal, funded by Fondation de France, 50 000€, 2012 – 2014

List of publications

- L Riboli-Sasco & L Perié, Science festival open doors, Science, 332 (6037), 1503-1503, 2011
- T Flutre, T Julou, L Riboli-Sasco, C Ribrault, Pilot scheme for misconduct database, 478 (7367), 37-37, Nature 2011
- L Perié, L Riboli-Sasco, C Ribrault, E Zlotek-Zlotkiewicz, Kid's questions transcend conflicts, Science, 345 (6198), 740-740, 2014
- L Perie, L Riboli-Sasco, C Ribrault, Straight into conflict zones, scientific research empowers the minds, Journal of Science Communicatin 13 (2), 2014

4.1.7. LAC

Les Atomes Crochus is an interdisciplinary association created in 2002 at the prestigious École normale supérieure in Paris. Ever since its very creation, more than ten years ago, Les Atomes Crochus' identity is closely linked to the development of both the practice of science clowns and the theory behind.

Combining arts, science and pedagogy, the association has rapidly grown into a real laboratory for innovations in scientific culture and science communication.

Science clowns, scientific tales, experimental conferences, debate workshops, photography exhibitions, creative writing contests… Its activities in the fields of experimental sciences and sustainable development are for all ages and all levels of knowledge. *Les Atomes Crochus* are active in France and abroad, in schools, universities, multimedia libraries, cultural and scientific centers, science events…

The association aims high: it wishes to share and pass on its passion for knowledge, to place science back into culture, to develop young people's appetite for learning, to participate in the clarification of values, to keep alive the pleasure of discovery and the will to understand the world… In order to achieve these goals, it draws on the research and reflections of his members and of the Traces group (www.groupe-traces.eu), also active at EU level, in experimental as well as human sciences (cognitive sciences, education sciences, history, sociology and philosophy of sciences…).

Curriculum Vitae

Dr. Richard-Emmanuel Eastes (M) is the President of Les Atomes Crochus. Former director of Paris science center Espace des sciences Pierre-Gilles de Gennes, he is now the rector of teacher training institution *Haute Ecole Pédagogique* of the Berne, Jura and Neuchâtel regions of Switzerland. Learning processes, the notion/concept of understanding in science are parts of his research subjects. "Agregé" professor in chemistry, he is a corresponding member for the national

board of the Commission Chimie et Société (Fondation de la Maison de la Chimie - Paris). He also founded several innovative and well established science communication associations. (www.richard-emmanuel.eastes.eu)

Malo de la Tullaye (M) is a comedian and a stage director who has been working with Les Atomes Crochus for several years. In particular, he co-created its science clown show Wanda Wonderfull, which toured in France and all over the world. He initially trained as an actor at the Patrick Baty workshop and the Ecole Claude Mathieu and has since developed his skills through various workshops in specific techniques such as clown (notably with Hervé Langlois and Marcella Obregon), baroque theatre View Point (with Ann Bogart) and Suzuki. In parallel to his activity as a comedian on stage & for television, he stages plays and facilitates theatre and clown workshops.

Céline Martineau (F) is a project manager at Les Atomes Crochus. She develops, follows and implements science communication projects, with a special focus on how they can contribute to build or tighten social interactions. The « Tell me about your technologies » intergenerational project is one of them. It aims at fostering exchanges between generations through the transmission of knowledge around everyday objects. After her diploma as an engineer at Agro Sup Dijon, she volunteered in a Slovenia culture center and created Mapamundi, an association that directs documentaries on solidarity initiatives. She then became a project coordinator at Les Petits Débrouillards Normandie before heading to Unis-Cité Ile de France, where she was in charge of the training of volunteers.

Fabien Descamps (M) is a science explainer at Les Atomes Crochus. Owner of a licence degree in chemistry as well as science communication and environmental education, he first started off at the French association of astronomy before joining Les Atomes Crochus's permanent team in 2009, where he designs and facilitates playful pedagogical activities of all sorts. Running short or all year long workshops with groups of all ages is part of his daily work and he regularly collaborates with Les Atomes Crochus's team of stage artists. A master of experiments, is is also trained to the techniques of discussion games used as a tool to tackle societal aspects of science, that are especially powerful for groups of teenagers and adults. His activities involve training adults and young people alike to the art of science communication.

List of projects

- Les Atomes Crochus initiated two festivals coupled with training sessions and reflection symposiums on science clowns (2012) www.science-clowns.fr and spectacular science ({Electrons libres} 2014 http://www.espgg.org/Electrons-Libres-Festival-de).
- The association has conducted for several years workshops linking science and regular theatre over the course of a school year with groups of selected primary school children with special needs. They resulted in a performance by the young people at the end of the school year, in front of other students and of their family.
- Last summer, in the framework of an "open school" project, fifteen students from secondary schools participated to a workshop lasting a whole week with the aim of providing a basic

training of children to science communication so that they could present some experiments in front of a wider audience during the public event "Fontenay-sous-Soleil". Similar workshops have been conducted by our explainer in other cities.

- 3 shows for young people were created by young people with the help of Les Atomes Crochus: *La lumière enchantée* (2005), *La pollution c'est pas du bidon (2006), La Bouffe, c'est ouf (2007)*
- In partnership with association Paris Montagne, Les Atomes Crochus, implemented in the framework of the FP7 "2 WAYS" project the "Recreating life?" workshops, looking through popular culture at the technical and ethical aspects linked to the last developments of synthetic biology.

List of publications

- Richard-Emmanuel Eastes and Francine Pellaud, "The Child, the Clown and the Scientist", in *Current Challenges in Basic Science Education*, Unesco, Paris, 2011.
- Collectif, *La Science en culture, le détour par l'art, Pratiques de médiation scientifique*, Les Atomes Crochus, Paris, 2011.
- Bérénice Collet, Richard-Emmanuel Eastes et Mélodie Faury, « La mise en scène du "Système périodique" de Primo Levi », XXXth International science education meetings (JIES) proceedings, Chamonix, 2009.
- Mélodie Faury, Hélène Monfeuillard, Claire Truffinet, « Scènes de la vie scientifique… les pratiques de recherche vues par le théâtre », XXXth International science education meetings (JIES) proceedings, Chamonix, 2009.
- André Giordan and Francine Pellaud, *Redefining science teaching with a view to citizenship education*, Council of Europe, 1999.

Infrastructure

Since 2011, Les Atomes Crochus has a special agreement with science center Espace des sciences Pierre-Gilles de Gennes of the Ecole supérieure de physique et de chimie industrielles of the City of Paris (www.espgg.org). Its facilities can be used to present the shows and welcome the groups for the workshops, naturally embedding the project into informal science. Situated within a higher education school, this science center frequently interacts with its PhD students and researchers, who can constitute both participants and an audience for the PERFORM! workshops.

4.1.8. UNESCO

In 1945, **UNESCO** was created in order to respond to the firm belief of nations, forged by two world wars in less than a generation, that political and economic agreements are not enough to build

a lasting peace. Peace must be established on the basis of humanity's moral and intellectual solidarity.

UNESCO strives to build networks among nations that enable this kind of solidarity, by: 1) Mobilizing for education: so that every child, boy or girl, has access to quality education as a fundamental human right and as a prerequisite for human development. 2) Building intercultural understanding: through protection of heritage and support for cultural diversity. UNESCO created the idea of World Heritage to protect sites of outstanding universal value. 3) Pursuing scientific cooperation: such as early warning systems for tsunamis or trans-boundary water management agreements, to strengthen ties between nations and societies. 4) Protecting freedom of expression: an essential condition for democracy, development and human dignity.

Today, UNESCO's message has never been more important. We must create holistic policies that are capable of addressing the social, environmental and economic dimensions of sustainable development. This new thinking on sustainable development reaffirms the founding principles of the Organization and enhances its role:

In a globalized world with interconnected societies, intercultural dialogue is vital if we are to live together while acknowledging our diversity.

In an uncertain world, the future of nations depends not only on their economic capital or natural resources, but on their collective ability to understand and anticipate changes in the environment - through education, scientific research and the sharing of knowledge.

In an unstable world - marked by fledgling democratic movements, the emergence of new economic powers and societies weakened by multiple stress factors – the educational, scientific and cultural fabric of societies – along with respect for fundamental rights - guarantees their resilience and stability.

In a connected world - with the emergence of the creative economy and knowledge societies, along with the dominance of the Internet, the full participation of everyone in the new global public space is a prerequisite for peace and development.

UNESCO is known as the "intellectual" agency of the United Nations. At a time when the world is looking for new ways to build peace and sustainable development, people must rely on the power of intelligence to innovate, expand their horizons and sustain the hope of a new humanism. UNESCO exists to bring this creative intelligence to life; for it is in the minds of men and women that the defences of peace and the conditions for sustainable development must be built.

Curriculum Vitae

Casimiri Vizzini. Graduated in Medicine and Surgery at the University of Palermo, he also attended a master in International Cooperation at the "Institut de Relations Internationales et Stratégiques" (IRIS) in Paris. He currently works as Expert, responsible for the Human Variome Project (HVP), in the division of Science Policy and Capacity-Building at the United Nations Educational, Scientific and Cultural Organization (UNESCO) Headquarters in Paris.

Marga Gual Soler, Ph.D will be the Coordinator of Policy Relations. Marga has 7 years of experience in academic research, science communication and education, international development, international science cooperation and science policy. Bilingual in English and Spanish, her professional, study and travel experiences span 25+ countries in 4 continents. Dr. Gual Soler holds a Bachelor's and Master's degree in Biology at the University of Barcelona in Spain (2008) and a PhD in Molecular Cell Biology from the University of Queensland in Australia (2013). After her PhD, Dr. Gual Soler went on to pursue a training fellowship in science and technology for development at the United Nations Headquarters in New York City, where she also volunteered as Global Community Coordinator of Science House Foundation, a non-profit international science education organization. Stemming from her work at the United Nations, she founded the Latin American Network of Young Scientists (WAYS LAC), in partnership with UNESCO, and was selected to represent Spain at the 2014 Global Competitiveness Leadership Program of Georgetown University in Washington DC. Most recently, Dr. Gual Soler obtained a highly competitive Research Fellowship in Science Diplomacy at the American Association for the Advancement of Science (AAAS) to study science cooperation between Spain, the European Union and Latin America. In addition, Dr. Gual Soler is an entrepreneur and has founded a number of initiatives in science communication, policy and diplomacy, listed below.

List of publications

- Active Learning in Optics and Photonics (ALOP): ALOP trains educators with hopes that it will enable them to develop professionally and pass on their skills to their students. Since 2004, ALOP workshops have included over 600 teachers from 45 developing countries in Africa, Asia and Latin America (with the most being from 15 countries in Africa). There have also been several follow-up workshops to train trainers, by giving them the opportunity to work as assistant facilitators
- Microsciences: Early a decade after the Global Microscience Programme was launched by UNESCO and the International Union for Pure and Applied Chemistry (IUPAC) in 1996, the microscience approach has been introduced into 72 countries, many of them in Africa.
- World Library of Sciences: A joint initiative of Nature Education and UNESCO, the World Library of Science will be a comprehensive free library of science education resources in the life and physical sciences. Scheduled to launch in early 2014, the World Library will ensure that all science students with access to computers or mobile phones have a universally high quality of educational information to draw on in their coursework.
- UNESCO and the Sony Ericsson WTA Tour Partnership: In November 2006, UNESCO and the Sony Ericsson WTA Tour, the world's leading global sport for women, established a landmark global partnership, in order to further gender equality and promote women's leadership in all spheres of society.
- Better Life, Better Future: UNESCO launched the Global Partnership for Girls' and Women's Education, known as 'Better Life, Better Future', in 2011 guided by the

conviction that educating girls and women can break the cycle of poverty and foster greater social justice. The Partnership seeks to increase learning opportunities for adolescent girls and women and to find solutions to some of the biggest challenges and obstacles to their education.

List of projects

- The future of mobile learning: implications for policy makers and planners. Publ: 2013; 44p.
- Gender equality, heritage and creativity. Published in 2014 by the United Nations Educational, Scientific and Cultural Organization 7, place de Fontenoy, 75352 Paris 07 SP, France. ISBN 978-92-3-100050-8.
- Gender equality, HIV and Education. Published in 2012 by the United Nations Educational, Scientific and Cultural Organization 7, place de Fontenoy, 75352 Paris 07 SP, France, 2012. ISBN 978_92_3_001119_2
- World Atlas of gender equality in education: Published in 2012 by the United Nations Educational, Scientific and Cultural Organization 7, place de Fontenoy, 75352 Paris 07 SP, France, Maps © Collins Bartholomew Ltd 2012. ISBN 978-92-3-104232-4.

Infrastructure

None specific infrastructure is needed to develop this Project.

4.1.9. EUSEA

The **European Science Events Association** (EUSEA), established in 2001, gathers about 100 science events organizers from more than 30 European countries. Members include science festivals, science centres and museums, universities, research funding organizations, and NGO's – all with an expressed interest in the development of two-ways communication, informal learning opportunities, public engagement, and formats for an enhanced understanding and dialogue.

In one way or another, virtually all members and their science communication events encompass and emphasize the objective of reaching out to young people, and promoting science education and science careers.

The association's tasks include – as a membership based organization – to arrange annual conferences, initiate projects and other forums for exchange of experience, best practice and knowledge in the field of science communication events. This would also include the proactive development of new formats, dissemination of experience and data through articles and conference participation, and presenting evidence based material to policy-makers. The recently finished

PLACES project (2010-2014) with 65 participating "Cities of Scientific Culture" is one such example.

This gives EUSEA and its members an excellent position and structure for this particular call about "Making Science Education and Careers Attractive for Young People" in two ways:

First: the members of EUSEA together have access to a large repository of events, experiences, projects, activities and other sources of knowledge and information on the subject. This ranges from ambitious, long-term projects over several years, such as the "Science Municipalities" for teachers and pupils in Denmark, to individual activities and events for teachers or students as parts of school programmes in festivals, science days or science centres.

Second: the association provides as such an already existing infrastructure for dissemination and organization for both material and immaterial resources. This structure includes 100 members' networks all over Europe, many of which are closely related to and connected to different levels of the education systems, research institutions, industry, NGO's and policy-makers. In this capacity, EUSEA members are excellent forums for discussions as well as experiments and projects for cross-cutting interaction.

Primarily, the PERFORM project participation will be handled by the EUSEA board of directors and, on a more daily basis, the director Jan Riise.

Curriculum Vitae

Jan Riise is a senior science communication advisor, with almost 30 years in the interface between schools, research, industry, public and policy-makers. In 1997, Jan Riise was one of the co-founders of the International Science Festival in Gothenburg, Sweden, now one of Europe's leading science communication events. He was the president of EUSEA in 2008-2010, and assumed the position as director in 2013.

Jan Riise's background includes a BA in Urban and Regional Planning from the University of Gothenburg. He has been working with three interdisciplinary research centres: Gothenburg Center for Public Learning and Understanding of Science, GC-PLUS, with prof Ilan Chabay; the Centre for Culture and Health, with prof Gunnar Bjursell; and most recently with Mistra Urban Futures, with prof David Simon, at Chalmers University of Technology.

Jan Riise is a member of the scientific committees of the global PCST Network for Public Communication of Science and Technology, and of "Science & You" at Université de Lorraine, France. Jan Riise is a frequent speaker at international conferences such as AAAS Annual Meetings in the US, at Beijing Science Festival in China, and at the ESOF conferences held in Europe every 2 years. In addition to this, Jan Riise is an experienced project manager for science communication events, including conferences and other activities. He has organised EUSEA annual meetings and the 2008 international conference for the PCST Network in Sweden and Denmark.

Furthermore, in EUSEA there are several experts on science communication within the education system, and it would be reasonable to involve and engage one or two of them in a project like PERFORM.

EUSEA is represented in the project proposal by Leonardo Alfonsi, president of EUSEA, and CEO of Psiquadro scarl in Perugia, Italy, and by Jan Riise, executive director of EUSEA. Jan Riise, as executive director, will be the senior representative of EUSEA in the project and responsible for the work package. Other persons may be contracted for parts of the work package, as employees or contracted project officers for EUSEA.

List of projects

- 2WAYS (2008-2010) EUSEA and some 30 members exploring how to develop presentations (including games, theatre, multi-media, etc) regarding "new" science, i.e. ongoing research, in collaboration with the research teams. Within the same projects, 30 science parliaments for young people were organized. The parliament project was repeated in similar, but not identical, ways in 2014, with a final parliament at ESOF2014 in Copenhagen
- PLACES (2010-2014, coordinated by Ecsite). The PLACES project was basically about improving the communication between policy-makers, public, and science in cities and regions, thus strengthening the capacities for development and collaboration. More than 150 cities and regions took part in the final conference, organized by EUSEA, and some 60 Third parties developed and carried out local "Pilot Activities" for the development of "Cities of Scientific Culture".

Infrastructure

None specific infrastructure is needed to develop this Project.

4.2. Third parties involved in the project (including use of third party resources)

Does the participant plan to subcontract certain tasks (please note that core tasks of the project should not be sub-contracted)	**Y**/N
If yes, please describe and justify the tasks to be subcontracted **TBVT** Audio-visual material post production and web content assessment to generate attractive PERSEIA (Task 2.1 and Task 2.2) and for dissemination of the project in the local language (Tasks 2.1, 2.2 and 2.3) will be subcontracted to multiplatform content developer expert studios (like Reina Mono) (4000€). In task 2.1, the involvement of experts in dramatized content generation to implement PERSEIA in chosen schools will be subcontracted, as well as the involvement of teachers and researchers to develop performance-based science education methods with students, in specific occasions (5000€). In Task 2.3, science	

education methods will be scaled-out to informal learning and teaching environments, meanly science museums. The participation of science museum facilitators in the workshops will be economically incentivized by punctual payments (1000€).

UoW

An external supplier will be selected to provide the technology and related expertise to effectively conduct social media analysis in Task 4.2. This *Technology Subcontracting* (total €24,995) includes: Set up Indico developer API (€150), Server and PHP Licensing (€500), Developer Time (€8.550), Web services subscription (€400), Project management, requirements gathering and solution definition (€3.600), Travel for consultation with researchers (€950), Meetings and consultations (€2.500), Equipment (€500), User Testing (2.000), Natural Language Processing Expert Consultancy (€2.345), Advanced Statistical Analysis Expert Consultancy, including preparing syntax for automated analysis (€3.500). It is anticipated that the Technology Subcontracting will be allocated through multiple smaller subcontracts to gain the highest quality input for the lowest price.

Does the participant envisage that part of its work is performed by linked third parties[54]	Y/**N**
If yes, please describe the third party, the link of the participant to the third party, and describe and justify the foreseen tasks to be performed by the third party	
Does the participant envisage the use of contributions in kind provided by third parties (Articles 11 and 12 of the General Model Grant Agreement)	Y/**N**
If yes, please describe the third party and their contributions	

[54] A third party that is an affiliated entity or has a legal link to a participant implying a collaboration not limited to the action. (Article 14 of the Model Grant Agreement).

5. Ethics and Security

5.1 Ethics

According to the ethical issue Table included in the administrative proposal form, the PERFORM project involves ethical issues relating to the involvement of human participants and the collection of personal data during the research. Specific ethical issues will also arise from the automated analysis of social media and from the dissemination (on-line and off-line) of underage students' images participating in PERFORM activities as detailed below.

Participation will be strictly voluntary, and subjects will have the right to choose not to participate or to withdraw at any point. The research will be developed under the supervision of the UAB's Ethics Commission for Human and Animal experimentation (CEEAH) and comply with relevant EU legislations (i.e., the European Charter of Fundamentals Rights). The CEEAH is an independent organism appointed by the Council of the UAB and its members do not have any conflict of interests when making their deliberations.

1) Informed consent procedures

PERFORM will work directly with secondary school students who are underage and thus considered persons will be unable to give informed consent to participate in the research as well as vulnerable individuals. In order to meet the EU and national legal and ethical requirements (i.e., EU Charter of Fundamental Rights) of involving underage students in education research and dissemination we will follow several steps to obtain informed consent:

- First, each case study coordinator will send an invitation letter to the selected secondary school principals. This letter will include an **information sheet** and the **consent form**. The information sheet will include information on PERFORM project's objective, main activities, benefits and risks, and the PERFORM team commitment of ensuring data confidentiality according to the national legislation of personal data protection. The consent form will include authorisation for the school participation in PERFORM activities as well as for unrestricted permission for images, videos, and recordings of the school and participating underage students to be used in print, video, digital and internet media for PERFORM dissemination purposes. The principal will sign the consent form giving his or her free, prior and informed consent and ethical approval of the activities to be performed at the school and will send the form to case study coordinators. Secondary schools should be able to confine their participation to those activities which they deem to be responsible for the students in their care.
- Second, each case study coordinator, in the presence of the teacher, will then provide an **information sheet** explaining the project and the **consent form** to each student in order to obtain their parental consent for their participation in PERFORM activities. The consent form will include authorisation for the child/ren participation in PERFORM activities and unrestricted permission for images, videos, and recordings of the participating underage students to be used in print, video, digital and internet media for PERFORM dissemination purposes. Students will be required to return a signed parental consent form, based on an

approved template modified according to the corresponding national legal and ethical requirements of each case study country. In addition, students will be informed that they can decline to participate in the project or withdraw from it at any moment without need of further explanations event if their parents signed the consent form.

- Third, each case study coordinator will provide selected teachers and early career researchers with an information sheet and the consent form in order to obtain their consent to participate in PERFORM activities. Teachers and researchers will be asked for returning the signed consent form to participate in the project.

The signed consent forms obtained from the participants will be kept by case-study coordinators till three years after the end of the project.

No data, other than a count for an anonymous person unwilling to participate, will be kept from people who do not want to take part of the study. We will keep record of the number of people deciding not to participate to assess whether this type of attrition bias research results.

We are attaching a draft of the written consent form that will be used. The form will be adapted and translated to each study site.

2) Data collection, storage, protection, retention and destruction

At the beginning of the project, the UAB project manager will be responsible for elaborating a Data Management Plan (Deliverable, Month 6) and sharing these guidelines with all partners to accomplish the legal and ethical requirements regarding data collection, storage, protection and publication.

Data will be collected by researchers during project activities on paper and video, and then storage in electronic databases only accessible to team members. PERFORM partners will provide the UAB project manager with resultant databases that will be stored in the Digital Document Repository of the UAB, protected with standard security means. To protect the confidentiality of subjects, we will keep the raw data (in papers and videos) in a locked file cabinet at UAB, accessible only to the PI and team members. We will not share the critical data related to confidentiality with anybody outside of the research team. Research data will be retained for a period of 5 years after the project ends, but the consortium will take measures to enable for third parties to access and disseminate research data at the end of the project according to the Data Management Plan.

The partners in this project will be aware of the need to **protect** the **personal data** collected during the project, to **guarantee the ethics in publishing** results and in general the **rights of individuals**. All the aspects set out below are included in the guidelines published on the website http://cordis.europa.eu/fp7/ethics_en.html. The research complies with the **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. All data collected by the PERFORM consortium from students, teachers and researchers will be systematically anonymised (i.e., removing the names of participants and schools and any other identifier that would allow a user to identify a subject by the data) in order to prevent possible identification of individuals' opinions or ideas.

There is a unique range of issues associated with **social media data**. While conventional ethical practices cannot easily be applied to Twitter and other social media sites, PERFORM will not be gathering private personal information, including personal sensitive data, or using secretive methods to gain access to social media data. PERFORM will be accessing content that audience members choose to make public, either on the performance groups' webpages or on Twitter. In sum, PERFORM is not trying to get information that people are keeping, or trying to keep, private. The consortium will treat any personal information connected to the audience response data with a high level of consideration, courtesy, privacy and ethical practice. For example, PERFORM will anonymise social media quotations included in the research.

Any publication resulting from participation in the study will not identify subjects by name.

If any unforeseen ethical issues arise during the project, the coordinator will consult with the ethics specialists at the UAB Ethics Commission.

3) Collection and/or processing of personal sensitive data.

PERFORM will not collect and/or process personal sensitive data (i.e., ethnicity, political opinions, religion, health, finances, etc) since obtaining such type of data will not contribute to achieve PERFORM aims and objectives. In the specific case of social media analysis, as we explained before, PERFORM will not gather private personal information, including personal sensitive data, or using secretive methods to gain access to social media data.

4) Copies of opinion or confirmation by the competent Institutional Data Protection Officer

We will submit the notification by the Catalan Data Protection Agency to the REA by the start date of the project and before starting the relevant research activities of the PERFORM project (November 2015). This agency is the correspondent competent authority of the institution coordinating the research project (UAB) that will centralize data collection and storage.

5) Involvement of vulnerable groups

PERFORM will work directly with secondary school students who are underage and thus considered vulnerable individuals. The three PERFORM partners coordinating case-studies in Spain, France and UK (TVBT, LAC and SMS, respectively) will use purposive sampling to select four secondary schools as participants along the entire project from a list of schools with which they have previously collaborated or can potentially collaborate based on their previous expertise. The selection criteria will be only based on ensuring socio-economic variability for comparison purposes (i.e., two secondary schools from low socio-economic contexts and two secondary schools from medium socio-economic contexts). Additionally, the three case-study coordinators will invite another 10 to 16 different secondary schools (from low and medium socio-economic contexts) in each case study to participate in part of the project activities. These secondary schools will be randomly selected from the UNESCO's network of associated schools (ASPnet) in each country to ensure their interest in the project. We will have the desired number of schools plus replacements. In each school, the participation of groups of students will be collectively agreed by the school principal, teachers and the correspondent PERFORM case-study coordinator according to the research purposes. PERFORM will also work with teachers from selected schools and early career

researchers from PERFORM universities and organizations and associated research centres whose participation will be voluntary. Case-study coordinators will invite selected schools' teachers to participate and their involvement will be agreed by the school. Case-study coordinators will invite 2-4 early career researchers whose research is related to the topics selected by the students in each school to participate in the project. In both cases, we will use informed consent. The involvement of secondary schools and teachers in the project will be encouraged through non-economic and/or economic incentives (education material for schools, punctual payments and/or official recognition for teachers by the corresponding public administration). In the case of UK and France, teachers participating in the project will receive a small economic compensation that has been established by local partners according to their previous experience and projects. In the case of Spain, teachers will receive a symbolic compensation, such as an official recognition of the time they invest in these activities since teachers' economic compensations are not as usual in Spain as in the other countries. Researchers in the three countries where the case studies will be implemented will also receive a minor monetary compensation for the time they spend participating in the project activities.

6) Informed consent of children/adults unable to give informed consent

Please see details on how PERFORM will obtain children's informed consent in "1) Informed consent".

7) Participation of children/adults unable to give informed consent

As explained above, PERFORM will work directly with secondary school students who are underage and thus considered people unable to give informed consent to participate in the research as well as vulnerable individuals. We will not work with adults unable to give informed consent.

PERFORM: Participatory Engagement with Scientific and Technological Research through Performance

Information for participants

[name of the person collecting information] is working at *[name of the institution]*. S/he is about to conduct a new research project with the help of some other researchers from the PERFORM consortium.

Through the PERFORM project we want to explore and assess the effectiveness of innovative science education methods based on performing arts in stimulating secondary school students' engagement in Science, Technology, Environment and Mathematics subjects (STEM). For that purpose, we will conduct a participatory action research involving secondary school students, teachers and early career researchers in an active inquiry process on relevant scientific topics through the use of performing arts at schools. The PERFORM project will systematically monitor and assess the educational process and activities in a broad time framework, including assessment pre, during and post performance. The assessment will provide an analysis of the potential impacts on girls' and boys' cognitive and behavioural changes towards science and related careers.

This research is funded by the European Commission through a Grant to Isabel Ruiz-Mallén (UAB). *[name of the person collecting information]* is working at *[name of the institution]*, an organization that is part of the consortium for this project. This study is being conducted in a total of twelve secondary schools in France, Spain, and UK by using a case study approach. A total of approximately 600 students will be constantly involved in the research as stakeholders whereas 6,000 students from other 30 to 48 schools will be punctually engaged (i.e., attending the resultant performances).

To collect the information we need, participants will be actively involved in a set of participatory workshops in which students will engage in collectively reflection and dialogue about STEM and relevant scientific topics with early career researchers, systematically assessed by researchers. The participatory workshops will be recorded in video and audio formats so that researchers can compare interventions over time and track processes within. Besides, students will follow a written survey and, eventually, they will be interviewed on their perceptions, attitudes and interest in STEM, as well as teachers and early career scientists involved. The assessment will also include a social media analysis of participants' interventions related to the study in social platforms. The study will not be gathering private personal information or using secretive methods to gain access to social media data. PERFORM will be accessing content that audience members choose to make public, either on the performance groups' webpages or on Twitter. The data generated in this study will be used for basic science research; it will not be used with any commercial purpose.

All the procedures chosen for this study are widely used by social researchers and entail no risks to the participants. The Principal Investigator and other participants in the team have considerable experience with these methods, having used them successfully in numerous social science research projects over the last 10 years. The PERFORM consortium will treat any personal information and data with the highest level of consideration, courtesy, privacy and ethical practice according to the corresponding national legal and ethical requirements.

The benefits of participating in the project include getting involved in a unique learning experience in which students will have the opportunity to approach scientific issues with artists and scientific researchers, get training in an artistic discipline and strengthen transversal competences and values that they will need for STEM careers and jobs. There are no individual payments for

participating in the study, other than punctual compensations for teachers and early career scientists who will actively participate in the project. Additionally we plan to make donations to the schools (i.e., school materials).

Informed consent

We are asking for your participation, because *[a) for school principals: your school has been selected to participate; b) for parents: your daughter/son studies in one of the participating secondary schools]* in the PERFORM project. *[For school principals: Your school; b) for parents: Your daughter/son]* does not have to participate if you do not wish so, and you are welcome to decline to proceed at any time. Participation in this study is strictly voluntary. There are no penalties to people who decide not to participate, or who started to participate and later decided to withdraw.

Data from this project will only available to the project's key personnel. Data are completely confidential. All names will be replaced by coded numbers. Any publications, videos and reports to the funding agency will not identify participants by name. Data will not be used for any purpose other than scientific publications. Data will not be sold, given, or pass in any other way to third parties that might use it with any other purpose than research. Even in this case, we will ensure that third parties cannot identify the person who provided data.

Information will be used to inform scientists and the public in general about the effects of the use of innovative science education methods based on performing arts in fostering young peoples' motivations and engagement with STEM. At the end of the research, we will carry out a workshop at each school to inform about our preliminary research results and ask for feedback. We will invite participants, parents, members of local institutions, and research institutions. A group of students who will be actively engaged in the participatory research will also execute the generated performance-based science education activities in their own school, becoming agents to engage and to motivate other youngsters to approach STEM. We will prepare publications in local languages to disseminate the lessons learned.

Isabel Ruiz-Mallén is the responsible for the project, and you might ask her any questions about the project or the procedures. She will be visiting the schools at least once a year. You can also write to her at Institut de Ciència i Tecnologia Ambientals, Universitat Autònoma de Barcelona, 08193 Cerdanyola del Vallès, Spain. You may also call at 00 34 93 5868633 or send an e-mail to isabel.ruiz@uab.cat. If you have questions about your legal rights as a research subject, you may contact: nuria.perez@uab.cat. To contact her, you can ask one of the project members at the school who will have complete instructions and will do it on your behalf at no cost to you.

You will be given a copy of this form to keep. By agreeing to participate and giving consent, you are not waiving any of your legal rights, claims, or remedies. You will keep the right to withdraw from the project at any moment, without explanations or further consequences. You may sign the form yourself or ask for someone else to sign on your behalf. If you prefer we can record your consent to participate by tape recording it.

I have read (or someone has read to me) the information in the consent form. I have had an opportunity to ask questions and all my questions have been answered to my satisfaction. By signing this consent form, I willingly agree to participate in this study.

Name of participant (type or print):_____.

. _____ . . _____ .

Signature of subject or legal representative Date (must be signed prior to entry)

I have explained the research to the participant and answered all of his/her questions. I believe that he/she understands the information described in this consent form and freely consents to participate.

Name of Investigator/research team member (type or print):_____

. _____ . . _____ .

Signature of investigator/research team member Date

5.2 Security[55]

Please indicate if your project will involve:

- activities or results raising security issues: NO.
- 'EU-classified information' as background or results: NO.

[55] Article 37.1 of Model Grant Agreement. *Before disclosing results of activities raising security issues to a third party (including affiliated entities), a beneficiary must inform the coordinator — which must request written approval from the Commission/Agency;* Article 37. *Activities related to 'classified deliverables' must comply with the 'security requirements' until they are declassified; Action tasks related to classified deliverables may not be subcontracted without prior explicit written approval from the Commission/Agency.; The beneficiaries must inform the coordinator — which must immediately inform the Commission/Agency — of any changes in the security context and — if necessary —request for Annex 1 to be amended (see Article 55)*

ESTIMATED BUDGET FOR THE ACTION (page 1 of 2)

	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.2 Natural persons under direct contract A.3 Seconded persons [A.6 Personnel for providing access to research infrastructure]		A.4 SME owners without salary A.5 Beneficiaries that are natural persons without salary				D.1 Travel D.2 Equipment D.3 Other goods and services D.4 Costs of large research infrastructure						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 EU funding
Form of costs[6]	Actual	Unit[7]	Unit[8]		Actual	Actual	Actual	Flat-rate[9] 25%							
	(a)	Total (b)	No hours	Total (c)	(d)	(e)	(f)	(g)=0,25x ((a)+(b)+ (c)+(f) +[(h1)+(h2)]- (m))	(i)= (a)+(b)+(c)+ (d)+(e)+(f)+ (g)+(h1)+(h2)+(h3)	(j)	(k)	(l)	(m)	Yes/No	
1. UAB	260988.00	0.00			0.00	0.00	61000.00	80497.00	402485.00	100.00	402485.00	402485.00	0.00	No	
2. TBVT	189000.00	0.00			10000.00	0.00	40500.00	57375.00	296875.00	100.00	296875.00	296875.00	0.00	No	
3. UoB	192468.00	0.00			0.00	0.00	45840.00	59577.00	297885.00	100.00	297885.00	297885.00	0.00	No	
4. SMS	72200.00	0.00	0.00	0.00	0.00	0.00	9800.00	20500.00	102500.00	100.00	102500.00	102500.00	0.00	No	
5. UoW	152950.00	0.00			24995.00	0.00	28560.00	45377.50	251882.50	100.00	251882.50	251882.50	0.00	No	
6. AJA	40700.00	0.00			0.00	0.00	3700.00	11100.00	55500.00	100.00	55500.00	55500.00	0.00	No	
7. LAC	96000.00	0.00	0.00	0.00	0.00	0.00	8100.00	26025.00	130125.00	100.00	130125.00	130125.00	0.00	No	
8. UNESCO	110000.00	0.00			0.00	0.00	114000.00	56000.00	280000.00	100.00	280000.00	280000.00	0.00	No	
9. EUSEA	126000.00	0.00			0.00	0.00	18000.00	36000.00	180000.00	100.00	180000.00	180000.00	0.00	No	
Total consortium	1240306.00	0.00		0.00	34995.00	0.00	329500.00	392451.50	1997252.50		1997252.50	1997252.50	0.00		0.00

ESTIMATED BUDGET FOR THE ACTION (page 2 of 2)

(1) See Article 6 for the eligibility conditions
(2) The indirect costs covered by the operating grant (received under any EU or Euratom funding programme; see Article 6.5.(b)) are ineligible under the GA. Therefore, a beneficiary 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 (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 Commission/Agency decided to grant for the action) (see Article 5.1).
(4) The 'maximum grant amount' is the maximum grant amount decided by the Commission/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 beneficiary's usual accounting practice
(8) See Annex 2a 'Additional information on the estimated budget' for the details (costs per hour (hourly rate)).
(9) 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
(10) See Annex 2a 'Additional information on the estimated budget' for the details (units, costs per unit).
(11) See Annex 2a 'Additional information on the estimated budget' for the details (units, costs per unit, estimated number of units, etc)
(12) Only specific unit costs that do not include indirect costs
(13) See Article 9 for beneficiaries not receiving EU funding
(14) Only for linked third parties that receive EU funding

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

THE BIG VAN THEORY (TBVT) ES5, 52567, established in CARRER FRANCESC MACIA 21 PLANTA 2 PUERTA 4, CASTELLBISBAL 08755, Spain, ESG66125071 ('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 665826 (‘the Agreement’)

between UNIVERSITAT AUTONOMA DE BARCELONA **and** *the Research Executive Agency (REA) ('the Agency'), under the power delegated by the European Commission ('the Commission'),*

for the action entitled ‘Participatory Engagement with Scientific and Technological Research through Performance (PERFORM)’.

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 the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

UNIVERSITY OF BRISTOL (UoB) GB22, RC000648, established in TYNDALL AVENUE SENATE HOUSE, BRISTOL BS8 1TH, United Kingdom, GB991261800 ('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 665826 ('the Agreement')

between UNIVERSITAT AUTONOMA DE BARCELONA **and** *the Research Executive Agency (REA) ('the Agency'), under the power delegated by the European Commission ('the Commission'),*

for the action entitled 'Participatory Engagement with Scientific and Technological Research through Performance (PERFORM)'.

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 the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

SCIENCE MADE SIMPLE LIMITED (SMS) LTD, 05187306, established in THE PARADE 14-17 SCHOOL OF PHYSICS & ASTRONOMY, CARDIFF CF24 3AA, United Kingdom, GB862387008 ('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 665826 (‘the Agreement’)

between UNIVERSITAT AUTONOMA DE BARCELONA **and** *the Research Executive Agency (REA) ('the Agency'), under the power delegated by the European Commission ('the Commission'),*

for the action entitled ‘Participatory Engagement with Scientific and Technological Research through Performance (PERFORM)’.

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 the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

THE UNIVERSITY OF WARWICK (UoW), N/A, established in Kirby Corner Road - University House, COVENTRY CV4 8UW, United Kingdom, GB545270058 ('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 665826 (‘the Agreement’)

between UNIVERSITAT AUTONOMA DE BARCELONA **and** *the Research Executive Agency (REA) ('the Agency'), under the power delegated by the European Commission ('the Commission'),*

for the action entitled ‘Participatory Engagement with Scientific and Technological Research through Performance (PERFORM)’.

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 the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

L'ATELIER DES JOURS A VENIR (AJA) SARL, 539029124, established in 132 RUE D'ASSAS, PARIS 75006, France, FR93539029124 ('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 665826 (‘the Agreement’)

between UNIVERSITAT AUTONOMA DE BARCELONA **and** *the Research Executive Agency (REA) ('the Agency'), under the power delegated by the European Commission ('the Commission'),*

for the action entitled ‘Participatory Engagement with Scientific and Technological Research through Performance (PERFORM)’.

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 the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

LES ATOMES CROCHUS (LAC) FR20, 442783999, established in 45 RUE D ULM, PARIS 75005, France, FR59442783999 ('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 665826 ('the Agreement')

between UNIVERSITAT AUTONOMA DE BARCELONA **and** *the Research Executive Agency (REA) ('the Agency'), under the power delegated by the European Commission ('the Commission'),*

for the action entitled 'Participatory Engagement with Scientific and Technological Research through Performance (PERFORM)'.

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 the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION - UNESCO (UNESCO), N/A , established in PLACE DE FONTENOY 7, PARIS 75352, France, N/A ('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 665826 (‘the Agreement’)

between UNIVERSITAT AUTONOMA DE BARCELONA **and** *the Research Executive Agency (REA) ('the Agency'), under the power delegated by the European Commission ('the Commission'),*

for the action entitled ‘Participatory Engagement with Scientific and Technological Research through Performance (PERFORM)’.

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 the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ANNEX 3

ACCESSION FORM FOR BENEFICIARIES

EUSEA - EUROPAISCHE GESELLSCHAFT FUR WISSENSCHAFTSVERANSTALTUNGEN (EUSEA) AT1, 171798373, established in ANTON BAUMGARTNERSTRASSE 44/C2/3/2, WIEN 1230, Austria ('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 665826 (‘the Agreement’)

between UNIVERSITAT AUTONOMA DE BARCELONA **and** *the Research Executive Agency (REA) ('the Agency'), under the power delegated by the European Commission ('the Commission'),*

for the action entitled ‘Participatory Engagement with Scientific and Technological Research through Performance (PERFORM)’.

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 the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

ⓘ print format A4 landscape

MODEL ANNEX 4 FOR H2020 GENERAL MGA — MULTI

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 :
	A.1 Employees (or equivalent) A.2 Natural persons under direct contract A.3 Seconded persons *[A.6 Personnel for providing access to research infrastructure]*		A.4 SME owners without salary A.5 Beneficiaries that are natural persons without salary				D.1 Travel D.2 Equipment D.3 Other goods and services	*[D.4 Costs of large research infrastructure]*		*[F.1 Costs of …]*			Receipts of the action, to be reported in the last reporting period, according to Article 5.3.3				Costs of in-kind contributions not used on premises
Form of costs[4]	Actual	Unit	Unit		Actual	Actual	Actual	Actual	Flat-rate[5] 25%	Unit	Unit						
	a	Total b	No hours	Total c	d	*[e]*	f	*[g]*	h=0,25 x (a+b+ c+f+*[g]* + *[i1]*[6] +*[i2]*[6] - o)	No units	Total *[i1]*	Total *[i2]*	j = a+b+c+d+*[e]* +f +*[g]* +h+*[i1]* +*[i2]*	k	l	m	n	o
[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 any indirect costs.

[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 have to be less (e.g. if you and the other beneficiaries are above budget, if the 90% limit (see Article 21) is reached, etc).

[4] See Article 5 for the form 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 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').]*

[1] By which costs under the Agreement are declared (see template 'Model Financial Statements' in Annex 4 to the Grant Agreement).

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;
- 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 with[2]:

- 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*] [*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] [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*]*.

[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.

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]	[legal name of the *[Beneficiary][Linked Third Party]*]
[name & function of authorised representative]	[name & function of authorised representative]
[dd Month yyyy]	[dd Month yyyy]
Signature of the Auditor	Signature of the *[Beneficiary][Linked Third Party]*

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 'direct personnel costs declared as 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.

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.

[3] By which the Beneficiary declares costs under the Agreement (see template 'Model Financial Statement' in Annex 4 to the Agreement).

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 interest[4] 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**		

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	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. (*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)* The Auditor sampled _____ people out of the total of _____ people.		
A.1	**PERSONNEL COSTS** <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> To confirm standard factual findings 1-5 listed in the next column, the Auditor reviewed following information/documents provided by the Beneficiary: ○ 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;	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.	
		2) Personnel costs were recorded in the Beneficiary's accounts/payroll system.	
		3) Costs were adequately supported and reconciled with the accounts and payroll	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	○ 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. 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.	records.	
		4) Personnel costs did not contain any ineligible elements.	
		5) There were no discrepancies between the personnel costs charged to the action and the costs recalculated by the Auditor.	
	Further procedures if 'additional remuneration' is paid To confirm standard factual findings 6-9 listed in the next column, the Auditor: ○ reviewed relevant documents provided by the Beneficiary (legal form, legal/statutory obligations, the Beneficiary's usual policy on additional remuneration, criteria used for its calculation…); ○ 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, etc.) 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').	6) The Beneficiary paying "additional remuneration" was a non-profit legal entity.	
		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.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	IF ANY PART OF THE REMUNERATION PAID TO THE EMPLOYEE IS NOT MANDATORY ACCORDING TO THE NATIONAL LAW OR THE EMPLOYMENT CONTRACT ("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: *(A) IF THE PERSON WORKS FULL TIME AND EXCLUSIVELY ON THE ACTION DURING THE FULL YEAR: UP TO EUR 8 000/YEAR;* *(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 IN ACCORDANCE TO ARTICLE 6.2.A.1.*	8) The criteria used to calculate the additional remuneration were objective and generally applied by the Beneficiary regardless of the source of funding used.	
		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).	
	Additional procedures in case "unit costs calculated by the Beneficiary in accordance with its usual cost accounting practices" is applied: 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 factual findings 10-13 listed in the next column:	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 used in all H2020 actions.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	○ 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.	11) The employees were charged under the correct category.	
		12) Total personnel costs used in calculating the unit costs were consistent with the expenses recorded in the statutory accounts.	
		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.	
	<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> To confirm standard factual findings 14-18 listed in the next column the Auditor reviewed following information/documents provided by the Beneficiary: ○ the contracts, especially the cost, contract duration, work description, place of work, ownership of the results and reporting obligations to the Beneficiary;	14) The natural persons reported to the Beneficiary (worked under the Beneficiary's instructions).	
		15) They worked on the Beneficiary's premises (unless otherwise agreed with the Beneficiary).	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	○ 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.).	16) The results of work carried out belong to the Beneficiary.	
		17) Their costs were not significantly different from those for staff who performed similar tasks under an employment contract with the Beneficiary.	
		18) The costs were supported by audit evidence and registered in the accounts.	
	<u>For personnel seconded by a third party and included in the sample (not subcontractors)</u> To confirm standard factual findings 19-22 listed in the next column, the Auditor reviewed following information/documents provided by the Beneficiary: ○ 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;	19) Seconded personnel reported to the Beneficiary and worked on the Beneficiary's premises (unless otherwise agreed with the Beneficiary).	
		20) The results of work carried out belong to the Beneficiary.	
		If personnel is seconded against payment: 21) The costs declared were supported with documentation and recorded in the	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	○ 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; ○ any other document that supports the costs declared (e.g. invoices, etc.).	Beneficiary's accounts. The third party did not include any profit.	
		If personnel is seconded free of charge: 22) 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.	
A.2	**PRODUCTIVE HOURS** To confirm standard factual findings 23-28 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: ○ 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.	23) The Beneficiary applied method [*choose one option and delete the others*] [**A**: 1720 hours] [**B**: the 'total number of hours worked'] [**C**: 'annual productive hours' used correspond to usual accounting practices]	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	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. 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 hours can be supported by records, such as national legislation, labour agreements, and contracts. *BENEFICIARY'S PRODUCTIVE HOURS' FOR PERSONS WORKING FULL TIME SHALL BE ONE OF THE FOLLOWING METHODS:* ***A.*** *1720 ANNUAL PRODUCTIVE HOURS (PRO-RATA FOR PERSONS NOT WORKING FULL-TIME)* ***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).*	24) Productive hours were calculated annually.	
		25) For employees not working full-time the full-time equivalent (FTE) ratio was correctly applied.	
		If the Beneficiary applied method B. 26) The calculation of the number of 'annual workable hours', overtime and absences was verifiable based on the documents provided by the Beneficiary.	
		If the Beneficiary applied method C. 27) The calculation of the number of 'standard annual workable hours' was verifiable based on the documents provided by the Beneficiary.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	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 'TOTAL ANNUAL PRODUCTIVE HOURS' IN THE NEXT COLUMN). THIS NUMBER MUST BE AT LEAST 90% OF THE STANDARD ANNUAL WORKABLE HOURS. *'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.*	28) 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	**HOURLY PERSONNEL RATES** <u>I) For unit costs calculated in accordance to the Beneficiary's usual cost accounting practice (unit costs):</u> 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. If the Beneficiary does not have a "Certificate on Methodology" (CoMUC) approved by the	29) The Beneficiary applied [*choose one option and delete the other*]: [Option I: "Unit costs (hourly rates) were calculated in accordance with the Beneficiary's usual cost accounting practices"] [Option II: Individual hourly rates were applied]	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	Commission, or if the methodology approved was not applied, then the Auditor: o reviewed the documentation provided by the Beneficiary, including manuals and internal guidelines that explain how to calculate hourly rates; o 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. II) For individual hourly rates: The Auditor: o reviewed the documentation provided by the Beneficiary, including manuals and internal guidelines that explain how to calculate hourly rates; o recalculated the hourly rates of staff included in the sample following the results of the procedures carried out in A.1 and A.2. *"UNIT COSTS CALCULATED BY THE BENEFICIARY IN ACCORDANCE WITH ITS USUAL COST ACCOUNTING PRACTICES":* *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.* *HOURLY RATE FOR INDIVIDUAL ACTUAL PERSONAL COSTS:* *IT IS CALCULATED BY DIVIDING THE TOTAL AMOUNT OF PERSONNEL COSTS OF AN EMPLOYEE VERIFIED IN LINE WITH*	*For option I concerning unit costs and if the Beneficiary applies the methodology approved by the Commission (CoMUC):* 30) 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 activities irrespective of the source of funding.	
		For option I concerning unit costs and if the Beneficiary applies a methodology not approved by the Commission: 31) The unit costs re-calculated by the Auditor were the same as the rates applied by the Beneficiary.	
		For option II concerning individual hourly rates:	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	PROCEDURE A.1 BY THE NUMBER OF ANNUAL PRODUCTIVE HOURS VERIFIED IN LINE WITH PROCEDURE A.2.	32) The individual rates re-calculated by the Auditor were the same as the rates applied by the Beneficiary.	
A.4	**TIME RECORDING SYSTEM** 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: o description of the time recording system provided by the Beneficiary (registration, authorisation, processing in the HR-system); o its actual implementation; o time records were signed at least monthly by the employees (on paper or electronically) and authorised by the project manager or another manager; o the hours declared were worked within the project period; o 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) ;	33) All persons recorded their time dedicated to the action on a **daily/ weekly/ monthly** basis using a **paper/computer-based** system. (*delete the answers that are not applicable)*	
		34) Their time-records were authorised at least monthly by the project manager or other superior.	
		35) Hours declared were worked within the project period and were consistent with the presences/absences recorded in HR-records.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	○ the hours charged to the action matched those in the time recording system. *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).*	36) There were no discrepancies between the number of hours charged to the action and the number of hours recorded.	
	<u>If the persons are working exclusively for the action and without time records</u> 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.	37) The exclusive dedication is supported by a declaration signed by the Beneficiary's and by any other evidence gathered.	
B	**COSTS OF SUBCONTRACTING**		
B.1	**The Auditor obtained the detail/breakdown of subcontracting costs and sampled _____ cost items selected randomly** (*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*). To confirm standard factual findings 38-42 listed in the next column, the Auditor reviewed the	38) The use of claimed subcontracting costs was foreseen in Annex 1 and costs were declared in the Financial Statements under the subcontracting category.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	following for the items included in the sample: o the use of subcontractors was foreseen in Annex 1; o subcontracting costs were declared in the subcontracting category of the Financial Statement; o supporting documents on the selection and award procedure were followed; o 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). In particular, i. if the Beneficiary acted as a contracting authority within the meaning of Directive 2004/18/EC or of Directive 2004/17/EC, 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.. For the items included in the sample the Auditor also verified that: o the subcontracts were not awarded to other Beneficiaries in the consortium;	39) 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. *(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)*	
		40) The subcontracts were not awarded to other Beneficiaries of the consortium.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	○ there were signed agreements between the Beneficiary and the subcontractor; ○ there was evidence that the services were provided by subcontractor;	41) All subcontracts were supported by signed agreements between the Beneficiary and the subcontractor.	
		42) There was evidence that the services were provided by the subcontractors.	
C	**COSTS OF PROVIDING FINANCIAL SUPPORT TO THIRD PARTIES**		
C.1	**The Auditor obtained the detail/breakdown of the costs of providing financial support to third parties and sampled _____ cost items selected randomly** (*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*). The Auditor verified that the following minimum conditions were met: 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	43) All minimum conditions were met	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	respected.		

D	OTHER ACTUAL DIRECT COSTS		
D.1	**COSTS OF TRAVEL AND RELATED SUBSISTENCE ALLOWANCES** **The Auditor sampled _____ cost items selected randomly** (*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*). The Auditor inspected the sample and verified that: ○ 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.	44) Costs were incurred, approved and reimbursed in line with the Beneficiary's usual policy for travels.	
		45) There was a link between the trip and the action.	
		46) The supporting documents were consistent with each other regarding subject of the trip, dates, duration and reconciled with time records and accounting.	
		47) No ineligible costs or excessive or reckless expenditure was declared.	
D.2	**DEPRECIATION COSTS FOR EQUIPMENT, INFRASTRUCTURE OR OTHER ASSETS** **The Auditor sampled _____ cost items selected randomly** (*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*). For “equipment, infrastructure or other assets” [from now on called “asset(s)”] selected in the	48) Procurement rules, principles and guides were followed.	
		49) There was a link between the grant agreement and the asset charged to the action.	

	sample the Auditor verified that: ○ the assets were acquired in conformity with the Beneficiary's internal guidelines and procedures; ○ 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); 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). 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).	50) The asset charged to the action was traceable to the accounting records and the underlying documents. 51) 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. 52) The amount charged corresponded to the actual usage for the action. 53) No ineligible costs or excessive or reckless expenditure were declared.	
D.3	**COSTS OF OTHER GOODS AND SERVICES** **The Auditor sampled _____ cost items selected randomly** (*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*). For the purchase of goods, works or services included in the sample the Auditor verified that: ○ the contracts did not cover tasks described in Annex 1;	54) Contracts for works or services did not cover tasks described in Annex 1. 55) Costs were allocated to the correct action and the goods were not placed in the inventory of durable equipment.	

	○ 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). In addition, the Auditor verified that these goods and services were acquired in conformity with the Beneficiary's internal guidelines and procedures, in particular: ○ if Beneficiary acted as a contracting authority within the meaning of Directive 2004/18/EC or of Directive 2004/17/EC, 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. For the items included in the sample the Auditor also verified that: ○ 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); *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*	56) The costs were charged in line with the Beneficiary's accounting policy and were adequately supported. 57) No ineligible costs or excessive or reckless expenditure were declared. For internal invoices/charges only the cost element was charged, without any mark-ups. 58) 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. *(When different offers were not collected the Auditor explains the reasons provided by the Beneficiary under the*	

	AGREEMENT, CERTIFICATES ON THE FINANCIAL STATEMENTS IF THEY ARE REQUIRED BY THE AGREEMENT AND CERTIFICATES ON THE METHODOLOGY, TRANSLATIONS, REPRODUCTION.	*caption "Exceptions" of the Report. The Commission will analyse this information to evaluate whether these costs might be accepted as eligible)*	
D.4	**AGGREGATED CAPITALISED AND OPERATING COSTS OF RESEARCH INFRASTRUCTURE** 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. ***In the cases that a positive ex-ante assessment has been issued*** *(see the standard factual findings 59-60 on the next column)****,*** The Auditor ensured that the beneficiary has applied consistently the methodology that is explained and approved in the positive ex ante assessment; ***In the cases that a positive ex-ante assessment has NOT been issued*** *(see the standard factual findings 61 on the next column),* The Auditor verified that no costs of Large Research Infrastructure have been charged as direct costs in any costs category;	59) 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. 60) Any difference between the methodology applied and the one positively assessed was extensively described and adjusted accordingly. 61) The direct costs declared were free from any indirect costs items related to the Large Research Infrastructure.	

	In the cases that a draft ex-ante assessment report has been issued with recommendation for further changes *(see the standard factual findings 61 on the next column),* • 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.		
E	**USE OF EXCHANGE RATES**		
E.1	a) For Beneficiaries with accounts established in a currency other than euros **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** (*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)*: *COSTS INCURRED IN ANOTHER CURRENCY 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.* *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),*	62) 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.	

	DETERMINED OVER THE CORRESPONDING REPORTING PERIOD.		
	b) For Beneficiaries with accounts established in euros **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** (*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)*: *COSTS INCURRED IN ANOTHER CURRENCY SHALL BE CONVERTED INTO EURO BY APPLYING THE BENEFICIARY'S USUAL ACCOUNTING PRACTICES.*	63) The Beneficiary applied its usual accounting practices.	

[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

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 ('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 with[1]:

- 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 claimed 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] 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.

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]	[legal name of the [Beneficiary] [Linked Third Party]]
[name & title of authorised representative]	[name & title of authorised representative]
[dd Month yyyy]	[dd Month yyyy]
Signature of the Auditor Signature	Signature of the *[Beneficiary] [Linked Third Party]*

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]*.

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 Statement[2] 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

[2] Financial Statement in this context refers solely to Annex 4 of the Agreement by which the Beneficiary declares costs under the Agreement.

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. 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 interest[3] 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).

[3] 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;

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

- 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'.

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
A. Use of the Methodology I. The cost accounting practice described below has been in use since *[*dd Month yyyy*]*. II. The next planned alteration to the methodology used by the Beneficiary will be from [dd Month yyyy*]*.	**Procedure:** ✓ The Auditor checked these dates against the documentation the Beneficiary has provided. **Factual finding:** 1. The dates provided by the Beneficiary were consistent with the documentation.
B. Description of the Methodology III. The methodology to calculate unit costs is being used in a consistent manner and is reflected in the relevant procedures. *[Please describe the methodology your entity uses to calculate personnel costs, productive hours and hourly rates, present your description to the Auditor and annex it to this certificate]* *[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*	**Procedure:** ✓ The Auditor reviewed the description, the relevant manuals and/or internal guidance documents describing the methodology. **Factual finding:** 2. The brief description was consistent with the relevant manuals, internal guidance and/or other documentary evidence the Auditor has reviewed. 3. The methodology was generally applied by the Beneficiary as part of its usual costs accounting practices.

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
Factual Findings: - *…]*	
C. **Personnel costs** <u>General</u> 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; V. Employees are hired directly by the Beneficiary in accordance with national law, and work under its sole supervision and responsibility; 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); 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; VIII. Personnel costs are based on the payroll system and accounting system. IX. Any exceptional adjustments of actual personnel costs resulted from relevant budgeted or estimated elements and were based on objective and verifiable information. *[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].* 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	**Procedure:** *The Auditor draws a sample of employees to carry out the procedures indicated in this section C and the following sections D to F.* *[The Auditor has drawn a random sample of 10 full-time equivalents made up of employees assigned to the action(s). If fewer than 10 full-time equivalents are assigned to the action(s), the Auditor has selected a sample of 10 full-time equivalents consisting of all employees assigned to the action(s), complemented by other employees irrespective of their assignments.].* For this sample: ✓ 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: 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

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
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. XI. Personnel costs were not declared under another EU or Euratom grant (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 budget). <u>If additional remuneration as referred to in the grant agreement(s) is paid</u> XII. The Beneficiary is a non-profit legal entity; XIII. The additional remuneration is part of the beneficiary's usual remuneration practices and paid consistently whenever the relevant work or expertise is required; XIV. The criteria used to calculate the additional remuneration are objective and generally applied regardless of the source of funding; 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). *[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*	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. ✓ 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. **Factual finding:** 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

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
Factual Findings: - *…]*	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 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).
D. Productive hours XVI. The number of productive hours per full-time employee applied is *[delete as appropriate]*: A. 1720 productive hours per year for a person working full-time (corresponding pro-rata for persons not working full time). B. the total number of hours worked in the year by a person for the Beneficiary 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. <u>If method B is applied</u> 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). XVIII. 'Annual workable hours' are hours	**Procedure (same sample basis as for Section C: Personnel costs):** ✓ 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 and that it is reduced proportionately for employees not exclusively assigned to the action(s). ✓ 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.

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
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. XIX. The contract (applicable collective labour agreement or national working time legislation) do specify the working time enabling to calculate the annual workable hours. <u>If method C is applied</u> XX. The standard number of productive hours per year is that of a full-time equivalent; for employees not assigned exclusively to the action(s) this number is reduced proportionately. 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. XXII. Standard workable (working) hours are hours during which personnel are at the Beneficiary's disposal preforming 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. *[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:* - *…]*	**Factual finding:** <u>General</u> 12. The Beneficiary applied a number of productive hours consistent with method A, B or C detailed in the left-hand column. 13. The number of productive hours per year per full-time employee was accurate and was proportionately reduced for employees not working full-time or exclusively for the action. <u>If method B is applied</u> 14. The number of 'annual workable hours', overtime and absences was verifiable based on the documents provided by the Beneficiary and the calculation of the total number of hours worked was accurate. 15. The contract specified the working time enabling to calculate the annual workable hours. <u>If method C is applied</u> 16. The calculation of the number of productive hours per year corresponded to the usual costs accounting practice of the Beneficiary. 17. The calculation of the standard number of workable (working) hours per year was corroborated by the documents presented by the Beneficiary. 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.
E. Hourly rates The hourly rates are correct because: XXIII. Hourly rates are correctly calculated since they result from dividing annual personnel	**Procedure** ✓ 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

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
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. *[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:* - *…]*	personnel rate(s) are calculated. For 10 full-time equivalent employees selected at random (same sample basis as Section C: Personnel costs): ✓ 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. **Factual finding:** 19. No differences arose from the recalculation of the hourly rate for the employees included in the sample.
F. Time recording 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 *[delete as appropriate]* using a **paper/computer-based system** *[delete as appropriate]*; 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; 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; XXVII. Measures are in place to prevent staff from: 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	**Procedure** ✓ The Auditor reviewed the brief description, all relevant manuals and/or internal guidance describing the methodology used to record time. The Auditor reviewed the time records of the random sample of 10 full-time equivalents referred to under Section C: Personnel costs, and verified in particular: ✓ 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

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
iv. recording hours worked outside the action period. XXVIII. No working time was recorded outside the action period; XXIX. No more hours were claimed than the productive hours used to calculate the hourly personnel rates. *[Please provide a brief description of the time recording system in place together with the measures applied to ensure its reliability to the Auditor and annex it to the present certificate[4]].* *[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:* *- …]*	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 no time worked outside the action period was charged to the action. **Factual finding:** 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

[4] 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 it information flow up to its use for the preparation of the Financial Statements.

Please explain any discrepancies in the body of the Report.	
Statements to be made by Beneficiary	**Procedures to be carried out and Findings to be confirmed by the Auditor**
	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.

[official name of the** [Beneficiary] [Linked Third Party]**]	***[official name of the Auditor]***
[name and title of authorised representative]	***[name and title of authorised representative]***
[dd Month yyyy]	***[dd Month yyyy]***
<Signature of the** [Beneficiary] [Linked Third Party]**>	***<Signature** of the Auditor**>***

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