



# **International Cooperation in Horizon 2020**

## **EU and Australia**

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In addition to the topics mentioned herein the European Commission flagged the following calling topics (listed on page 8 in the [Roadmap for EU-Australia S&T cooperation](#)) as being particularly and thematically suitable for international STI cooperation with Australia.

## Excellent Science

<b>Horizon 2020 Pillar:</b>	Excellent Science
<b>Programme:</b>	European research infrastructures (including e-Infrastructures)
<b>Call Title:</b>	Integrating and opening research infrastructures of European interest
<b>Call Identifier:</b>	h2020-infraia-2018-2020
<b>Topic Title:</b>	Integrating Activities for Advanced Communities
<b>Topic Identifier:</b>	INFRAIA-01-2018-2019
<b>Type of Action:</b>	RIA Research and Innovation action
<b>Deadline(s):</b>	22-03-2018 (single-stage)

### Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/infraia-01-2018-2019.html>

**Specific Challenges:** European researchers need effective and convenient access to the best research infrastructures in order to conduct research for the advancement of knowledge and technology. The aim of this action is to bring together, integrate on European scale, and open up key national and regional research infrastructures to all European researchers, from both academia and industry, ensuring their optimal use and joint development.

**Scope:** 'Advanced Communities' are scientific communities whose research infrastructures show an advanced degree of coordination and networking at present, attained, in particular, through Integrating Activities awarded under FP7 or previous Horizon 2020 calls.

An Integrating Activity will mobilise a comprehensive consortium of several key research infrastructures in a given field as well as other stakeholders (e.g. public authorities, technological partners, research institutions) from different Member States, Associated Countries and other **third countries**<sup>[1]</sup> when appropriate, in particular when they offer complementary or more advanced services than those available in Europe.

Funding will be provided to support, in particular, the trans-national and virtual access provided to European researchers (and to researchers from **Third countries** under certain conditions<sup>[2]</sup>), the cooperation between research infrastructures, scientific communities, industry and other stakeholders, the improvement of the services the infrastructures provide, the harmonisation, optimisation and improvement of access procedures and

interfaces. Proposals should adopt the guidelines and principles of the European Charter for Access to Research Infrastructures.

To this extent, an Integrating Activity shall combine, in a closely co-ordinated manner:

- i. Networking activities, to foster a culture of co-operation between research infrastructures, scientific communities, industries and other stakeholders as appropriate, and to help develop a more efficient and attractive European Research Area;
- ii. Trans-national access or virtual access activities, to support scientific communities in their access to the identified key research infrastructures;
- iii. Joint research activities, to improve, in quality and/or quantity, the integrated services provided at European level by the infrastructures.

All three categories of activities are mandatory as synergistic effects are expected from these different components.

Access should be provided only to key research infrastructures of European interest, i.e., those infrastructures able to attract significant numbers of users from countries other than the country where they are located. Other national and regional infrastructures in Europe can be involved, in particular in the networking activities, for the exchange of best practices, without necessarily being beneficiaries in the proposal.

Proposals from advanced communities will have to clearly demonstrate the added value and the progress beyond current achievements in terms of integration and services, of a new grant. The strongest impact for advanced communities is expected typically to arise from focusing on innovation aspects and widening trans-national and virtual access provision, both in terms of wider and more advanced offer of scientific services, than in terms of number of users and domains served. Furthermore, in particular for communities supported in the past under three or more integrating activities, the creation of strategic roadmaps for future research infrastructure developments as well as the long-term sustainability of the integrated research infrastructure services provided at European level, need to be properly addressed. The latter requires the preparation of a sustainability plan beyond the grant lifecycle as well as, where appropriate, the involvement of funders.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), Integrating Activities should, whenever appropriate, pay due attention to any related international initiative (i.e. outside the EU) and foster the use and deployment of global standards.

Integrating Activities should also organise the efficient curation, preservation and provision of access to the data collected or produced under the project, defining a data management plan, even when they opt out of the extended Pilot on Open Research Data. Data management (including ethics and privacy issues), interoperability, as well as advanced data and computing services should be addressed where relevant. To this extent, proposals should build

upon the state of the art in ICT and e-infrastructures for data, computing and networking, and ensure connection to the European Open Science Cloud.

Integrating Activities should in particular contribute to fostering the potential for innovation, including social innovation, of research infrastructures by reinforcing the partnership with industry, through e.g. transfer of knowledge and other dissemination activities, activities to promote the use of research infrastructures by industrial researchers, involvement of industrial associations in consortia or in advisory bodies.

Integrating Activities are expected to duly take into account all relevant ESFRI and other world-class research infrastructures to exploit synergies, to reflect on sustainability and to ensure complementarity and coherence with the existing European Infrastructures landscape.

Proposals should include clear indicators allowing the assessment of the progress towards the general and specific objectives, other than the access provision.

As the scope of an integrating activity is to ensure coordination and integration between all the key European infrastructures in a given field and to avoid duplication of effort, advanced communities are expected to submit one proposal per area.

Further conditions and requirements that applicants should fulfil when drafting a proposal are given in part D of the section “Specific features for Research Infrastructures”. Compliance with these provisions will be taken into account during evaluation.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 10 million would allow this topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

On the basis of a multiannual plan drafted taking into account the assessment and the timing of previous grants as well as strategic priorities and needs, in term of research infrastructures services, emerging from other parts of Horizon 2020, this work programme invites proposals addressing the following areas listed under the different domains. A balanced coverage of the various domains, in line with the distribution of areas per domain, is expected as outcome of this topic.

2018 deadline

#### Biological and Medical Sciences

- **Microbial Resource Centres.**  
This activity aims at integrating the key Microbial Resource Centres and opening them up to European researchers for biotechnology research and development. Emphasis should be on widening the user base, enlarging and strengthening the offered services, sharing resources at global level, fostering the innovation role of such

infrastructures and ensuring long term sustainability to their integration.

- Facilities for high throughput DNA sequencing.  
This activity aims at integrating the key research infrastructures in Europe as well as leading-edge research infrastructures located in **third countries**, to open them up to European researchers and offer services beyond the state-of-art which is already ensured by commercial providers. Adequate consideration should be taken of the produced data and its availability for research.
- Centres for replacement, reduction and refinement (3 Rs) of non-human primate testing.  
This activity aims at integrating the key non-human primate centres in Europe promoting 3 Rs, i.e. replacement, reduction, and refinement. The proposal will contribute to the objective of 3Rs, reinforcing the implementation of ethical and good practices at European level, and the protection of animals used in scientific experiments<sup>[3]</sup>. The proposal should also develop the necessary collaborations outside Europe.
- High throughput facilities for proteome analysis.  
This activity aims at integrating the key high throughput facilities in Europe for proteome analysis, based on state-of-the-art proteomics techniques and tools for data handling and analysis, including structural proteomics and structural bioinformatics. Emphasis should be on widening the user base, enlarging and strengthening the offered services, fostering the innovation role of such infrastructures and ensuring long term sustainability to their integration.

### Energy

- Research Infrastructures for solar energy:  
concentrating solar power. This activity should bring together the key European research infrastructures in solar concentrating systems (solar concentrators and relating research infrastructures) for carrying out energy and materials research as well as research in other fields using the extreme temperature conditions in solar concentrators, e.g. thermal storage equipment and reuse of stored energy. This topic would support the European Strategic Energy Technology Plan (SET-Plan).
- Research Infrastructures for solar energy:  
photovoltaic. This activity aims at integrating and opening the key research infrastructures in Europe for all aspects of photovoltaic research: buildings, transport, new materials, grid connection, efficiency, etc. This topic would support the European Strategic Energy Technology Plan (SET-Plan).

## Environmental and Earth Sciences<sup>[4]</sup>

- Research infrastructures for forest ecosystem and resources research. This activity aims at further integrating and facilitating broad access to forest research facilities, methodologies and data on genetic and species diversity to enable environmental and biological research including biological effects of air pollution, mitigation and adaptation to climate change, and development of forest management approaches. Emphasis will be on widening the user base and ensuring long term sustainability to the service integration.
- Natural history collections. This activity aims at integrating and improving access to key European Natural History collections and to their related instrumentation facilities. Emphasis should be on improving accessibility to collections to a wide range of scientists, on developing innovative research services to answer the needs of a broader scientific community of users from climate change to human health and food security, and on ensuring long term sustainability of the integrated services.
- Research aircrafts for environmental and geo-science research. This activity aims at integrating key research aircrafts and improving their availability to European researchers from larger multidisciplinary scientific communities. It should develop a long-term strategy towards sustained integrated services and innovative synergies with complementary observing systems and models to study atmospheric processes and the Earth's surface.
- Research vessels. This activity aims at further providing, integrating and improving access to the key European research vessels and associated major equipment. It should include innovative initiatives to ensure a more efficient and coordinated operation of European fleets, to develop synergies with complementary observing systems and infrastructures and to set-up sustained integrated services to the user communities.
- Research infrastructures for Earth's climate system modelling. This activity aims at further integrating and opening the research infrastructures (e.g. data repositories, models) used by the climate modelling community in Europe, promoting the ongoing development of a common distributed modelling infrastructure. Emphasis should be on widening the user base, expanding the interdisciplinary research fields addressed, enlarging and strengthening the offered services, and ensuring long term sustainability to the service integration.
- Sites and experimental platforms of anthropogenic impacts for ecosystem functioning and biodiversity research. This activity aims at bringing together highly instrumented experimental, analytical and modelling facilities, across all major

European ecosystem types and all major pressures on them. It will optimise the collaborative use of these sites by a wider scientific community and develop efficient methods and techniques for rapid data sharing and processing at the European level.

#### Mathematics and ICT

- Visualisation facilities. This activity aims at further integrating and opening key virtual reality visualisation facilities, holographic image processing facilities and other computer graphics and animation facilities for advanced visualisation of scientific information and massive data, either resulting from academic research or being produced in collaboration with the industrial sector. Emphasis should be on widening the user base, enlarging and strengthening the offered services, and fostering the innovation role of such infrastructures.

#### Material Sciences, Analytical facilities and Engineering

- Electron Microscopies for advanced imaging, diffraction, spectroscopy and metrology of materials. This activity aims at further integrating and opening advanced electron microscopies for material research and technological development. Emphasis should be on widening the user base, strengthening and enlarging the offered services, stimulating new scientific activities, facilitating access, fostering the innovation role of such infrastructures and ensuring long term sustainability to their integration.
- High and low energy ion beam labs. This activity aims at further integrating and opening key ion beam facilities for material, biomedical and environmental research and technological development. Emphasis should be on widening the user base, enlarging and strengthening the offered services, fostering the innovation role of such infrastructures and ensuring long term sustainability to their integration.
- Infrastructures for Neutron Scattering and Muon Spectroscopy. This activity will provide and facilitate wider access to the key research infrastructures in Europe for Neutron scattering and Muon Spectroscopy. It should present a long-term sustainable perspective on the integration of these facilities and related resources.
- Facilities for research on materials under extreme temperature conditions. This activity aims at integrating research facilities in physics and materials science dealing with extreme low and high temperature conditions, e.g. nanoscience at microkelvin temperatures. Emphasis should be on widening the user base, enlarging the offered services, fostering the innovation role of such infrastructures and ensuring long term sustainability to their integration.

- Infrastructures for studying turbulence phenomena and applications. This activity aims at further integrating key facilities enabling the study of high turbulence phenomena in various areas of science and technology. Emphasis should be on combining modelling and experimental in situ testing, widening the user base, enlarging the offered services, fostering the innovation role of such infrastructures and ensuring long term sustainability to their integration.

#### Physical Sciences

- Research Infrastructures for hadron physics. This activity will provide and facilitate access to key research infrastructures in Europe for studying the properties of nuclear matter at extreme conditions, turning advances in hadron physics experimentation into new applications. It should present a long-term sustainable perspective on the integration of relevant facilities and related resources.
- Research Infrastructures for high resolution solar physics. This activity aims at further integrating and opening key research infrastructures in the field of high resolution solar physics. It should foster cooperation between theory and observations.

#### Social Sciences and Humanities

- Research infrastructures for the assessment of science, technology and innovation policies. This activity aims at further integrating and opening research data infrastructures in the field of science, technology and innovation (including social innovation). Emphasis should be on facilitating trans-national access and widening the user base, enlarging and strengthening the offered services, fostering the innovation role of such infrastructures and ensuring long term sustainability to their integration.
- Digital archives and resources for research on European history. This activity aims at further integrating and opening key data collections and services in Europe for European History. Emphasis should be on widening the user base, enlarging and strengthening the offered services, e.g. by covering further historical periods, and ensuring long term sustainability to their integration.
- Archaeological data infrastructures for research. This activity aims at further integrating and opening key archaeological data infrastructures to facilitate research in all fields of archaeology (from prehistory to contemporary society). Emphasis should be on widening the user base, enlarging and strengthening the offered services, including fields such as paleo-anthropology, bioarchaeology and environmental archaeology, sharing resources at global level, and ensuring long term sustainability to their integration.

**Expected Impact:**

- Researchers will have wider, simplified, and more efficient access to the best research infrastructures they require to conduct their research, irrespective of location. They benefit from an increased focus on user needs.
- New or more advanced research infrastructure services, enabling leading-edge or multidisciplinary research, are made available to a wider user community.
- Operators of related infrastructures develop synergies and complementary capabilities, leading to improved and harmonised services. There is less duplication of services, leading to an improved use of resources across Europe. Economies of scale and saving of resources are also realised due to common development and the optimisation of operations.
- Innovation is fostered through a reinforced partnership of research organisations with industry.
- A new generation of researchers is educated that is ready to optimally exploit all the essential tools for their research.
- Closer interactions between larger number of researchers active in and around a number of infrastructures facilitate cross-disciplinary fertilisations and a wider sharing of information, knowledge and technologies across fields and between academia and industry.
- For communities which have received three or more grants in the past, the sustainability of the integrated research infrastructure services they provide at European level is improved.
- The integration of major scientific equipment or sets of instruments and of knowledge-based resources (collections, archives, structured scientific information, data infrastructures, etc.) leads to a better management of the continuous flow of data collected or produced by these facilities and resources.
- When applicable, the integrated and harmonised access to resources at European level can facilitate the use beyond research and contribute to evidence-based policy making.
- When applicable, the socio-economic impact of past investments in research infrastructures from the European Structural and Investment Funds is enhanced.

**Cross-cutting Priorities:** International cooperation, Gender, Open Science, Socio-economic science and humanities

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<sup>[1]</sup> See the Eligibility and admissibility conditions for this call.

<sup>[2]</sup> See part D of the section “Specific features for Research Infrastructures”.

<sup>[3]</sup> As framed by the directive 86/609/EEC, and by the Commission proposal for its revision, COM(2008)543

<sup>[4]</sup> When appropriate, proposals addressing areas under this domain are encouraged to develop synergies with Copernicus data and information as well as with GEO/GEOS.

<b>Horizon 2020 Pillar:</b>	Excellent Science
<b>Programme:</b>	European research infrastructures (including e-Infrastructures)
<b>Call Title:</b>	Integrating and opening research infrastructures of European interest
<b>Call Identifier:</b>	h2020-infraia-2018-2020
<b>Topic Title:</b>	Integrating Activities for Advanced Communities
<b>Topic Identifier:</b>	INFRAIA-01-2018-2019
<b>Type of Action:</b>	RIA Research and Innovation action
<b>Deadline(s):</b>	20-03-2019 (single-stage)

**Participant Portal Weblink:**

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/infraia-01-2018-2019.html>

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Funding will be provided to support, in particular, the trans-national and virtual access provided to European researchers (and to researchers from **Third countries** under certain conditions<sup>[2]</sup>), the cooperation between research infrastructures, scientific communities, industry and other stakeholders, the improvement of the services the infrastructures provide, the harmonisation, optimisation and improvement of access procedures and

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Proposals from advanced communities will have to clearly demonstrate the added value and the progress beyond current achievements in terms of integration and services, of a new grant. The strongest impact for advanced communities is expected typically to arise from focusing on innovation aspects and widening trans-national and virtual access provision, both in terms of wider and more advanced offer of scientific services, than in terms of number of users and domains served. Furthermore, in particular for communities supported in the past under three or more integrating activities, the creation of strategic roadmaps for future research infrastructure developments as well as the long-term sustainability of the integrated research infrastructure services provided at European level, need to be properly addressed. The latter requires the preparation of a sustainability plan beyond the grant lifecycle as well as, where appropriate, the involvement of funders.

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upon the state of the art in ICT and e-infrastructures for data, computing and networking, and ensure connection to the European Open Science Cloud.

Integrating Activities should in particular contribute to fostering the potential for innovation, including social innovation, of research infrastructures by reinforcing the partnership with industry, through e.g. transfer of knowledge and other dissemination activities, activities to promote the use of research infrastructures by industrial researchers, involvement of industrial associations in consortia or in advisory bodies.

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Proposals should include clear indicators allowing the assessment of the progress towards the general and specific objectives, other than the access provision.

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Further conditions and requirements that applicants should fulfil when drafting a proposal are given in part D of the section “Specific features for Research Infrastructures”. Compliance with these provisions will be taken into account during evaluation.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 10 million would allow this topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

On the basis of a multiannual plan drafted taking into account the assessment and the timing of previous grants as well as strategic priorities and needs, in term of research infrastructures services, emerging from other parts of Horizon 2020, this work programme invites proposals addressing the following areas listed under the different domains. A balanced coverage of the various domains, in line with the distribution of areas per domain, is expected as outcome of this topic.

2019 deadline

The areas to be addressed under the different domains will be defined at a later stage, before the opening of the related call.

### **Expected Impact:**

- Researchers will have wider, simplified, and more efficient access to the best research infrastructures they require to conduct their research, irrespective of location. They benefit from an increased focus on user needs.

- New or more advanced research infrastructure services, enabling leading-edge or multidisciplinary research, are made available to a wider user community.
- Operators of related infrastructures develop synergies and complementary capabilities, leading to improved and harmonised services. There is less duplication of services, leading to an improved use of resources across Europe. Economies of scale and saving of resources are also realised due to common development and the optimisation of operations.
- Innovation is fostered through a reinforced partnership of research organisations with industry.
- A new generation of researchers is educated that is ready to optimally exploit all the essential tools for their research.
- Closer interactions between larger number of researchers active in and around a number of infrastructures facilitate cross-disciplinary fertilisations and a wider sharing of information, knowledge and technologies across fields and between academia and industry.
- For communities which have received three or more grants in the past, the sustainability of the integrated research infrastructure services they provide at European level is improved.
- The integration of major scientific equipment or sets of instruments and of knowledge-based resources (collections, archives, structured scientific information, data infrastructures, etc.) leads to a better management of the continuous flow of data collected or produced by these facilities and resources.
- When applicable, the integrated and harmonised access to resources at European level can facilitate the use beyond research and contribute to evidence-based policy making.
- When applicable, the socio-economic impact of past investments in research infrastructures from the European Structural and Investment Funds is enhanced.

**Cross-cutting Priorities:** International cooperation, Gender, Open Science, Socio-economic science and humanities

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<sup>[1]</sup> See the Eligibility and admissibility conditions for this call.

<sup>[2]</sup> See part D of the section “Specific features for Research Infrastructures”.

## Industrial Leadership

<b>Horizon 2020 Pillar:</b>	Industrial Leadership
<b>Programme:</b>	Leadership in Enabling and Industrial Technologies - Space
<b>Call Title:</b>	Space 2018-2020
<b>Call Identifier:</b>	h2020-space-2018-2020
<b>Topic Title:</b>	International Cooperation Copernicus – Designing EO downstream applications with international partners
<b>Topic Identifier:</b>	DT-SPACE-06-EO-2019
<b>Type of Action:</b>	RIA Research and Innovation action
<b>Deadline(s):</b>	12-03-2019 (single-stage)

### Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/dt-space-06-eo-2019.html>

**Specific Challenges:** Copernicus, the Union's Earth observation and monitoring programme produces a wealth of data and information regarding the Earth sub-systems (land, atmosphere, oceans) and cross-cutting processes (climate change, emergency and security). Cooperation with international partners is key to promoting the uptake of Copernicus globally, exploiting possibilities for integrating in-situ, space data and information technologies. Building the Copernicus full, free and open data policy, the Commission seeks to facilitate access to Copernicus data and information for interested international partners. Administrative cooperation arrangements on Copernicus data access and earth observation data exchange have already been signed with the United States and **Australia**, and discussions towards similar cooperation have been started with other countries and regions (including Africa, Latin American countries and Asia-Pacific countries).

Cooperation with partner countries should be fostered with a view to using Copernicus data to jointly develop algorithms, services and/or products which serve local user needs and/or enhance the Copernicus global product quality.

It is encouraged to cooperate on data processing and applications using the Copernicus DIAS, integrate third-party data (including in-situ data) and envisage data assimilation into models and products made available on the Copernicus platform of the Copernicus services.

For such applications and developments to succeed in the market or with public users, the products need to be shaped according to users' needs and their value to users must be openly demonstrated to the wider user

community. This needs to be achieved in an environment integrated at the level of the user, in order for users to accept the innovative potential which the product promises. This will require also specific attention to be given to the various processes in place in the users' workflows which incorporate the EO information. Furthermore, the transition of R&D product prototypes to viable commercial product lines after the end of the EU funded phase remains a challenge to be addressed early on during product development.

**Scope:** Proposals shall address a wide variety of applications stemming from the use of Earth observation and their smart integration with other related technologies. Copernicus should be considered as part of the solution which may include other space or non-space inputs. This is likely to lead to greater value, opportunities and especially market uptake. Applications shall be sustained by a production process capable of delivering to the user a product which is validated and accepted as a marketable product in the international partner country. International collaboration has a key role to play in this context, as it enhances access to markets beyond the national borders, notably by enabling space application providers to absorb market-related tacit knowledge and know-how of their partners. Corresponding validations and customisations are to be undertaken, and the business case for the application is to be demonstrated. Service level models are to be developed, with appropriate quality of service definitions for the application. Application products are expected to adopt open standards for data documentation, data models and services including data processing, visualisation and cataloguing on a large scale.

Activities shall include joint cal/val activities or integration of local in-situ systems to enhance service products. It is important to exploit the added value of integration of EO observation technologies (both satellite, airborne and ground based) with positioning ones, and ICT (enhancing new frontiers opened by cloud computing) from international partner countries through the development of applications, and encourage their insertion into the market.

The choice of EO application is left to the proposer.

Applicants are advised to consult further information on the availability of Copernicus Sentinel Data, access to Copernicus Contributing Mission data, as well as issues recommended to be detailed in the proposals via the Commission's Copernicus website<sup>[1]</sup>.

For projects to be funded under this topic:

- Participation of partners from countries that have signed a Copernicus Cooperation Arrangement<sup>[2]</sup> is required;
- Participation of industry, in particular SMEs, is encouraged;
- Participation of partners involved in international GEO initiatives is encouraged.

The Commission considers that proposals requesting a contribution from the EU of between EUR 1 and 2 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

This topic contributes to the Horizon 2020 focus area "Digitising and transforming European industry and services".

**Expected Impact:**

- Establish sustainable supply chains for innovative EO value added products and services with demonstrated commercial value with international client communities;
- Complete integration, based on international standards, into the customer's existing business processes and processing chains, as well as the economic viability of the application is to be demonstrated;
- Enhance the European industry's potential to take advantage of market opportunities and establish leadership in the field and to boost business activity;
- Lead to new or improved products, processes or services on the market that are capable of generating within 3 years after the end of public funding a significant turnover for the participants, and create new jobs;
- Lead to an improved quality of the Copernicus global product, thereby enhancing the staving of Copernicus data and information in a global environment and GEOSS.

**Cross-cutting Priorities:** International cooperation

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<sup>[1]</sup> <http://www.copernicus.eu/main/data-access>

<sup>[2]</sup> See Copernicus.eu for list of countries concerned

## Societal Challenges

<b>Horizon 2020 Pillar:</b>	Societal Challenges
<b>Programme:</b>	Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy
<b>Call Title:</b>	Sustainable Food Security
<b>Call Identifier:</b>	h2020-sfs-2018-2020
<b>Topic Title:</b>	European Joint Programme on agricultural soil management
<b>Topic Identifier:</b>	LC-SFS-20-2019
<b>Type of Action:</b>	COFUND-EJP COFUND (European Joint Programme)
<b>Deadline(s):</b>	23-01-2019 (single-stage)

### Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/lc-sfs-20-2019.html>

**Specific Challenges:** Good agriculture soil management contributes to food security, climate change mitigation/adaptation and ecosystem services. Preserving and increasing fertility of soils, not least through their organic content and water retaining capacity, increases agricultural production. Soils and their carbon content are also important for climate change mitigation. A number of good soil management practices have been developed to deal with some of the challenges; however serious knowledge gaps exist, e.g. on the characteristics of soils in various regions of Europe, the factors influencing their fertility or their capacity to store carbon, depending on different climate and environment conditions. The European Union is committed to addressing climate change with ambitious targets. An integrated framework for soil research in Europe is required to overcome current fragmentation and unleash the potential of agricultural soils to contribute to climate change mitigation/adaptation, while preserving or increasing agricultural functions.

**Scope:** The European Joint Programme will boost soil research with main emphasis on agricultural soil contribution to climate change mitigation and adaptation. The aim is to construct a sustainable framework for an integrated community of research groups working on related aspects of agricultural soil management<sup>[1]</sup>. The activities should look at how management of agricultural soils can reduce degradation of land and soils (in particular soil erosion and loss of organic matter), preserve and increase fertility of soils and how the processes related to organic content and water retaining capacity can support mitigation and adaptation to climate change. The EJP will evaluate and foster implementation of novel technologies for soil management and carbon

sequestration. The aim of the EJP is also to look for synergies between different approaches used in Europe for farm level accounting of emissions and removals from agricultural activities and particularly of carbon storage. In doing so, activities will contribute to improving inventories, measurements, reporting and accounting activities at different scales. Sustainable agricultural productivity and environmental aspects will also be targeted in connection with climate change mitigation and adaptation, so that optimisation of land management is ensured.

The European Joint Programme will include joint programming and execution of research and other joint integrative activities such as education and training (e.g. short-term missions, workshops), knowledge management, access to experimental facilities and databases, including also harmonisation, standardisation.

State-of-art technologies for mapping and soil sampling (physical, chemical and biological parameters) should be explored for wider and simple use from national level to farm level. In return, by e.g. developing new ICT tools, this could help farmers to protect and manage soils in line with current scientific understanding of processes. The EJP should also facilitate sampling and further development of LUCAS<sup>[2]</sup> –European Soil Database as well support EU contribution to global soil mapping activities.

Participating legal entities must have research funding and/or management responsibilities in the field of agriculture soil management.

The proposal should include a five-year roadmap describing the key priorities and governance processes as well as the first annual work plan.

The acquired knowledge should support policy making in the domain of agricultural soil management and related policies, such as agriculture, climate and environment, and when feasible and appropriate transfer of science to practice for better agricultural soil management by farmers should be envisaged.

The activities will need to be coordinated as appropriate with the Global Soil Partnership and more particularly with European Soil Partnership node, with the **Global Research Alliance** on agricultural greenhouse gases, the project selected under SFS-50-2017, 4/1000, GACSA, JPI FACCE, JPI CLIMATE, Belmont Forum, and soil activities coordinated by the JRC<sup>[3]</sup> when relevant and appropriate. The work of the EJP will also support number of policies: Common Agricultural Policy, Climate Change related policy and relevant environmental policies, in particular the implementation of the EU Soil Thematic Strategy<sup>[4]</sup>.

Considering the budget available, the scope covered and the potential entities for the EJP, the Commission considers that an EU contribution to a maximum 50% of the total eligible costs of the action or up to 40 million EUR would allow this specific challenge to be addressed appropriately.

**Expected Impact:** The project will lead to significant long term alignment of research strategies and activities at national and EU level by:

- fostering understanding of soil management and its influence on climate mitigation and adaptation, sustainable agricultural production and environment;
- understanding how soil carbon sequestration can contribute to climate change mitigation at regional level including accounting for carbon;
- strengthening scientific cooperation at European level including training of young scientists;
- development of agreed knowledge base and database for European contribution towards international reporting;
- contributing to the European Soil Data Centre with harmonised European soil information for international reporting.

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<sup>[1]</sup> Agro-forestry is included in the topic.

<sup>[2]</sup> Land use/cover area frame statistical survey, abbreviated as LUCAS, is a European field survey program funded and executed by Eurostat [http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Land\\_use/cover\\_area\\_frame\\_survey\\_%28LUCAS%29](http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Land_use/cover_area_frame_survey_%28LUCAS%29)

<sup>[3]</sup> European Soil Data Centre; EIONET - European Environment Information and Observation Network – soil network

<sup>[4]</sup> COM(2006)231

<b>Horizon 2020 Pillar:</b>	Societal Challenges
<b>Programme:</b>	Health, demographic change and wellbeing
<b>Call Title:</b>	Better Health and care, economic growth and sustainable health systems
<b>Call Identifier:</b>	h2020-sc1-bhc-2018-2020
<b>Topic Title:</b>	Global Alliance for Chronic Diseases (GACD) - Scaling-up of evidence-based health interventions at population level for the prevention and management of hypertension and/or diabetes
<b>Topic Identifier:</b>	SC1-BHC-16-2018
<b>Type of Action:</b>	RIA Research and Innovation action
<b>Deadline(s):</b>	18-04-2018 (single-stage)

**Participant Portal Weblink:**

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc1-bhc-16-2018.html>

**Specific Challenges:** The Global Alliance for Chronic Diseases<sup>[1]</sup> (GACD) aims to coordinate research on chronic diseases at a global level in order to enhance knowledge exchange across individual projects, and to better understand the impact of socio-economic, cultural, geopolitical and policy on research findings, so as to appropriately adapt interventions and scale-up to different geographical, economic and cultural settings. The GACD call will support research associated with the scale-up of interventions for the prevention and/or management of hypertension and/or diabetes in low- and middle-income countries (LMIC<sup>[2]</sup>) and/or in vulnerable populations in **High Income Countries** (HIC).

Hypertension affects one billion people worldwide and is a major contributor to the growing global pandemic of cardiovascular disease and stroke. It is estimated that raised blood pressure indirectly currently kills approximately 8 million people every year<sup>[3]</sup>, while cardiovascular disease accounts for approximately 18 million deaths a year<sup>[4]</sup>, nearly one third of total deaths. Not only is hypertension more prevalent in LMIC, there are also more people affected because a larger proportion of the population live in those countries than in HIC.

Poor hypertension control and the absence of strategies to maintain normal blood pressure, particularly in LMICs and in vulnerable populations in HIC, reflect the challenges of effective and affordable implementation in healthcare and other sectors.

In the past twenty years the global death rate from diabetes has doubled and the World Health Organisation is predicting that this will increase by two thirds by 2030. It is currently estimated that 422 million adults worldwide suffer from diabetes of which 80% are from LMIC. In 2012, an estimated 1.5 million deaths were directly caused by diabetes and another 2.2 million deaths were attributable to high blood glucose<sup>[5]</sup>.

Identifying and evaluating interventions to assess efficacy is not always enough to ensure their wide uptake in the real-world. Even when information, tools and interventions have been tested within real-world effectiveness studies, the development of knowledge to support their broader uptake<sup>[6]</sup> has often remained outside the remit of research. Effectively implementing and scaling-up interventions, programmes, and policies to the regional and national levels are persistent challenges.

It is essential that policy makers, communities, families, caregivers, patients, as well as healthcare practice and other settings are equipped with evidence-based strategies to integrate scientific knowledge and effective interventions into everyday use. Researchers have found it challenging to ensure that tools and interventions deemed efficacious within clinical or community-based trials are readily adopted and implemented. Scaling-up interventions to large populations is not a straightforward task. In practice, translation from a pragmatic trial to the real-life commissioning and continuous delivery of an intervention across a health system is a huge political and economic challenge. Without intentional, guided efforts to scale-up, a new evidence-based intervention might not be broadly implemented.

**Scope:** Proposals must focus on the scale-up of interventions at population level for hypertension and/or diabetes prevention and/or management in LMIC, and/or in vulnerable populations in HIC. Proposals addressing comorbidities with either hypertension or diabetes, including between them, are encouraged.

Proposals must align with commitments or planned commitments at a regional or country level to implement evidence-based interventions (including evidence of cost-effectiveness and affordability) across health or other sectors. Policymakers, intervention payers (excluding research funding agencies), researchers (including local researchers), implementers and beneficiaries should be involved at all stages of the intervention development and implementation design to identify the challenges to intervention delivery in real settings. Such partners will be integral to the success and sustainability of the programme and it is essential that they are engaged early, and participate actively in the design of the research proposal. Researchers should collaborate closely with the authorities responsible for the programme's delivery. Those authorities must pay for and provide the interventions, possibly through loans contracted from development banks or other financial providers. Proposals will carry out the research associated with the scale-up of the intervention.

Proposals must build on evidence-based interventions (including evidence of cost-effectiveness and affordability) for the respective population groups under defined contextual circumstances and should seek to replicate and scale-up interventions. The selected interventions to be scaled-up should have been proven to be equitable, safe, effective, and efficient as well as making local health systems and health services more responsive and person-centred. In particular, proposals should:

- Be targeted at the regional or national level.
- Identify, develop, test, evaluate and/or refine strategies to scale-up evidence-based practices<sup>[7]</sup> into public health, clinical practice, and community settings.
- Identify, understand, and develop strategies for overcoming barriers to the adoption, adaptation, integration, scale-up and sustainability of evidence-based interventions, tools, policies, and guidelines. They should address a range of scale-up challenges, including complex processes, inefficient use of resources, inequitable allocation of resources, and supply and demand barriers to scaling-up and sustainability.
- Identify, understand, and develop strategies for measuring the unintended consequences of intervening at a system level.
- Use scale-up methods, tools, and approaches to enhancing equity, efficiency, people-centred, and responsive health systems, promoting a culture of evidence-informed learning, engaging stakeholders, and improving decisions on policies and programmes to achieve better health outcomes.
- Be aligned with existing policies, programme management, monitoring and evaluation processes. They may include important shifts in the practices, incentives, and engagement of global, national and regional health policy, regulatory frameworks, management, research, publication, and civil society stakeholders.
- Include health economic assessments as an integral part of the proposed research.
- Demonstrate that policy makers and health authorities are supportive of, and have been engaged in designing the research proposal.

Proposals should be multidisciplinary and cross-sectorial. Relevant gender and cultural aspects, as well as vulnerable populations, should be taken into account. Proposals may build on previous hypertension and diabetes projects supported under the GACD that have demonstrated the potential for impact.

The proposal will cover the research around the scaling up of the interventions. The research may cover:

- Identification of the best evidence-based interventions;
- Definition and implementation of optimum scale-up methods (e.g. pilots in multiple settings, defining a scalable unit);
- Embed real time monitoring/evaluation to refine protocols and ensure adaptability and effective uptake;
- Evaluation of health outcomes;

- Where appropriate, make recommendations for the replication of the applied scale-up interventions to other countries or very large regions.

Research under GACD involves regular exchange of research findings and information across participating projects by means of cross-project working groups and annual joint meetings. Wherever feasible, projects should harmonise and standardise their data collection and exchange data. Applicants must budget for annual costs of having two team members participate in one annual face-to-face meeting of the Annual Scientific Meeting (location to vary annually).

The Commission considers that proposals requesting a contribution from the EU of between EUR 2 to 4 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

### **Expected Impact:**

(one of or combinations of):

- Enhanced programmes and policies that can significantly reduce the numbers of patients with hypertension and/or diabetes through prevention.
- Enhanced programmes and policies that can significantly increase the number of patients for whom hypertension and/or diabetes was previously undetected.
- Enhanced programmes and policies that can significantly increase the number of patients for whom hypertension and/or diabetes is controlled.
- Enhanced effective, efficient, equitable and sustainable health systems, to lesser inequalities and greater health equity and additional societal benefits, in the medium and long-term.
- Improved health services more responsive to the need of the comorbidities of hypertension and diabetes and other non-communicable diseases.
- Recommendations to translate findings to other countries or very large regions.
- Contribute to the attainment of the sustainable development goals for non-communicable diseases<sup>[8]</sup>.

**Cross-cutting Priorities:** Gender, Socio-economic science and humanities, International cooperation

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<sup>[1]</sup> <http://www.gacd.org/>

<sup>[2]</sup> World Bank country classification based on estimates of gross national income per capita: [databank.worldbank.org/data/download/site-content/CLASS.xls](http://databank.worldbank.org/data/download/site-content/CLASS.xls)

<sup>[3]</sup> Forouzanfar et al. JAMA. 2017;317(2):165-182. doi:10.1001/jama.2016.19043

<sup>[4]</sup> Roth et al. J Am Coll Cardiol. 2017 May 15. pii: S0735-1097(17)37244-3.

<sup>[5]</sup> WHO Global report on diabetes: <http://www.who.int/diabetes/global-report/en/>

<sup>[6]</sup> For instance: cost and financing of the intervention, provider training, availability of resources, integration into healthcare systems, delivery to vulnerable or difficult-to-reach populations, monitoring the quality of intervention delivery

<sup>[7]</sup> For instance: behavioural interventions; prevention, early detection, diagnostic, treatment and disease management interventions; quality improvement programmes

<sup>[8]</sup> <https://sustainabledevelopment.un.org/sdg3>

<b>Horizon 2020 Pillar:</b>	Societal Challenges
<b>Programme:</b>	Health, demographic change and wellbeing
<b>Call Title:</b>	Better Health and care, economic growth and sustainable health systems
<b>Call Identifier:</b>	h2020-sc1-bhc-2018-2020
<b>Topic Title:</b>	Implementation research for maternal and child health
<b>Topic Identifier:</b>	SC1-BHC-19-2019
<b>Type of Action:</b>	RIA Research and Innovation action
<b>Deadline(s):</b>	02-10-2018,16-04-2019 (two-stage)

**Participant Portal Weblink:**

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc1-bhc-19-2019.html>

**Specific Challenges:** Each year, an estimated 213<sup>[1]</sup> million women become pregnant and 140 million newborn babies are delivered. However, many of the women and infants receive no appropriate care or care that is below evidence-based standards; others suffer from over-medicalisation. Access to quality care, during and after pregnancy, is essential to ensure good maternal health and the favourable early development of the child.

The gap between countries with the lowest and highest maternal mortality rates has doubled between 1990 and 2013 and huge differences exist within countries in Europe and globally. The burden of maternal mortality in both contexts falls disproportionately on the most vulnerable groups of women and girls: Every day approximately 830 women die from preventable causes related to pregnancy and childbirth; 99% of maternal deaths occur in developing countries<sup>[2]</sup>

Although there is a consolidated evidence base of what works in improving maternal and newborn health, the "knowledge-do" gap has not been bridged and evidence based guidelines are insufficiently implemented or integrated in routine training and service provision. Therefore, more and better targeted implementation research is needed.

**Scope:** Proposals should focus on implementation research<sup>[3]</sup> for improving maternal and child health with a focus on the first '1000 days' from pregnancy until two years of age.<sup>[4]</sup> This research can take place in either **High Income Countries** or low and middle income countries, or in a combination thereof.

The implementation research in the first 1000 days may cover:

- new or improved health service delivery interventions that strengthen maternal and child health; and/or
- the scaling up and/or adapting of existing evidence-based interventions to new contexts.

Neither pre-clinical research nor clinical trials in the context of product development are within the scope of this call.

The research should take into account the specificities of different contexts and situations. The research should be integrated from different perspectives, e.g. recognising the interdependent relationship between mother and child; addressing prevention, health promotion and treatment; allowing for the specific needs of vulnerable groups (e.g. preterm infants, adolescents, migrants); addressing different concurrent pathologies; avoiding the creation of parallel or vertical programmes, etc;. Research may cover physical and/or mental health, as well as communicable and non-communicable diseases. The integration of social sciences including gender analysis and the use of mixed methods research<sup>[5]</sup> is strongly encouraged. In addition, particular attention should be given to equity issues.

The interventions should build on but may go beyond existing state-of-the art knowledge on biological, psychological and social determinants of maternal and child health. Research is expected to be carried out in continuous partnership, in particular with the end-users, i.e. the concerned women, the fathers, and their community, in addition to policy makers, politicians, and the media, to ensure that evidence can be translated into policy and practice.

The Commission considers that proposals requesting an EU contribution between EUR 2 to 4 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

#### **Expected Impact:**

- Research-supported solutions to maternal and child health challenges.
- Providing evidence of successful and/or innovative approaches for bridging the "knowledge-do" gap in improving maternal and child health.
- Better understanding of scaling-up processes with regard to different contexts and resource requirements.
- Contribution to the achievement of SDGs 2 on improved nutrition (target 2), Goal 3 on health (targets 1 and 2 on maternal and child health) and Goal 5 on gender equality (targets 1 and 6) and Goal 10 (on reducing inequality within and between countries).

Applicants may be interested in a separate but connected call topic on "Food systems Africa" under Societal Challenge 2.

**Cross-cutting Priorities:** International cooperation, Socio-economic science and humanities, Gender

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<sup>[1]</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4727534/>

<sup>[2]</sup> WHO, Maternal mortality fact sheet (n. 348), Nov 2015 - <http://www.who.int/mediacentre/factsheets/fs348/en/> Lancet Series on Maternal Health (2016).

<sup>[3]</sup> 'Implementation Research is the scientific study of methods to promote the systematic uptake of clinical research findings and other evidence-based practices into routine practice, and hence to improve the quality (effectiveness, reliability, safety, appropriateness, equity, efficiency) of health care. It includes the study of influences on healthcare professional and organisational behaviour

<sup>[4]</sup> Lancet Series on Maternal and Child Nutrition (2013).

<sup>[5]</sup> broadly defined as research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry <http://journals.sagepub.com/doi/pdf/10.1177/2345678906293042>

<b>Horizon 2020 Pillar:</b>	Societal Challenges
<b>Programme:</b>	Smart, green and integrated transport
<b>Call Title:</b>	2018-2020 Mobility for Growth
<b>Call Identifier:</b>	h2020-mg-2018-2019-2020
<b>Topic Title:</b>	Innovative technologies for improving aviation safety and certification in icing conditions (InCo flagship)
<b>Topic Identifier:</b>	MG-2-5-2018
<b>Type of Action:</b>	RIA Research and Innovation action
<b>Deadline(s):</b>	04-04-2018 (single-stage)

**Participant Portal Weblink:**

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/mg-2-5-2018.html>

**Specific Challenges:** This action is part of the Aviation International Cooperation Flagship called "Safer and Greener Aviation in a Smaller World" mentioned in the introduction to this work programme 2018-2020.

Aviation is inherently and increasingly international. Aviation impacts globally the atmosphere, and vice-versa. Aviation emissions to the atmosphere are increasing. In-flight weather hazards are also increasing worldwide.

Meanwhile, the demand for aviation keeps growing globally. Commercial Air-Transport (CAT) fatal and non-fatal accidents are continuously decreasing with EASA Member States accident rate much lower than the world-wide one<sup>[1]</sup>.

However, in-flight weather hazards, in particular icing conditions, are a contributing factor in accidents and incidents world-wide. In line with ACARE Strategic Research & Innovation Agenda, further advancements in understanding, modelling, detection, avoidance and mitigation of in-flight performance degradation are necessary towards enabling harmonised certification with less flight trials.

**Scope:** Although several research activities addressed the issue of ice accretion on aircraft, resulting in improved understanding of icing phenomena, and also in promising strategies to detect and to remove ice accretion, those advancements were mostly focused on airframe. Future advancements should also include engines as well as rotorcrafts. In addition, reduction of power consumption of in-flight anti/de-icing devices and of the negative environmental impact of anti/de-icing processes is necessary, both in-flight and on the ground.

The proposals may aim at addressing several or all of the following areas:

- Further advancements in the detection, understanding, sensing, modelling, simulation and testing of icing, de-icing and anti-icing of all types in aviation (e.g. mixed-phase, ice crystals, super cooled large droplets, etc).
- Explore/propose/validate new certification methods, means of compliance, standards and protection systems (e.g. either active or passive, including coatings) for all types of icing and air vehicles, engines and on-board systems.
- Address the overall system integration, including operational and maintenance aspects.

The range of TRLs to address is broad, from fundamental research up to TRL 5 (at the end of the project). In line with the strategy for EU international cooperation in research and innovation<sup>[2]</sup>, multilateral international cooperation is encouraged, in particular with countries such as United States, Canada, Russia, Japan, Brazil and **Australia**. International cooperation can include work towards global monitoring of in-service events and icing hazards and towards joint tests, standards and certification, taking into account the activities of bodies such as the European Aviation Safety Agency (EASA), Federal Aviation Administration (FAA), EUROCAE and United Nations' International Civil Aviation Organisation (ICAO). Proposals may include the commitment from the European Aviation Safety Agency to assist or to participate in the action.

The Commission considers that proposals requesting a contribution from the EU between EUR 3 and 5 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

#### **Expected Impact:**

- Contribute to increase passenger safety by fewer accidents and less in-flight events worldwide.
- Contribute to decrease costs for all parties (e.g. industry, authorities, research & test centres) by improved and internationally accepted certification, standards and means of compliance, covering all types of icing hazards.
- Contribute to decrease delays in operations thanks to more efficient avoidance of icing hazards and to fewer damages in need of inspection and repair.

#### **Cross-cutting Priorities:** International cooperation

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<sup>[1]</sup> EASA, Annual Safety Review, 2016

<sup>[2]</sup> (COM(2012)497

<b>Horizon 2020 Pillar:</b>	Societal Challenges
<b>Programme:</b>	Smart, green and integrated transport
<b>Call Title:</b>	2018-2020 Digitising and Transforming European Industry and Services: Automated Road Transport
<b>Call Identifier:</b>	h2020-dt-art-2018-2019-2020
<b>Topic Title:</b>	Support for networking activities and impact assessment for road automation
<b>Topic Identifier:</b>	DT-ART-02-2018
<b>Type of Action:</b>	CSA Coordination and support action, RIA Research and Innovation action
<b>Deadline(s):</b>	04-04-2018 (single-stage)

**Participant Portal Weblink:**

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/dt-art-02-2018.html>

**Specific Challenges:** Besides technological progress in developing new automated driving functions, there are still many challenges and uncertainties related to the deployment of connected and automated vehicles. Many of these challenges can be better addressed when European partners work together and cooperate with international partners. Therefore, a coordinated and harmonised approach to support the deployment of automated driving systems at European and international level is needed. More cooperation is also necessary to assess the impacts of connected and automated driving systems. Several methodologies to assess impacts of connected and automated transport systems have already been developed and applied. However, a commonly agreed methodology to assess the impacts of connected and automated driving systems that would allow for informed decision making does not exist.

**Scope:** This topic will be implemented through two sub-topics (two types of actions). Proposals should address only one of the two.

Subtopic 1) Research and innovation action: Assessment of impacts, benefits and costs of connected, cooperative and automated driving systems

Proposals should address all the following aspects:

- Assess the short, medium and long term impacts, benefits and costs of different scenarios/use cases for connected, cooperative and automated driving systems (for passengers cars, automated urban

transport and goods transport) considering the full range of impacts including, but not limited to, driver behaviour, mobility behaviour, recharging and refuelling behaviour, accessibility, safety, traffic efficiency, emissions, energy consumption, use of resources, impact on employment, required skills, infrastructure wear and land use.

- Establish a solid multidisciplinary methodology to assess the long-term impacts of connected and automated driving systems.
- Provide a public toolkit for assessing impacts, benefits and costs of connected and automated systems (including required infrastructures) and decision support system to help authorities to evaluate strategic decisions on urban regulations and planning.

Specific attention should be paid to the transition phase towards higher levels of automation when individual vehicles may operate at different automation levels given the circumstances, and where human and machine operated vehicles are both present in varying penetration degrees.

In line with the Union's strategy for international cooperation in research and innovation, international cooperation is encouraged. In particular, proposals should consider cooperation with projects or partners from the US, Japan, South Korea, Singapore, and/or **Australia**. Proposals should foresee twinning with entities participating in projects funded by US DOT to exchange knowledge and experience and exploit synergies

The Commission considers that proposals requesting a contribution from the EU between EUR 4 and 6 million would allow this sub-topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

#### Subtopic 2) Coordination and support action: Networking activities to support connected, cooperative and automated driving

Proposals should address all the following aspects:

- Explore ways to strengthen cooperation and experience exchange amongst European and international stakeholders of connected, cooperative and automated driving in areas such as: research and innovation (e.g. human-machine interface, social acceptance of automated driving technologies, digital technologies for automation, impact assessment), global framework and international standards for connectivity and automation technologies, sharing of knowledge and data of large-scale European and national demonstration projects, foster a common evaluation framework across the demonstrations, education and training needs.
- Support programme owners and managers to better coordinate national and multi-national funding programmes in the area of connected, cooperative and automated driving, building on past coordination efforts.
- Support ongoing and extend international cooperation activities in the area of cooperative, connected and automated driving (including road

automation, standardisation harmonisation and connectivity issues). An extension of the cooperation to countries and regions beyond US and Japan should be explored.

- Provide a forum for European and international stakeholders of road automation to exchange experiences and knowledge on the development and deployment of cooperative, connected and automated mobility systems and to discuss future challenges. Organise conferences and workshops on connected, cooperative and automated driving in Europe. Interactions fostering discussions on best practices and lessons learned of automated transport solutions across all transport modes are encouraged.

In line with the Union's strategy for international cooperation in research and innovation, international cooperation is encouraged. In particular, proposals should consider cooperation with projects or partners from the US, Japan, South Korea, Singapore, and/or **Australia**. Proposals should foresee twinning with entities participating in projects funded by US DOT<sup>(1)</sup> to exchange knowledge and experience and exploit synergies.

The Commission considers that proposals requesting a contribution from the EU between EUR 2 and 3 million would allow sub-topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

### **Expected Impact:**

- Enable decision makers to promote the most promising scenarios of connected, cooperative and automated driving systems based on a comprehensive impact assessment and knowledge base.
- Demonstrate the expected socio-economic and environmental benefits of future connected, cooperative and automated driving systems and raise awareness and acceptance.
- Minimise uncertainties related to the development and acceptability of different scenarios of connected, cooperative and automated driving.
- Understand which factors and measures can better unlock and foster the adoption of connected, cooperative and automated vehicles.
- Better visibility, comparability and transferability of research and demonstration activities in Europe and worldwide.
- Closer cooperation between stakeholders within Europe and worldwide on common challenges in the area of connected and automated driving. Better coordination of national and multi-national funding programmes will create synergies and reduce overlaps when setting R&I priorities.
- Support to EU Member States and stakeholders that are undertaking, or planning, larger scale public road tests with connected, cooperative and automated vehicles to exchange learnings and data, exploit synergies and propose common ways on how to leverage pilots towards deployment.
- Higher penetration of automated driving functions in the market, resulting in both increased safety on the roads and lower emissions, and stronger market position of European industry in systems for vehicle automation, including through Galileo and EGNOS.

**Cross-cutting Priorities:** Socio-economic science and humanities, International cooperation

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<sup>[1]</sup> United States Department of Transportation.