UNIVERSITA' DEGLI STUDI DI PERUGIA
DIPARTIMENTO DI SCIENZE POLITICHE
UFFICIO RICERCA ED INTERNAZIONALIZZAZIONE

Opportunities for Researchers from the Socio-economic Sciences and Humanities (SSH) in Horizon 2020

Societal Challenge 1
Health, Demographic Change and Wellbeing

SC1-PM-04–2016
Networking and optimising the use of population and patient cohorts at EU level

Specific challenge

Population cohorts are invaluable resources to obtain detailed description of individual biological variations in connection with a variety of environmental, pathogenic, occupational, societal, and lifestyle determinants that influence the onset and evolution of diseases. Europe currently has some of the most valuable population and patient cohorts, including well annotated clinical trial cohorts. However, the lack of integration of these cohorts hampers the optimal exploitation of these resources, essential to underpin and facilitate the development of stratified and personalised medicine.

Scope

Proposals should aim at maximizing the exploitation of cohorts by bringing together national and/or European cohorts with common scientific interests (e.g. across diseases, children, mothers, elderly, birth, gender, etc.), and by taking advantage of new technologies (e.g. ICT, **social platforms**, etc.) and new type of data (e.g. geographical, genetic, eHealth records, etc.). Based on those cohorts using a comprehensive integration strategy to facilitate hypothesis-driven research, data sharing, harmonisation and analysis, **proposals should provide expanded resources and knowledge on health and disease determinants**, onset and course of diseases (including aspects of co-morbidity and/or co-infections), clinical, **public health and socio-economic research**. Synergies with relevant existing European infrastructures and additional collaborations with relevant international initiatives are encouraged. Proposals should also engage with relevant international/national/regional authorities to ensure that findings are implemented and translated into health policy.
The Commission considers that proposals requesting a contribution from the EU of between EUR 8 and 10 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

Expected impacts include one of or a combination of the following point(s):
- Make major conceptual, methodological and analytical contributions towards integrative cohorts and their efficient exploitation.
- Contribute to providing novel information on health maintenance, onset and course of diseases, or population stratification, with a view to tailor diagnosis or to optimise prevention and treatment.
- **Provide the evidence base for the development of policy strategies for prevention, early diagnosis, therapies, health economics as well as addressing health inequalities. Wherever relevant, evidence for economic evaluation of interventions should also be included.**
- Optimise the use of population cohorts in defining/improving clinical practice and public health policy.

Type of action	Research and Innovation action
Deadline	**13 April 2016**
Call identifier	H2020-SC1-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3051-sc1-pm-04-2016.html

SC1-PM-07–2017
Promoting mental health and well-being in the young

Specific challenge

Mental well-being is integral to population health and well-being and contributes to the functioning of individuals, families, communities and the social and economic prosperity of society. Mental and **behavioural disorders** including addictive behaviour place immense burdens on individuals, families and society; they **also increase the risk of** co-morbidities and **social exclusion**. Childhood and adolescence are crucial periods for laying the foundations for healthy development and mental well-being. **There is compelling evidence that promotion of mental well-being** and prevention interventions, when implemented effectively, can reduce risk factors for mental disorders, enhance protective factors for good mental and physical health and **lead to lasting positive effects on a range of educational, social and economic outcomes for young people**. Medical and **psychological factors, family and social factors (including working conditions)** as well as digital environments **are some of the different determinants impacting the health and well-being of the young.** Resilience to adversity will enhance their ability to cope. There is a need for more robust evidence on resilience factors and on effective interventions promoting mental well-being. Developing these in the young offers the possibility of a positive influence on child development in critical/sensitive periods (childhood, adolescence, transition to young adulthood), thanks to early neuroplasticity.

Scope

Proposals should develop population-oriented primary prevention interventions to promote mental well-being of young people and assess them for their effectiveness. **The interventions should build on but may go beyond existing state-of-the art knowledge on** biological, **psychological and social determinants of mental well-being such as societal, cultural, work life, lifestyle, epidemiological, economic and environmental perspectives. The proposals should aim at increasing resilience and mitigating the impact of** biological, **psychosocial** and environmental **risk factors.** The target group should include young up to 25 years (or a subgroup there of), which is an age limit often used as many severe disorders start in this period.
The research design should be developed by means of a multidisciplinary approach and involve the young themselves and other relevant stakeholders. Innovative approaches in involving the young and gathering their inputs for the design of the intervention should be considered. The interventions should use a holistic approach, taking gender and health inequality aspects into account, in increasing resilience and empowering the young. The interventions to be developed should reflect the diversity of the different countries and regions in Europe and beyond. The research should pay particular attention to ethical issues. **The interventions should be assessed for** mental well-being outcomes as well as **the economic and social benefits and impact on reducing inequalities.** These analyses of impact and effectiveness should be presented in quantitative as well as qualitative terms, in a gender disaggregated way where relevant. The results should be disseminated throughout Europe and beyond in order that the evidence generated is fully exploited.
The Commission considers that proposals requesting a contribution from the EU of between EUR 2 and 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

Short or medium term impact, likely during the lifetime of the project:
- Improved mental well-being in the targeted group of young people.
- **The innovative interventions** will create a strong evidence base for mental well-being promotion programmes in Europe, **contributing to** greater health equity and **improved societal benefits**.
- Longer term impact, likely beyond the lifetime of the project:
- Improved mental well-being in youth should contribute to reducing school and college/university dropout in the short term, strengthening personal confidence and cognitive function, improving educational efforts and enhancing employability.
- Preventative strategies are established which have a real effect of reducing the occurrence of mental disorders and co-morbidities associated with mental disorders later in life.

Type of action	Research and Innovation action
Deadline	**1st stage - 4 October 2016** **2nd stage - 11 April 2017**
Call identifier	H2020-SC1-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2437-sc1-pm-07-2017.html

SC1-PM-10–2017
Comparing the effectiveness of existing healthcare interventions in the adult population

Specific challenge

Effective health care and prevention may be improved by additional evidence as to the most effective health interventions. Growing numbers of patients affected by chronic diseases also call for efficiently managing co-morbidities.

Scope

Proposals should compare the use of currently available preventative or therapeutic (pharmacological as well as non-pharmacological) healthcare interventions in adults. While there is no restriction on the diseases or interventions to be the focus of proposals, **preference will be given to proposals focusing on interventions with high public health relevance and socio-economic impact**, **i.e. interventions** addressing conditions that are particularly frequent, may lead to co-morbidities, **have a high negative impact on the quality of life of the individual** and/or are associated with significant costs or where savings can be achieved. **A cost effectiveness analysis must be included**. Given the focus on existing interventions, proposals will aim to contribute to improve interventions, take decisions about the discontinuation of interventions that are less effective or less cost-effective than others, and **make recommendations on the most effective and cost-effective approaches**. A comprehensive array of clinical and safety parameters, as well as health and socio-economic outcomes (e.g. quality of life, patient mortality, morbidity, costs, and performance of the health systems) for chosen populations should be assessed. Agreed core outcome sets (COS) should be used as endpoints in conditions where they already exist, in other cases efforts should be made to agree on such COS. Randomised controlled trials, pragmatic trials, observational studies, large scale databases and meta-analyses may be considered for this topic. **Where relevant the study population should address gender as well as socio-economic differentials in health and/or any other factors that affect health equity.**

The Commission considers that proposals requesting a contribution from the EU of between EUR 4 and 6 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

This topic is to provide the required evidence base for:
- more effective and safer interventions at individual and population level;
- enhanced compliance with healthcare interventions in the adult population;
- the use of health technology assessment methodology in this target group.

In particular:
- Improvement of individual patient outcomes and health outcome predictability through tailoring of interventions.
- Improvement of guideline development for prevention or treatment of diseases and the management of comorbidities.
- Provision of more accurate information to patients, caregivers and prescribers.

Type of action	Research and Innovation action
Deadline	**1st stage - 4 October 2016** **2nd stage - 11 April 2017**
Call identifier	H2020-SC1-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2435-sc1-pm-10-2017.html

SC1-PM-14–2016
EU-Japan cooperation on Novel ICT Robotics based solutions for active and healthy ageing at home or in care facilities

Specific challenge

Citizens in ageing European and Japanese populations wish to stay in their homes for as long as possible. They **are** however **at risk of age related impairments such as poor health, cognitive impairment, frailty and social exclusion with considerable negative consequences for their independence, quality of life**, that of those who care for them, and for the sustainability of health and care systems.

Scope

The call will address joint research and innovation proposals for developing and demonstrating advanced ICT Robotics based solutions for extending active and healthy ageing in daily life.
Proposals should build on advances in this domain, and should combine multi-disciplinary research involving behavioural, sociological, health and other relevant disciplines.
Characteristics of the solutions developed should be their modularity, cost-effectiveness, reliability, flexibility in being able to meet a range of needs and societal expectations, applicability to realistic settings, safety and acceptability to end-users. Gender and **ethical issues should be paid due attention.**
1. In order to support older people in ordinary daily life at home and in care facilities, proposed solutions should be driven by the needs, interests and lifestyles of older people through personalised and self-adaptable human-robot interaction. The proposed solutions should also provide a sense of stability and comfort, and reduce the burden on caregivers in time and labour costs.
2. The proposed solutions should further develop and build upon open platforms and Internet of Things approaches. There should be a system integration approach between robotics devices, intelligent living environments, which can support novel service delivery models, including the integration of robots, home (indoor) sensor networks, and handling of big data and IoT data in the cloud.
3. **The proposed work should develop novel service models** for facilitating prolonged independent living and support prevention of care/efficient delivery of care in accordance with the proposed applications and services (such as maintenance of cognitive function or well-being etc.) and **improvements in social situation (living assistance and reduction of isolation and loneliness etc.)** and empowering older people to make the most of their remaining faculties (engaging in housework and hobbies etc.) and reducing the burden on caregivers.
4. **The proposed application fields should demonstrate how solutions can be designed to allow for adaptation towards different histories and cultures across the EU and Japan and a variety of individual perception and preferences and cognitive capabilities.**
5. There should be realistic test sites in both the EU and Japan with sufficient users involved to validate the expected benefits and impact.
6. **In order for the ICT robotics service to be accepted in real life, it is necessary to ensure Ethical, Legal, and Social Issues (ELSI). Appropriate consideration on ELSI is required in both the EU and Japan.**
7. In order to spread services, extensive use of generalized infrastructures such as a cloud system and open sources are required.
8. Without limiting the use of specific applications or hardware systems, platform approaches are required to ensure interoperability as well as contributions to appropriate ongoing or new standardization work.
The European 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.

Expected impact

- To extend the independence and autonomy of older persons in need of care for example through reduction of admissions and days spent in care institutions, and prolongation of time spent living in own home when ageing with emerging functional and/or mental impairments.
- **To provide high quality service corresponding to the needs in daily lives of older persons.**
- **To improve quality of life of older persons and their carers.**
- To reduce caregivers burden due to work sharing with robots and supplement/complement human resources in care service provision allowing consecutive services such as 24-hour ones.
- Improvement of efficiency in care provision.
- Global leadership in advanced solutions supporting active and healthy ageing

Type of action	Research and Innovation action
Deadline	**12 April 2016**
Call identifier	H2020-SC1-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2433-sc1-pm-14-2016.html

SC1-PM-15-2017
Personalised coaching for well-being and care of people as they age

Specific challenge

The activity aims at developing and validating radically new ICT based concepts and approaches for empowering and motivating people in need of guidance and care due to age related conditions, in cooperation with their carers where relevant, and to help them improve and maintain their independence, functional capacity, health status as well as preserving their physical, **cognitive, mental and social well-being.**

Scope

Proposals should develop a proof of concept of radically new solutions for a personalised "virtual coach", building upon intelligent ICT environments, **access to relevant physiological and behavioural data, new forms of accessible interaction based on tangible user interaction concepts, open platforms and emotional computing**. Usability and ease of user interaction should be essential design elements of the "coach".
The "coach" should provide personalised advice, guidance and follow-up for key age related issues in daily life which impact the person's ability to remain active and independent, for example diet, physical activity, risk avoidance, preventive measures, **lifestyle and activity management, leisure, social participation and overall wellness**. **The goal should be to preserve physical, cognitive, mental and social well-being for as long as possible** and to facilitate interaction with carers (where relevant).
Solutions should build on and apply multi-disciplinary research and include intelligent algorithms beyond state-of-the-art capable of reasoning, autonomous learning and **adaptation to personal needs, emotional and behavioural patterns, conditions and preferences as well as the users' living environment and their social connections**. Solutions should be integrated seamlessly in existing every-day activities and provide desired information in fast and efficient manner. Attention theft by ICT (consuming too much of the user's time) should be avoided.
Proposals should address relevant ethics and gender aspects and should also assess related legal and regulatory questions such as ownership of data, data protection/privacy, liability and consumer protection. It is crucial that users are involved and drive the innovation at all stages of design and development, including user acceptability, satisfaction and impact in realistic settings.
The Commission considers that proposals requesting a contribution from the EU of between EUR 3 and 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

The proposal should present methodologies and metrics as appropriate for measuring its progress towards the expected impact in:
- Usefulness and effectiveness of personalized recommendations and follow-up in terms of the **goals of preserving physical, cognitive, mental and social well-being for as long as possible**;
- **Validation of non-obtrusive technology for physical, cognitive, social and mental well-being**;
- Evidence of user-centred design and innovation, new intuitive ways of human-computer interaction, and **user acceptance**;
- **Potential cost-effectiveness due to enhanced self-care, life-style and care management**.

Type of action	Research and Innovation action
Deadline	**31 January 2017**
Call identifier	H2020-SC1-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3069-sc1-pm-15-2017.html

SC1-PM-17–2017
Personalised computer models and in-silico systems for well-being

Specific challenge

There is continuous progress in systems medicine, multi-scale modelling and patient-specific modelling aspects. But these opportunities have been inconstantly explored for the entire chain of health and disease. Thus, there are very few in well-being, prevention or rehabilitation while these areas are crucial for reducing healthcare needs, building sustainable healthcare and for assuring a healthy and motivated workforce. More, **innovative methods are needed for better understanding and analysing** brain, neurobiological and the gut-brain axis and the stress-related disorders or whole body data (e.g. where the development of multiscale and high spatiotemporal resolution imaging methods are critical) and **their interactions with social, environmental, lifestyle, occupational, economic etc. factors that promote well-being and health.** Well-being is a consequence of resilience to challenges and illness and of better prevention adapted to predispositions and behaviours (including gender), of better consideration given to the functional troubles, of better recovery and rehabilitation after illness.

Scope

Proposals should aim at the development of new integrative dynamic computer-models and simulation systems of acceptable validity, with the potential to being reused, build on open service platforms and with application in well-being, health and disease. **The projects have to support computer modelling and simulations able to aggregate various information sets** e.g. molecular, biochemical, medical imaging, **social, lifestyle, economic, occupational**, microbiome, environmental, developmental, **psychological,** gender etc. into robust predictors for resilience in coping with and overcoming challenges and stresses and for recovery after challenges and illness. They will process and apply individual/patient-specific information in a multi-scale approach required for integrating information at a certain biological level within a wider context (at least one biological level from molecule to entire body). **Proposals will focus on multi-disciplinary research in medicine, SSH and ICT and should take advantage** when relevant **of existing large databases in** clinical medicine, biomedical or occupational research, environmental sciences, **Social Sciences and Humanities (SSH),** so enabling and facilitating the accumulation and relinking of complex and heterogeneous data collections. The models integrated in these multi-scale and multi-disciplinary approaches will have their predictive capability validated by state-of-the-art clinical and/or laboratorial studies and/or against large health registries. Whenever relevant, proposals will integrate data collected over time in order to inform on individual trajectories with periods of well-being and periods of illness and on the heterogeneity of resilience and recovery that can be different during the individual lifetime.

The Commission considers that proposals requesting a contribution from the EU of between EUR 4 and 6 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

- Benefit for health and well-being: new personalised interventions for increasing resilience and recovery.
- Advancements in medical computer-modelling and simulation that takes into account time and spatial scales.
- Supporting predictive and preventive approaches in medicine, neurosciences and life sciences.
- **Improving knowledge about well-being and association with life circumstances.**

Type of action	Research and Innovation action
Deadline	**14 March 2017**
Call identifier	H2020-SC1-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3061-sc1-pm-17-2017.html

SC1-PM-21-2016
Implementation research for scaling-up of evidence based innovations and good practice in Europe and low- and middle-income countries

Specific challenge

Research evidence and technological and process improvements during the past decades present a large opportunity for improving the functioning and sustainability of health systems. However, the uptake of well-researched and proven interventions addressing current challenges is still slow. Implementation research on scaling up evidence-based innovations and good practices intervention should facilitate the transferability of these practices across the borders of Europe and beyond.

Scope

Based on the concept of implementation research, proposals should seek to replicate and scale up a comprehensive intervention in the field of health systems that is innovative and well-researched, supported by sufficient documented evidence. This scaling up can take place within Europe as well as outside it, notably in low- and middle-income countries (LMIC). The topic does not cover micro-level interventions, e.g. to promote a specific therapeutic regimen for a single disease.

The selected intervention to be scaled up should be one that has proven to make health systems and health services more responsive, person-centred, safe, effective, and efficient. **Its stated impact should be broad, addressing economic and social benefits and its effect on reducing inequalities. The research should identify the facilitators of and barriers to scaling-up, including context-specific factors and differing social and health systems environments in Europe or in LMIC.**

Proposals should be multidisciplinary and relevant gender aspects should be taken into account. They also should reflect and take advantage of the regional diversity across Europe and/or the diversity of LMIC settings. Relevant stakeholders and end-users of research should be identified and involved throughout the project lifetime. Innovative approaches towards gathering their inputs for the scaling up process should be considered, notably of patients when relevant.

The organisational and resource requirements (data, personnel and financing) necessary for the implementation of the intervention must be tracked and evaluated in detail. The research and system-wide scientific monitoring should allow future users (researchers, healthcare providers, policy makers, and the public) to review the step-by-step, partial outcomes of the intervention, thus facilitating a wider adoption of these practices. **The appropriate contextual, financial and political-economy analysis should be provided.**

The Commission considers that proposals requesting a contribution from the EU of between EUR 4 and 6 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

- A larger group of citizens benefits from the studied health system intervention. **The intervention should lead to improving the functioning and sustainability of health systems, and greater health equity and additional societal benefits.**
- A validated framework and strategy for a large-scale implementation of an effective and safe evidence-based health systems intervention will be available to healthcare providers and policy makers that will facilitate the transferability of these practices.
- **In the medium and long-term, the health systems will be more effective, efficient and equitable; health services are more responsive to the needs of users.**

Type of action	Research and Innovation action
Deadline	**13 April 2016**
Call identifier	H2020-SC1-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3056-sc1-pm-21-2016.html

SC1-HCO-05–2016
Coordinating personalised medicine research

Specific challenge

By providing the right intervention to the right person at the right time, personalised medicine can improve quality of life and contribute to more sustainable healthcare at Member State level. It may drive new and faster development processes and products, providing European life sciences industries with a competitive edge that can secure growth and jobs. Today, development is uneven across and within sectors, regions and Member States due to fragmented activities, insufficient communication and lack of commonly accepted solutions and standards.

Scope

Support the development and operations of a European platform for collaboration between funders of personalised medicine research, possibly based on the International Consortium model. The platform should coordinate research and innovation efforts across borders, regions and countries. **It should foster an interdisciplinary approach to personalised medicine** by actively involving relevant interested parties. **It should develop policies, guidelines, etc. aiming to speed up the development and implementation of personalised medicine (addressing policy-related, economic, and socio-cultural factors).** The platform should aim to create synergies with ongoing activities at European and national level (e.g. research infrastructures, ERA-NETs, personalised medicine pilot projects, EIT Health KIC). It should moreover explore the best use of funds in the implementation of personalised medicine. It should actively disseminate information and best-practice examples and contribute to awareness raising in the medical professions (accelerating the reshaping of academic curricula) and among the general public. The proposal should explore scenarios for long-term sustainability.
The Commission considers that proposals requesting a contribution from the EU of around EUR 2 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

- Improved coordination across and within regional, national and pan-European research funding programmes and initiatives.
- Faster development of personalised medicine approaches through the development of frameworks for research priorities, policies and guidelines aimed at accelerating research and implementation efforts.
- Development of a framework for linking established research efforts, platforms, infrastructures such as biobanks or databases, building synergies between ongoing activities.
- Increased information exchange between sectors and scientific disciplines.
- Increased public awareness and understanding of personalised medicine approaches among the public and the medical professions.
- Improved use of funds in the implementation of personalised medicine.

Type of action	Coordination and support action
Deadline	**13 April 2016**
Call identifier	H2020-SC1-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2449-sc1-hco-05-2016.html

Opportunities for Researchers from the Socio-economic Sciences and Humanities (SSH) in Horizon 2020

Societal Challenge 2

Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy

SFS-29-2017
Socio-eco-economics – socio-economics in ecological approaches

Specific challenge

Ecological or ecosystem-based approaches have emerged as an alternative to farming based on chemical inputs. Farming systems implementing such approaches (eco-functional intensification) are often defined as "low-input", but they generally require more knowledge and labour per hectare than those based on chemical inputs. **To deliver agricultural products for the market and public goods for the society, there is a need for a better understanding of the socio-economic and policy factors that hinder or enhance the development of such systems by identifying the trends and drivers encouraging the involvement of farmers, actors in the value chain, consumers, educators and policy makers.**

Scope

Based on case studies and representative farm typologies, **proposals will involve drawing up an economic, environmental and social comparison of identified production systems** implementing ecological approaches and conventional farms in the same sectors of production. A wide range of systems will be considered, e.g. organic and other low chemical input systems, systems implementing biological control, and diversified *versus* specialised systems. Various sectors will be covered, e.g. arable crops, livestock, vegetables and fruits, vineyards, agro-forestry, mixed farming integrating crop and livestock systems and/or multipurpose breeds. Different strategies will be compared, e.g. pursuing economies of scale in the conventional systems *versus* the economies of scope proposed for some ecological approaches. **Economic performance and delivery of public goods will be evaluated** on the basis of different indicators at farm, farm-group and territorial levels. **Specific emphasis will be placed on analysis of the labour productivity in terms of the amount and value of private and public goods produced. Incomes in the different systems will be analysed on the basis of market and public payments. Issues related to gender differences and demographic characteristics and patterns in farming communities should be investigated if relevant.**
The Commission considers that proposals requesting a contribution from the EU of up to EUR 5 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Expected impact

- improved integrated capacity and method to assess the sustainability of different agro-ecological approaches;
- **increases in productivity, delivery of public goods and job creation** through improved agro-ecological approaches and market and policy incentives; and
- **strengthened transdisciplinary research and integrated scientific support for relevant EU policies and priorities** (Common Agricultural Policy, Water Framework Directive, climate change objectives, jobs, etc.).

Type of action	Research and Innovation action
Deadline	**1st stage - 14 February 2017** **2nd stage - 13 September 2017**
Call identifier	H2020-SFS-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/6053-sfs-29-2017.html

SFS-34-2017
Innovative agri-food chains: unlocking the potential for competitiveness and sustainability

Specific challenge

The research will provide in-depth insight into linkages and interactions between agri-food chain stakeholders, includ... understanding of their perception and behaviour with respect to sustainability objectives and cooperation, potentially result... in the design of new processes leading to new business models and better performing value chains. A holistic approach... improving mutual understanding and cooperation between value chain stakeholders (identifying incentives and barriers, a... strategies and tools, e.g. technologies to overcome them) is to be explored, helping to create favourable conditions... cooperation, co-creation and innovation within value chains. **The concept of social innovation and ways of measuring... throughout the value chain should be explored, taking into account the engagement of society**. **A plethora of policies a... regulatory requirements influencing food production and consumption should be explored, and their implications as rega... creating favourable overall conditions for cooperation and innovation along the food chain**. Proposals should fall under... concept of the multi-actor approach.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 6 million would allow this spec... challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of propos... requesting other amounts.

Expected impact

The project results are expected to:

- enhance the capacity of actors within agri-food chains to **design new processes leading to new business models and... more efficient, equitable, sustainable and better performing value chains**;
- enhance the innovation potential of the European agri-food chains in terms of adapting to change and increase their... competitiveness, sustainability and resilience;
- strengthen farmers' position in value chains through innovative approaches that enhance transparency, information... flow and management capacity; and
- limit the negative impacts of agri-food chains on the environment, climate and health.

Type of action	Research and Innovation action	
Deadline	**1st stage - 14 February 2017**	**2nd stage - 13 September 2017**
Call identifier	H2020-SFS-2016-2017	
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5149-sfs-34-2017.html	

SFS-35-2017
Innovative solutions for sustainable food packaging

Specific challenge

In recent decades, there has been much research into innovative food packaging technologies and solutions (e.g. active, intelligent, recyclable, easy-to-use, organic, antibacterial). This includes research aimed at reducing the environmental footprint of packaging material, increasing the shelf-life of food and developing food spoilage indicators, improving product design, optimising process efficiency, and reducing the need for chemical preservatives while maintaining the nutritional and sensorial properties of food. In spite of the progress made, much remains to be done to overcome the barriers to market uptake of many promising technologies.

Scope

Proposals should clearly address the problems associated with the scaling-up and commercialisation of eco-innovative solutions to packaging in a **developing framework of social, economic and environmental conditions**. Activities should aim to produce plans and arrangements or designs for new, modified or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, pilot projects, large-scale product validation and market replication. Proposals may, if necessary, include limited research and development activities. **If there are clear market failures or cultural or behavioural barriers to overcome, proposals may comprise activities such as validating the benefits for users/buyers, validating technical and economic performance at system level**, validating standards, and activities to prepare market uptake, **ensure consumer acceptance** and optimise access to and the dissemination of results. **Work is expected to benefit from contribution of social sciences** and a gender approach. Participation of all relevant stakeholders in the food production and supply chains is encouraged. Demonstration activities will require the involvement of packaging and food processing companies, retailers and civil society organisations to bridge the gap between ideas that have been developed and their practical implementation.

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

Expected impact

With a view to supporting the transition from a linear to a circular economy, proposals should show how some, or all, of the following impacts will be achieved:

- wider and faster deployment of innovative, user-driven, packaging solutions resulting from greater industry and **consumer acceptance**, and higher visibility of innovative solutions, overcoming the barriers to market uptake.
- reduced waste in both food and packaging materials, and its negative impacts on the environment (e.g. resource utilisation, greenhouse gas emissions, pollution).
- strengthening of the EU's position in manufacturing, improving competitiveness as well as opportunities for growth, diversification and job creation for the EU food and packaging sector in general, and SMEs in particular.
- **strengthening the European food value chain through continued support to product quality, contributing to consumer trust and increased consumption**.
- support for the transition from a linear to a circular economy.

Type of action	Innovation action
Deadline	**14 February 2017**
Call identifier	H2020-SFS-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/6065-sfs-35-2017.html

SFS-39-2017
How to tackle the childhood obesity epidemic?

Specific challenge

Childhood obesity is one of the most serious public health challenges of the 21st century and its prevalence has increased at an alarming rate in the last decades. The main problem is that overweight and obese children are likely to remain obese in adulthood and more likely to develop noncommunicable diseases like diabetes and cardiovascular diseases at a younger age. An integrated EU approach to help reduce the impact on health of poor nutrition, excess weight and obesity is a political objective. A wide range of factors interacting at various levels are known to be associated with obesity. Overweight and obesity, as well as their related diseases, are largely preventable. Starting from an early age, diet and lifestyle have a strong impact on health throughout life. Therefore, the prevention of childhood obesity needs to be given a high priority.

Scope

Within the context of improving the health of citizens and promoting sustainable economic growth, the main objective is to reduce childhood obesity and its comorbidities effectively. Proposals should focus primarily on specific target groups in the young (e.g., during pregnancy and foetal development, in infants, toddlers, most vulnerable groups in children, adolescents). **To better understand the complex interactions between the factors influencing obesity in individuals and populations, it is necessary to combine the approaches and expertise from different disciplines** (e.g. (epi)genetics, molecular biology, microbiome, gut-brain signalling, physiology, nutrition, physical activity sciences, information and communication technology, **social sciences and humanities, education**, environment, architectural and urban design, **psychology**). **Proposals should consider a range of geographic, socio-economic, behavioural and cultural factors**. Proposals should aim at innovative and efficient strategies, tools and/or programmes for promoting sustainable and healthy dietary behaviours and lifestyles. Proposals should reflect and build on existing initiatives and platforms and should provide a robust science-based impact assessment of the tools, strategies and/or programmes delivered for further consideration by policy makers. **Tackling this societal challenge requires both interdisciplinary and multi-actor approaches** engaging academics, policy makers, civil society and relevant industry and market actors. The gender dimension in the research content shall also be taken in account. In line with the strategy for EU international cooperation in research and innovation, international cooperation is encouraged, in particular with the US, Australia, New Zealand and Canada. Proposals should fall under the concept of the 'multi-actor approach'.
The Commission considers that proposals requesting a contribution from the EU of up to EUR 10 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Expected impact

In the effort to tackle the childhood obesity epidemic, proposals should show how some, or all, of the following impacts will be achieved:

- **Provide an understanding of which factors are involved and how they influence the childhood obesity epidemic**.
- Provide innovative, efficient, effective, scientific evidence-based and ready-to-use tools, strategies and/or programmes to improve sustainable and healthy dietary behaviour and lifestyles in children.
- Transfer the generated knowledge and innovation to relevant stakeholders.
- Strengthen interdisciplinary research approaches and foster participatory and inclusive multi-actor approaches for long-lasting implementation of the results obtained.

Type of action	Research and Innovation action	
Deadline	**1st stage - 14 February 2017**	**2nd stage - 13 September 2017**
Call identifier	H2020-SFS-2016-2017	
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/6060-sfs- 39-2017.html	

SFS-40-2017
Sweeteners and sweetness enhancers

Specific challenge

In recent decades, sweeteners and sweetness (flavour) enhancers (S&SEs) have become key ingredients in food produced and consumed in the EU, and exported to and from it. Because of their diversity (natural/artificial, geographical origin, processing, caloric content, etc.), S&SEs are used in different foodstuffs and food processes and in different dosages. However, information is lacking about new and emerging S&SEs throughout the agri-food chain, (e.g. their potential use in single or multiple food (ingredient) production chains, traceability, **production and/or processing (cost) efficiency**, safety and quality risks/benefits (for single or combined use), allergenicity and sustainability). The interaction of all these factors influences the role of S&SEs in a healthy diet and the fight against obesity. In addition, the toxicological impact of high doses, combined effects and the prolonged use of S&SEs are still unknown and the health-related aspects need further investigation.

Scope

Proposals should focus on health, obesity and safety aspects (including combined/prolonged use, metabolic effects and gut brain signalling, neuro-behaviour, and effects on the microbiota) associated with S&SEs. Activities indicated in the proposals should explore the sustainability of the whole value chain (ingredient sourcing, production/processing, **market opportunities for new and emerging S&SEs)**. **They should investigate consumer perceptions and preferences giving proper consideration to the underlying physiological, psychological and socio-economic drivers**. **The approach should be interdisciplinary and should give careful and detailed consideration to the regulatory framework.** Proposals should also include dissemination to all stakeholders as well as the food industry, including small and medium-sized enterprises (SMEs). Where relevant, proposals should address gender-specific aspects and the gender dimension in the research content shall be taken into account.
The Commission considers that proposals requesting a contribution from the EU of up to EUR 9 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Expected impact

With the objective of combating obesity, while improving sustainable food security in the EU, proposals should show how some, or all, of the following impacts will be achieved:
- Promote healthy diets and contribute to combating obesity while improving sustainable food security in the EU.
- Stimulate market uptake (with a specific focus on small and medium-sized enterprises) of new, healthy and sustainable S&SEs.
- **Strengthen the EU economy with a move towards more sustainable and future-oriented business practices**.
- Dissemination to EU food, health and food ingredient stakeholders, especially to food-related SMEs.
- Evidence-based policy inputs on health, environmental and food safety issues.

Type of action	Research and Innovation action	
Deadline	**1st stage - 14 February 2017**	**2nd stage - 13 September 2017**
Call identifier	H2020-SFS-2016-2017	
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/6055-sfs-40-2017.html	

SFS-48-2017
Resource-efficient urban agriculture for multiple benefits – contribution to the EU-China Urbanisation Partnership

Specific challenge

With increasing urbanisation, massive daily flows of agricultural products, water and energy coming from rural/remote areas to cities generate high amounts of heat, CO2, waste water and other waste. In certain contexts, **urban agriculture has been shown** to improve food security and **to bring economic, environmental and social benefits to cities**. Given the diversity of urban agricultural systems emerging worldwide, there is a need to **demonstrate and assess how technological and social innovation in urban agriculture can help overcome the shortcomings of urban food systems** while providing cities with other ecosystem services (e.g. mitigating climate change, closing nutrient cycles) and improving the resilience of urban areas.

Scope

The proposals should develop innovative integrated urban farming systems that use resources (e.g. space, energy, water, nutrients) more efficiently and re-use or recycle heat, water, CO2, waste or by-products from urban sources (e.g. industry, households) for horticultural production (e.g. fruits, vegetables, herbs, sprouts, mushrooms, algae, ornamental trees and plants). The production and use of renewable energies (e.g. solar/wind energy, biogas) in these farming systems will also be investigated. Activities should showcase several resource-efficient production systems in open or controlled environments, thereby providing a demonstration (at TRL 6-8) for the production of safe and high-quality products in different urban spaces (e.g. rooftop/vertical farming, individual/collective gardens, other unused spaces).

The work should be carried out at least in one European city and in one Chinese city. Breeding activities are not in the scope. **The work will support the development of innovative production systems** both conventional and organic and their associated value chains in cooperation with relevant local actors and stakeholders, **and according to business models that target economic and social benefits.** Attention will be paid to land use issues in particular in relation to urban-rural interactions (e.g. urban sprawl dynamics). **Evaluation methods of multi-functional urban agriculture should be used to assess** the contribution of these systems and value chains to cities' food security, and **their economic, environmental and social impacts on the urban communities. A cost-benefit analysis of urban farming production systems and associated value chains** should compare these to other options (including peri-urban and rural agriculture). Policy recommendations and best-practices guides for sustainable urban farming systems should be produced and knowledge platforms promoted.

Proposals should fall under the concept of the 'multi-actor approach' targeting all relevant actors such as researchers/technology providers, public authorities, and private actors (e.g. restaurants, retailers, urban farmers, real estate businesses) and promote the engagement of urban communities. SME participation is encouraged.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 7 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Contributions for Chinese participants will come in addition and will be made available by China.

Expected impact
Applicants will gauge the expected impact of the project as regards:
- the creation of shorter supply chains for safe, high-quality food and other horticultural products that reduce European and Chinese cities' ecological footprint by limiting losses and energy in transport and contribute to their food security;
- resource-efficient low-carbon urban farming systems that:
    - consume low amounts of water, energy, fertilizers, pesticides and space;
    - use waste heat, CO2, waste and rain water and other waste or by-products from urban source, contributing to the development of the circular economy;
    - minimize environmental impacts;
- **improved knowledge of various business models for urban farming, including a thorough understanding of their potential for development, performance and impact on urban food systems in economic, environmental and social terms, and success factors or reasons for failures**;
- increased cooperation at international level, in particular involving exchanges of knowledge and best practices between the EU and China.
- In the longer term, the results should contribute to a more sustainable and resilient urban development, in particular via the provision of ecosystem services (e.g. reduced air pollution, better water retention thus limiting floods, biodiversity, carbon sinks, recreation, greener urban landscapes), **social cohesion** and jobs creation.

Type of action	Innovation action
Deadline	**14 February 2017**
Call identifier	H2020-SFS-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/6066-sfs-48-2017.html

BG-06-2017
Interaction between people, oceans and seas: a strategic approach towards healthcare and well-being

Specific challenge

The interaction between people, oceans, seas and coasts is a broad domain with significant impacts on human health and well-being. However, it remains fragmented, poorly understood and underexploited. As coastal populations grow worldwide, not only due to permanent dwellers but also due to increasingly larger number of tourists, the determinants and impacts of this link between oceans and people become more relevant. On the one hand, the seas provide benefits namely through food, feed and positive impacts on overall wellness. On the other hand, the risks associated with the marine environment include chemical and physical pollutants of anthropogenic origin, harmful algal blooms, and countless marine microorganisms that lead to a still poorly assessed proportion of human morbidity and mortality. Therefore, the challenge is to **coordinate the existing multidisciplinary research knowledge and resources,** including distributed infrastructures, across Europe. This would make it easier to take advantage of the benefits and to better manage the risks of the interaction between oceans and people using an ecosystem-based approach and to formulate evidence-based policies that can benefit citizens as well as achieving good environmental status.

Scope

Proposals should include a plan for the creation of a multi-stakeholder forum that would make it possible to better understand the potential health benefits of marine and coastal ecosystems including in **economic terms**, anticipate new threats to public health more effectively, identify ways of improving ecosystem services that the marine environment can provide and contribute to reducing the burden of diseases caused by the interplay between marine-degraded environments and human behaviour. This forum is expected to **issue a strategic research agenda based on data covering the biological, cultural and socio-economic dimensions** of the interaction between oceans and human health that can ultimately impact morbidity and mortality in the general population. Data should encompass sex and gender differences in the populations studied. Data should be assessed through an active involvement of diverse stakeholders across Europe, including local marine communities, civil society, industry, and public authorities.

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

Projects funded under this topic will by default participate in the Pilot on Open Research Data in Horizon 2020, with the option to opt-out, as described in the introduction.

Expected impact

In order to support key EU policies, in particular those directly related to the marine and maritime sectors, such as the EU Blue Growth Agenda, the Blue Tourism Communication and the Marine Strategy Framework Directive, proposals are expected to:

- Create a multi-stakeholder forum that issues a strategic research agenda for oceans and human health, based on new scientific and/or technological evidence and best practices across different geographical locations and climates.
- Highlight novel, cost-effective solutions or interventions that enable effective policy making that aims to maximise health benefits and minimising risks derived from exposure to marine and coastal ecosystems.
- Actively involve local communities across different European maritime regions, comprising civil society, industry, public authorities in data supply, knowledge generation and solution implementation processes.
- Improve global cooperation around oceans and human health.
- Improve the professional skills and competences for those working and being trained to work within the blue economy.

Type of action	Coordination and support action
Deadline	**14 February 2017**
Call identifier	H2020-BG-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5124-bg-06-2017.html

BG-08-2017
Innovative sustainable solutions for improving the safety and dietary properties of seafood

Specific challenge

The seafood production and processing industry contributes substantially to food security, employment and trade in regions where the activity takes place. To safeguard and strengthen this and make the activity more sustainable, seafood production should be market-driven and consumer-responsive, addressing challenges such as increasing consumer awareness of food quality and safety traceability and animal welfare. Ensuring the sustainability of the seafood processing industry involves not only innovative technologies that could mitigate environmental damage but also **securing its economic viability and taking account of the consumer imperatives behind them.** One way of ensuring the sustainable production and processing of nutritious and safe seafood products is through the demonstration and first application in the market of eco-innovative, sustainable processing solutions of marine and aquaculture-derived food products and nutrients.

Scope

Proposals should build on state-of-the-art research insights from EU and other funded projects in this field, with a specific focus on food safety (from harvesting to the final products). They should aim to **generate new knowledge to develop commercial solutions for improving the socio-economic and environmental sustainability of the seafood production and processing industry,** while also contributing to product quality and safety. Activities should directly aim to produce plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, and large-scale product validation, all with a view to paving the way for subsequent market replication and uptake by consumers. **Proposals may take into account impacts across different locations and population segments**, as well as the specificities of different types of seafood, also in terms of nutrition. **Work is expected to benefit from the contribution of social sciences wherever applicable**. Where relevant, proposals should address gender-specific aspects, and the gender dimension in the research content shall be taken into account. Aspects of traceability, authentication and certification of EU seafood products and labels of quality should be conveniently addressed. The participation of SMEs that will benefit from the intellectual property and/or from the commercial use of the project outcomes is encouraged.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 7 million would allow this challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Projects funded under this topic will by default participate in the Pilot on Open Research Data in Horizon 2020, with the option to opt-out, as described in the introduction.

Expected impact

To contribute to EU food safety common standards and legislation for seafood products and nutrients, proposals are expected to:

- Ensure that eco-innovative solutions for the sustainable production and processing of marine and aquaculture-derived food products and nutrients are used more widely, as a result of greater user acceptance, higher visibility of innovative solutions and the creation of scalable markets.
- Improve the competitiveness of the EU seafood sector, and increase opportunities for growth, diversification and job creation for the sector in general and SMEs in particular.
- Benefit consumers by allowing them to make better-informed seafood choices.
- Increase the availability of healthier seafood, which will improve consumers' diet and health.
- Improve the professional skills and competences of those working and being trained to work within the blue economy.

Type of action	Innovation action
Deadline	**14 February 2017**
Call identifier	H2020-BG-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5128-bg-08-2017.html

BG-11-2017
The effect of climate change on Arctic permafrost and its socio-economic impact, with a focus on coastal areas

Specific challenge
Arctic permafrost contains twice as much carbon as the atmosphere, stored in the upper metres of the ground. Thawing of permafrost may trigger the release of this carbon and its transformation to greenhouse gases, reinforcing global warming (permafrost carbon feedback). Moreover, permafrost coasts make up 34% of the world's coasts. Increasing sea-level in combination with changing sea-ice cover and permafrost thawing expose these coastal areas to higher risks. Knowledge gaps exist in relation to the transfer of material - including organic matter - from land to sea and its fate, with the consequence that processes of accumulation and/or subsea permafrost degradation are not accounted for in global climate and Earth system models. The pressing challenge is to **understand the impact of permafrost thawing on climate change and its implications for the environment, for the indigenous populations and the local communities**. Finally, permafrost thawing affects the stability of built infrastructure.

Scope
Actions should assess the impact of permafrost thawing on Arctic (natural and human) coastal systems and its effect on the availability/accessibility of resources, the stability of infrastructure, the growth of potential new economic activities, as well as on pollution and health. **The research should employ a holistic and trans-disciplinary approach and in co-operation with stakeholders. It should consider the needs of and the impacts on indigenous populations, local communities and economic actors** operating in this vulnerable region in the sustainable development context. Actions should address key processes of environmental change and develop appropriate adaptation and mitigation responses with an emphasis on permafrost at the interface between land and water.

Proposals should develop relevant forms of communication for EU (and possible national) services to adequately disseminate results that could be used for policy action. **Trans-disciplinary and participatory approaches, including social sciences and humanities, in the process are considered necessary**. In line with the strategy for EU international cooperation in research and innovation, actions will contribute to implementing the Transatlantic Ocean Research Alliance. Due to the specific challenge of this topic, in addition to the minimum number of participants set out in the General Annexes, proposals should benefit from the inclusion of partners from the USA and from Canada. International cooperation with partners from other Arctic and non-Arctic third countries is also strongly encouraged.

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

Projects funded under this topic will by default participate in the Pilot on Open Research Data in Horizon 2020, with the option to opt-out, as described in the introduction.

Expected impact
- Improve the capacity to predict the impacts of permafrost thawing, both sub-sea and on land, identify and reduce uncertainties, and quantify key processes not currently or poorly represented in predictive models;
- Develop capacity to manage risks and to take advantage of opportunities emerging from Arctic changes;
- Promote the engagement of and interaction with residents of Arctic coastal communities and indigenous societies and **develop a legacy of collaborative community involvement with scientific, economic, and societal actors and stakeholders** on the development of Responsible Research and Innovation agendas that meet their concerns and expectations.
- Contribute to the ongoing and possible future OSPAR actions in Arctic water
- Improve the professional skills and competences for those working and being trained to work within this subject area.

Type of action	Research and Innovation action
Deadline	**14 February 2017**
Call identifier	H2020-BG-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5126-bg-11-2017.html

RUR-02-2017
Coastal-rural interactions: Enhancing synergies between land and sea-based activities

Specific challenge

At the interface of land and sea, coastal areas are environmentally fragile but also attractive areas with unexploited business opportunities. Land-based activities in coastal regions and even beyond, in upstream river-basins, influence the availability and quality of fresh water reaching the sea and, as a consequence, coastal and sea-based economic activities (including tourism) and the exploitation of marine resources. Equally, coastal development can have positive or negative effects on hinterland development, e.g. tourism-related pressure on land availability. Mainstream agro-environmental policies tend to fail when it comes to lowering nutrient load on the shorelines while rural economies do not always benefit from the economic development on the coast. There is a need to explore **how territorial governance approaches and cross-sectoral economic development approaches could deliver mutually beneficial impacts** for rural territories and coastal areas and seas which cannot be achieved in other ways, in particular as regards mitigating the impact of land-based activities on coastal water quality.

Scope

Combining environmental, agricultural and socio-economic research, proposals will identify and analyse interactions between land (coast and hinterland) and sea, identify the various components of local economies at the interface of land and sea and analyse their respective importance and short, medium and long-term development trends taking into account market, environmental and climate forecasts. The analysis should provide an inventory of the positive and negative externalities of different activities, including the effect they have on each other, and consider whether solutions exist to mitigate negative externalities and enhance positive externalities, listing motivations and barriers to change for the types of player involved. The analysis should highlight potential cross-sectoral interactions and innovation that could emerge from greater cooperation between sea-based and land-based businesses or organisations.

The analysis should cover a representative set of coastal areas or regions across Europe varying according to size and geographical, environmental, socio-economic, institutional and administrative conditions (regional, inter-regional, macro-region, cross-border). Interactive research approaches should be used to engage with local businesses and citizens and elaborate options for cooperation, networking and integrated governance seeking to enhance partnership. Activities could usefully build on a review of positive (and perhaps negative) examples from different areas, including **innovative business models** integrating land-based and sea-based production with simultaneous benefit for the local economy, local jobs and the environment both on the coast and in the hinterland. Proposals could seek to create long-lasting relationships within and between the case study areas benchmarked by the project in order to generate knowledge exchange.

Concrete outputs would include a set of tools which could be used to foster synergistic relationships in different coastal areas of Europe, and concrete and operational governance models to be applied. The potential use of instruments provided by the European Structural and Investment funds for the period 2014-2020 should be explored. Communication and dissemination activities should be carefully targeted and planned to reach out to all potentially interested areas beyond those participating in the consortium. Training material and coaching activities may be envisaged. Some cooperation activities with projects financed under topic RUR-1-2016 could be included.

Proposals should fall under the concept of the 'multi-actor approach' and involve farmers groups and other land and sea-based businesses, and economic and local development bodies. Engaging with managing authorities of European structural and investment funds during the project would help increase implementation of the project outcomes.

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

Expected impact

Results are expected to contribute to the long-term improvement of sea water quality combined with the creation of added value and jobs in coastal areas and hinterland through:

- **development of a transferable set of tools and indicators allowing the quantitative and qualitative description of a wide variety of economic, environmental and social land-sea interactions, thus improving understanding of economic and social interactions in coastal areas, serving a more evidence-based policy-making at local and regional level**;

- a thorough understanding of the factors (barriers and motivators) influencing behaviour and solutions to enable joint actions;
- increased potential for job and added-value creation in coastal areas thanks to the identification of new business opportunities stemming from closer cooperation between land- and sea-based economic operators; and
- reduced negative externalities from land-based activities in the regional hinterland on sea-based activities thanks to better economic cooperation and integrated governance.

The project may lead to the creation of longer-term relationships between coastal areas serving as European flagships for rural- coastal synergies and ensuring longer and wider dissemination.

Type of action	Research and Innovation action	
Deadline	**1st stage - 14 February 2017**	**2nd stage - 13 September 2017**
Call identifier	H2020-RUR-2016-2017	
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5112-rur- 02-2017.html	

RUR-03-2017
Towards 2030 - policies and decision tools for an integrated management of natural resources

Specific challenge

Policies influencing the management and use of natural resources at national and EU levels have evolved considerably in the past decades as underpinning objectives have widened to meet societal needs (food security, environment, energy, climate change, etc.). However, this process has been fragmented and incomplete. In addition the technology and information available to decision-makers have advanced significantly in this time. To ensure sustainable management of natural resources in the long term there is a **need for an integrated framework that addresses all society's objectives appropriately by incentivising actions / behaviours / investments contributing to desirable targets**. Appropriate decision-support tools are needed to help implement such an integrated and systemic approach.

Scope

Activities will take place on various geographic scales reflecting levels of policy / use relevance, from regional to EU levels. Investigations relating to both policy and decision tools will be fully participatory so as to ensure the involvement of the society at large. **Policy development will take account of all current and expected major societal needs as regards natural resources and their use in terms of products and other types of goods, services and funct**ions. Decision-support tools and models will help prioritise multiple resource uses (e.g. land, water) at various geographic scales (meso level and related regional strategies + national/EU level for general policies), taking advantage of existing databases and tools and what is possible on the basis of modern capabilities. Activities will cover agricultural and forestry land. While focusing on Europe, proposals are encouraged to draw on good examples from elsewhere.
The Commission considers that proposals requesting a contribution from the EU of up to EUR 8 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Expected impact

The project results are expected to:
- improve knowledge of land and water resource availability and use at various geographic scales;
- improve decision support tools for the management of land and water resources; and
- **provide a coherent and integrated policy framework** for the management of natural resources at regional / national / EU levels.

Type of action	Research and Innovation action	
Deadline	**1st stage - 14 February 2017**	**2nd stage - 13 September 2017**
Call identifier	H2020-RUR-2016-2017	
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5111-rur-03-2017.html	

RUR-05-2017
Novel public policies, business models and mechanisms for the sustainable supply of and payment for forest ecosystem services

Specific challenge

Regional differences with respect to the forest management systems implemented and long production cycles characterise the forestry sector in the EU. Forests generally provide for a range of goods and services, some valued by existing markets (i.e. wood and non-wood products), others not. Of the latter, some are "public goods" (i.e. they are non-excludable (everyone benefits from them) and are not subject to consumption rivalry), such as carbon sequestration and landscape, while others are "common-pool resources" (i.e. they are non-excludable goods but subject to competition in use), such as recreation or water supply. The regulatory framework is divided into forest polices and forest-related policies (e.g. rural development, climate, biodiversity, and energy) which are not necessarily mutually reinforcing. The responsibility for forest policies ranges from EU level (monitoring, protection, land use, land use change and forestry (LULUCF) reporting, etc.) to Member State or federal state level (inventory, planning, management, etc.). If the policy or market fails – a recognised threat – the undesired outcome is suboptimal provision of ecosystem services. **The sustainable provision of ecosystem services therefore requires policy coordination, and the use of novel policies, business models and mechanisms**, while taking into account the production of wood and non-wood forest products. Several EU Member States, with the help of the European Commission, are currently mapping and assessing the state of forest (and other) ecosystems and their services in their respective national territories as part of the 'Mapping and Assessment of Ecosystems and their Services (MAES) exercise. There is now significant scope to capitalise on these efforts and for greater implementation of the knowledge they have generated in practice.

Scope

Proposals should aim to develop novel public policies, business models and mechanisms to "internalise" the proven socio-economic value of forest ecosystem services ("externalities") and contribute to their sustainable supply, with proper consideration given to the multifunctional role of EU forests. **Proposals should consider the holistic basket of economic, socio-cultural, recreational and environmental services**, from both the supply and demand side, and the trade-offs between them. They should aim to close the gap between academic work, associated policy recommendations, and practice on the ground, and help achieve public acceptability. The role of active forest management, which incurs reduced income and/or higher investment, needs to be emphasised. Specifically, there is a need to develop mechanisms for the payment of ecosystem services at the appropriate level of forest management and administration. The pilot testing of the proposed mechanisms, which may combine public policy tools with business models, is encouraged. **Proposals should include contributions from the social sciences and humanities**, fall under the concept of the "multi-actor approach" and seek public engagement with regard to the groups of stakeholders included in the consortia and the proposed business models/mechanisms.

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

Expected impact

Proposals should show how some, or all, of the following impacts will be achieved:

- **Enhanced coordination in policy making together with the development of novel policies and business processes**, translated into increased incentives for forest owners/administrators to sustainably supply essential ecosystem services, such as carbon sequestration, biodiversity conservation, water regulation, soil and nutrient regulation, landscape and recreation, while maintaining production of wood and non-wood forest products.

Type of action	Innovation action
Deadline	**14 February 2017**
Call identifier	H2020-RUR-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5100-rur-05-2017.html

RUR-09-2017

Business models for modern rural economies

Dedicated Topic

Specific challenge

The modernisation of rural economies depends on the capacity of rural businesses to cooperate successfully to form efficient value chains which will deliver competitive products and services, high-quality and diverse jobs, and resilience to global economic and climate changes. The greater interest being shown in regional and local economies, resource-efficient and low carbon value chains or short supply chains provides opportunities to rethink and improve value chain organisation so as to turn specific assets into economic, environmental and social benefits, including through enhanced valorisation and optimisation of ecosystem services. There is a need to identify business models that have the most potential to empower rural communities to take advantage of these opportunities.

Scope

Building on the outcomes of past European projects on rural economic development and rural jobs, proposals will identify innovative business models that are developing in rural areas, have significant potential to create added value, social cohesion and jobs, and are likely to be upscaled to or replicated in other areas, taking into account the diversity of conditions in different areas. Proposals should undertake socio-economic analyses to identify, describe and benchmark different business models in terms of starting conditions, obstacles faced, enabling factors, financing mechanisms, generation of added value, jobs and other potential environmental and social benefits, gender issues, attractiveness to young workers, and the distribution of the value generated, exploring the concept of shared value. Particular attention should be paid to models that foster a more sustainable mobilisation of resources, improved cooperation between operators along the value chain and/or across traditional and developing sectors (e.g. via clusters/platforms), and lead to new products or services, and the recycling or up-cycling of materials. Proposals should consider food, bio-based value chains and other forms of rural business or service, in particular those based on digital technologies or valorisation and optimisation of ecosystem services. Proposals should produce practical and business-oriented tools, e.g. a collection of business cases, targeting new entrepreneurs who would like to set up businesses in rural areas and seek guidance and benchmarks on similar businesses to draw up their business plans.
Proposals should fall under the concept of' the multi-actor approach', engaging relevant actors such as businesses/entrepreneurs, business or economic development organisations and innovation support services, involved in development of these new business models. Communication and dissemination activities should be carefully planned and targeted to reach audiences likely to take up, replicate and adapt the business models identified.

Selected projects should cooperate closely to maximise impact across Europe (e.g. production of common tools for entrepreneurs and stakeholders, joint analysis and recommendations, joint dissemination plans).
The Commission considers that proposals requesting a contribution from the EU of up to EUR 4.5 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Expected impact

This action contributes to the modernisation and sustainable growth of rural economies. Applicants will measure the expected short-term impact of the project on the basis of:
• improved tools for entrepreneurship in rural areas, in particular with a database of business cases and supportive environment (e.g. clusters/platforms, technical/scientific services and infrastructure, advisory services, funding opportunities); and
• improved knowledge of business models emerging in rural areas, including a thorough understanding of their potential for development, performance and interest in economic, environmental and social terms and success factors or reasons for failures.

In the longer term, the results will:
• increase the potential for rural economic diversification, added value and job creation in a variety of rural areas thanks to the dissemination of promising business cases;
• make rural economies and societies more resilient to global changes; and
• improve the delivery of ecosystem services resulting from innovative forms of valorisation.

Type of action	Research and Innovation action	
Deadline	**1st stage - 14 February 2017**	**2nd stage - 13 September 2017**
Call identifier	H2020-RUR-2016-2017	
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5108-rur- 09-2017.html	

RUR-13-2017
Building a future science and education system fit to deliver to practice

Specific challenge

Transition towards more sustainable agriculture, forestry, food and bio-based value chains, equipped to face the challenges ahead, requires a renewal and strengthening of the technical and soft skills of all concerned. Along with ensuring delivery of peer-reviewed output from practice-oriented research, this will contribute to an efficient and interactive agricultural knowledge and innovation system (AKIS).

In 2010, 71% of European farm managers were operating on the basis of practical experience only. Education levels vary greatly depending on country, farm manager's age and gender, or farm structures, and this can hamper innovation. As the proportion of farmers with secondary and tertiary education rises, **education will play an increasing role in farmers' capacity to co-create and implement new techniques and practices, anticipate and adapt to legislative, policy, market and environmental changes, design innovative ways of marketing their products and take part in interactive innovation systems and networks.** New production processes and new types of supply chain in the wood, food and bio-based industry sectors also create a business demand for new skills. On the science side, there may be a shortage of researchers and capacities in fields of science of crucial importance for sustainable agriculture which are under-developed or unattractive in Europe.

While basic research remains necessary, a crucial challenge is also to remove bottlenecks to the delivery of practice-oriented research to end-users. Current research evaluation systems are based mainly on scientific publications and give little incentive, appreciation or reward to scientists willing to invest in practice-oriented research. Some front-runners are engaging in new ways of rating such research activities that deserve to be assessed, applied to agriculture and may be upscaled to a wider range of research providers and funding bodies.

Scope

Proposals will involve the production of a challenge- and foresight-based inventory of skills that will be needed in agriculture, forestry and related value chains, covering primary producers, advisors, industry, businesses and scientists. **Proposals will review how current science, education and training systems in a wide and varied range of EU Member States (and possibly third countries) cater for these needs, seeking to draft roadmaps for the improvement of curricula, learning methods and long-term interaction between education, science and economic players**. Particular attention should be paid to soft (e.g. entrepreneurial, intermediation and communication) skills in particular for farmers, advisors and researchers, and technical skills related to new practices or processes and sustainability requirements in scientific fields of importance for the future.

Needs should be differentiated in the light of the variety of farming systems, current trends in structural change, emerging business models in farming and subsequent value chains and geographical conditions. **Proposals should analyse how education and training systems could improve**, in particular by attracting more farmers and other players to engage in sufficient education and lifelong learning and by ensuring that these systems are fit for purpose and permanently updated. Piloting of new curricula and training methods in some of the participating institutions could be considered. The effectiveness of existing EU policy instruments on education and training in this area should also be assessed and improvements proposed. Proposals will take into account relevant EU initiatives to ensure potential synergies (e.g. Erasmus+, Marie Skłodowska-Curie actions, Knowledge and Innovation Community Food for Future, etc.).

Furthermore, proposals should develop an operational system for encouraging and measuring performance and reviewing outputs of interactive innovation and practice-oriented research, with a view to improving their effective delivery and the uptake of best practices from the field. They should build on front-running initiatives and assess different options currently being tested in the EU or elsewhere (e.g. the EIP-AGRI common format). Activities should deliver practical methodologies and criteria for i) measuring performance of research providers and projects with regard to their outputs for practice; and ii) translating academic knowledge into practical knowledge easily understandable by end-users. To this end, proposals should develop a peer-review system for research outputs ready-made for delivery to farmers and foresters, exploring all components required to operate such a system.

Proposals should build on the analysis to make further policy recommendations on how to develop education, training and science in the future. **Proposals should fall under the concept of the 'multi-actor approach'** and be highly participatory, **involving specialised education bodies**, farming/forestry sector representatives and advisors from the outset of project development to maximise bottom-up elaboration and final uptake of project results. It may be useful to involve authorities in charge of curriculum development and measuring research impact. Communication and dissemination activities should reach

out far beyond the consortium to improve the uptake of research results.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 7 million allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Expected impact

This action should improve the performance of science and education systems and their benefits for agricultural and forestry sectors and related industries. The following impacts are expected:

- **a shared inventory of the skills needed for a transition to more competitive and sustainable agriculture and related value chains, serving as a basis for continuous and longer-term cooperation between education bodies across Europe, leading to intensified exchanges and regular updates of the inventory**;
- improved technical and soft skills for farmers, foresters, advisors, industry employees and scientists, translating into better farm management, increased competitiveness, sustainability and resilience to environmental, climate and market changes;
- greater awareness of gaps in research capacities and specific fields of science of crucial importance for sustainable agriculture;
- increased efficiency of agricultural knowledge and innovation systems in the EU thanks to i) improved linkages between education, science and economic players, ii) enhanced capacity of players to interact with one another, and iii) contribution to an institutional shift towards better recognition and rewarding of practice-oriented research;
- improved quality and usefulness of research outputs for the immediate use by farmers, foresters or value-chain businesses, thanks to a peer-review system leading to an improved implementation of research results by end-users and an innovative agricultural sector; and
- recommendations for improved policies for education, agriculture, research and innovation at European, national and regional levels.

Type of action	Research and Innovation action
Deadline	**1st stage - 14 February 2017** **2nd stage - 13 September 2017**
Call identifier	H2020-RUR-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5110-rur-13-2017.html

RUR-15-2017
The benefits of working with others – fostering social capital in the farming sector

Specific challenge

The environmental and economic sustainability of the farming sector depends to a great extent on farmers' and land managers' capacity to develop activities and participate in networks with fellow farmers, groups and other entities or individuals. Despite the benefits of such approaches, farmers' involvement in them is low in a number of European countries, for various reasons. To address this, we need to investigate and find ways of overcoming the constraints and disincentives that impede the development of such approaches in different areas of collective action (productivity, information sharing, sustainability).

Scope

Proposals will primarily cover EU Member States where the level of organisation of farmers and land managers is considered low. Activities **will address constraints on the development of cooperatives/networking activities in particular areas (economic activity, environmental sustainability** etc.) and draw up solutions based on case studies, identified best practices, participatory workshops, etc. Proposals should fall under the concept of the 'multi-actor approach'.

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

Expected impact

The project results are expected to:
- **improve understanding of farmers' attitudes to cooperation and networking**;
- **provide recommendations for policy-makers to foster social capital in the farming sector**;
- lead to higher levels of farmer organisation in the medium to long term.

Type of action	Coordination and support action
Deadline	**14 February 2017**
Call identifier	H2020-RUR-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5102-rur-15-2017.html

RUR-16-2017
Optimising interactive innovation project approaches and the delivery of EU policies to speed up innovation in rural areas

Specific challenge

A number of recent initiatives and instruments for speeding up innovation deserve in-depth exploration. Horizon 2020 and the European Commission's Communication on the *CAP towards 2020* have focused attention on innovation in agriculture and related sectors. The European Innovation Partnership (EIP) "Agricultural Productivity and Sustainability", a new approach under the Europe 2020 strategy, aims to speed up EU research and innovation by linking existing policies, instruments and actors. The agricultural EIP in particular implements the interactive innovation approach which relies on knowledge exchange and the empowerment of all actors concerned, and focuses on getting results implemented in practice. An EU wide EIP network is connecting the EIP Operational Groups funded under rural development programmes and provides interaction with Horizon 2020 projects. Apart from Horizon 2020 multi-actor research projects and thematic networks compiling practice-ready knowledge, other EU and national policies may also contribute to innovation, e.g. the Farm Advisory System, Rural Development funding supporting farm advisory services, knowledge and information actions, LEADER, specific national/regional or particular H2020 instruments etc. All of these contribute to innovation in agriculture and forestry. The challenge is to improve their targeting and interlinking - if and where needed - , and possibly learn from relevant insights from outside Europe.

Scope

Proposals should explore how instruments and approaches under the various policies could be further adjusted and how they contribute to innovation in the agricultural and forestry sector. Learning also from experience at international level, proposals should investigate the design and implementation of interactive innovation projects, on the basis of a substantial number of case studies of interactive projects in a broad range of agriculture and forestry sectors.

An essential part of this topic would **develop detailed best practices/approaches for H2020 multi-actor projects and thematic networks at project level**. On the basis of a series of cases of existing multi-actor projects and thematic networks, proposals should develop best practices for consortia to combine as much as possible both scientific and practical knowledge in their projects and exploit them to the full. Special attention needs to be given to the role of facilitators that mediate between different types of actor and to the particular management/coordination needs of this type of project, with a view to intensifying knowledge exchange between actors. Examples of unsuccessful approaches where project implementation is not delivering as expected are also relevant: **'facts', 'feelings' and group dynamics should be taken into account**. **Activities should investigate how co-creation and co-ownership of project results can be improved and quantified/qualified in order to speed up the use of project results in practice.** Activities will examine how practically/legally to construct consortia with different types of actor, taking into account the different status of the various types of organisations involved (partner, subcontractor, etc). Projects should also explore pathways for involvement of secondary and higher education as actors in interactive innovation projects, including H2020 multi-actor projects, thematic networks and EIP Operational Groups. Furthermore, activities should examine how multi-actor projects and thematic networks can seek synergies and intensify effective linkages with Operational Groups and other interactive innovation projects under national/regional/European policies.
Proposals should fall under the concept of the 'multi-actor approach' involving key actors in the AKIS (farmers, advisors, researchers, research bodies, **social scientists**, managing authorities, network agents, enterprises, etc.) and using the work of the SCAR-AKIS Strategic Working Group, as appropriate. They may include insights from outside Europe.

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

Expected impact

• **a description of supporting mechanisms and governance for a more efficient management of interactive innovation projects, including pathways for improved interaction with existing sectoral, rural and innovation actors and networks** at local, regional, national and EU level and to the Farm Advisory System under the Common Agricultural Policy;
• development of best practices for building and implementing multi-actor project proposals and consortia under H2020, including thematic networks compiling knowledge for practice;
• delivery of a set of good examples of various types of multi-actor research projects and thematic networks which compile practice-ready knowledge and connect successfully with Operational Groups;
• better quantitative and qualitative measurement of scientific efforts impacting agricultural practices and systems, including the impact of the facilitating actors and the involvement of education; and
• **suggestions for public policy governance mechanisms, contractual arrangements and appropriate funding instruments providing for effective interactive projects, enhancing innovation-driven research and advisory services leading to more competitive, sustainable and climate-smart agriculture**.

Type of action	Research and Innovation action	
Deadline	**1st stage - 14 February 2017**	**2nd stage - 13 September 2017**
Call identifier	H2020-RUR-2016-2017	
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/5109-rur- 16-2017.html	

BB-05-2017: Bio-based products: Mobilisation and mutual learning action plan

Specific challenge

Ensuring that research and innovation in bio-based products and processes is not only excellent, but also relevant and responsive to the needs of all actors is important, not least in ensuring the uptake of results. Surveys show that consumers and citizens in general have little awareness and knowledge of bio-based products (BBP). To improve market uptake of bio-based products, shape future research in BBP science, technology and innovation and meet the views and expectations of society, there is a need for a broad, inclusive assessment of the challenges and opportunities at hand.
Multi-actor approaches are needed to identify and address both the risks and different stakeholders' interests and aspirations, in order to maximise the benefits of new bio-based business models within society. Mobilisation of all actors along the value chain is crucial to mitigate the probability of "technology mismatches" (i.e. development of technologies without a corresponding reliable and cost-efficient feedstock supply, or which face insufficient market demand).

Scope

The Mobilisation and Mutual Learning Action Plan (MML) should **ensure the engagement of all relevant groups and tackle innovation related challenges by establishing a multi-stakeholder platform**, gathering a plurality of actors with different perspectives, knowledge and experiences, and maintaining open dialogue between the different stakeholders.
The objective of the platform should be the development and implementation of an Action Plan that would address the challenges of raising awareness of and engaging with the citizens on the bio-based products. Proposals have to be based on and develop the concept of Mobilisation & Mutual Learning Platforms (MML). The design of this platform and its activities should take into account and build on methods developed previously in European projects and initiatives (including consultation processes in the field of bio-based products).
The Commission considers that proposals requesting a contribution from the EU of up to EUR 3 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Expected impact

The direct and sustainable impact of proposals will be:
- **to create networks of specific target groups in order to raise citizens' awareness and understanding of bio-based products**;
- **to create a better framework for new bio-based market opportunities, through broad stakeholder engagement leading to responsible, reliable, and societally acceptable solutions**;
- **to contribute to responsible policy-making, helping to shape further research on bio-based products and improving acceptability of existing bio-based products.**

Type of action	Coordination and support action
Deadline	**14 February 2017**
Call identifier	H2020-BB-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/6081-bb-05-2017.html

Opportunities for Researchers from the Socio-economic Sciences and Humanities (SSH) in Horizon 2020

Societal Challenge 3
Secure, Clean and Efficient Energy

EE-06-2016-2017
Engaging private consumers towards sustainable energy

Specific challenge

Consumers should be considered at the heart of the energy system and become active market players. The future private consumer should be more aware, active, energy sufficient, as well as being a prosumer producing energy for their own consumption, where this is possible. Furthermore, in view of the rise in energy prices, consumers are spending an increasing share of their income on energy, with estimates stating that more than 50 million Europeans are affected by energy poverty. Energy efficiency, energy savings and increased use of locally produced, including own produced, renewable energy are key tools in addressing fuel poverty.

In this context, **engagement actions are needed across Europe in order to achieve behavioural change towards more sustainable choices and decisions for energy**. This includes increasing and understanding consumer 'apetite' for higher efficiency products.

Although awareness on the benefits of collective consumer action in the field of EE and RES has increased in past years, such action is still hampered by a number of barriers, including financial and regulatory barriers and inconsistencies in grid integration practice. In addition, insufficient use of relevant ICT solutions and insufficient understanding of energy bills contribute to hampering the achievement of a more sustainable energy system.

Scope

Develop and roll out tailored and effective and innovative engagement actions to motivate changes in consumers' sustainable energy behaviour that would result in reduced energy consumption in buildings, heating/cooling systems and/or appliances. The proposed actions should focus on clearly defined target groups of private consumers (individuals or collectives), using market segmentation. **The proposed actions should demonstrate an understanding of different types of behaviours and consider the different approaches needed to influence them**. **The actions should** also address the risk of "rebound effects", propose measures to counteract them, and **apply current theory and practice on consumer decision making processes** (e.g. effects of new technologies on energy behaviour). All relevant stakeholders necessary for the successful implementation of the action should be involved and it is expected that relevant consumer organisations, in particular, are either directly involved or their support is clearly demonstrated in the proposal. Where relevant for the proposed action, gender issues should be taken into account, in particular the role gender characteristics may play in influencing consumer behaviour. Actions should preferably cover a wide geographic area through complementary actions covering various parts of the EU.

The proposed action should cover one or more of the following:

- **Empower and facilitate actions for consumers to become prosumers**, or to form collective consumer groups/consumer cooperatives (addressing energy efficiency and/or renewable energy, and energy storage, where applicable, with a focus on action).
- **Support clearly defined groups of vulnerable consumers** in tackling fuel poverty by facilitating more sustainable energy behaviour and choices in their everyday life, without compromising comfort levels. This should also aim at achieving structural changes of national policies to specifically address fuel poverty and could include the transfer of best practices for the active engagement of vulnerable consumers.
- Facilitate wider deployment and consumer adoption of existing ICT-based solutions, for energy efficiency and information on energy consumption and costs, with a focus on action and resulting in improved understanding of ICT interfaces and information depiction (including smart metering and related systems).
- Facilitate consumer understanding of energy bills (on and off line), leading to actions allowing for a reduction in energy consumption. Such actions should ensure robust monitoring to demonstrate the effectiveness of the approach proposed,
- **Create better instruments for improving consumer understanding and routing purchase decisions** towards higher efficiency products, ensuring high performance in the areas important to health and wellbeing at the same level of effectiveness and with no additional relevant environmental impacts,
- **Distilling policy lessons from the market insight** gathered as a means to review existing, and produce better, legislation.
- 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.

Expected impact

Proposed actions are expected to demonstrate the impacts listed below (wherever possible, use quantified indicators and targets), depending on the scope of the proposal:
Primary energy savings triggered by the project within its duration (in GWh/year per million Euro of EU funding);

- **Number of people changing their behaviour and taking informed decisions**, documenting why and how changes are an effect of particular measures taken, as well in terms of the sustainability of the behavioural change;
- **Number of consumers engaged by actions aiming at improving consumer understanding and routing purchase decisions towards higher efficiency products**;
- Renewable Energy production and Investments in sustainable energy triggered by the project within its duration (for actions on prosumers/consumers groups, respectively in GWh/year and million Euro of investments per million Euro of EU funding);
- **Policies and strategies created/adapted to include fuel poverty (for actions on fuel poverty, to be measured in number of citations / statements from governance bodies)**.

Type of action	Coordination and support action
Deadline	**15 September 2016**
Call identifier	H2020-EE-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/4095-ee- 06-2016-2017.html

LCE-05-2017
Tools and technologies for coordination and integration of the European energy system

Specific challenge

The increasing share of variable renewable energy sources and the 2020 and 2030 targets for the reduction of greenhouse gas emission in the EU are calling for important changes in our energy system: more flexibility, more active involvement of all stakeholders and more collaboration. If no actions are taken, the power system will face several risks such as, poor quality of the electricity supply, congestion, lack of stability, excessive levels or curtailments, impossibility to cope with electro mobility demand, etc. The challenge is therefore to create and deploy common tools for planning, integration and operation across the energy system and its actors.

Scope

Proposals must target the development of technologies, tools and systems in one or several of the following areas:
1. Novel European grid and end-to-end energy system planning tools, including foreseeable features such as storage, aggregation, demand-response and integrating cost aspects;
2. Enhanced TSO / DSO collaboration and coordination tools, secure data exchange across networks along whole the value chain, ICT tools for cross-border trading for nearly real-time balancing; definition of minimum set of specifications to allow automated digital cross-border electricity market;
3. Solutions for the deployment of neutral data access points ensuring a fair and transparent data access to all energy actors (TSOs, DSOs, ESCOs, Telcos, ICT companies, consumers, etc.); **validation of new business models** resulting from the cooperation between them; investigation of incentives and possible commercial arrangements with a fair share of benefits across actors;
4. Synergies between electricity, gas and heat networks, associated business and market mechanisms and **analysis of existing regulatory aspects**; technologies for hydrogen production and storage are addressed in the frame of the Fuel Cell and Hydrogen JU and are therefore excluded from this call;
5. **Socio-economic aspects and environmental aspects related to large scale infrastructures relevant to renewable generation and changes to transmission infrastructure need for their integration; socioeconomic aspects of consumer behaviours in demand-response mechanisms, consumer engagement.**
Proposals will demonstrate a good knowledge and compatibility with current regulations, available or emerging standards and interoperability issues applying to their technologies, in particular in connection to ongoing work in the Smart Grid Task Force and its Experts Groups in the field of Standardization (e.g. CEN-CLC-ETSI M/490), regulatory environment for privacy, data protection58, cyber security, smart grid deployment, infrastructure and industrial policy (http://ec.europa.eu/energy/en/topics/markets-and-consumers/smart-grids-and-meters/smart-grids-task-force).
The Commission considers that proposals requesting a contribution from the EU between EUR 2 and 4 million would allow this specific challenge to be addressed appropriately and between EUR 0.5 and 1 million for proposals addressing area 5 only. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.
In order to ensure the coverage of each area, proposals above all thresholds will be ranked in each of the 5 areas and the first ranked proposals in each area will be selected until the available budget is exhausted (first, all proposals ranked nb 1, then nb 2, etc.); in case of insufficient budget to select all projects of the same rank to cover the 5 areas, the best scores will prevail; in case of equal scores, standard rules do apply.

Expected impact

Proposals must demonstrate that they are relevant, compatible with the broad EU energy policy context such as Climate-Energy packages, Energy Union. Where relevant, they should also indicate if and how they will contribute to:
- ongoing policy developments in the field of the design of the internal electricity market, of the retail market, ongoing discussions on self-consumption,
- enhanced interconnections between Member States and/or between energy networks.
Proposals must demonstrate if and how they contribute to the following impacts.
1. Optimized grid planning and design at European level, maximizing the capacity of the grid to host variable renewables, take full advantages of a pan-European grid for stability and security
2. Safe, secure, efficient and coherent data handling, enabling more cross border trading and real time balancing 3. Enabling

new flexibility services to the grid associated with new business opportunities, offering the access to cheaper energy for the consumers and maximising the social welfare

4. Increasing the potential of exchanges between energy networks, enhanced security of supply, create business opportunities, avoidance of curtailment, offering new services to the grid

5. Account for human behaviour in the design of infrastructure and demand-response to avoid blockages due to social acceptance, placing the consumer at the center of the energy system.

Finally, proposals will also include ad-hoc indicators to measure the progress against specific objectives of their choice which could be used to assess the progress during the project life.

Type of action	Research and Innovation action
Deadline	**14 February 2017**
Call identifier	H2020-LCE-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2161-lce-05-2017.html

LCE-06-2017
New knowledge and technologies

Specific challenge

 The technologies that will form the backbone of the energy system by 2030 and 2050 are still under development. Promising technologies for energy conversion are being developed at laboratory scale and need to be scaled up in order to demonstrate their potential value in our future energy system. These new technologies should provide more flexibility to the energy system and could help adapting to changing climatic conditions. New knowledge and more efficient and cost-competitive energy technologies, including their conventional and newly developed supply chains, are required for the long run. It is crucial that these new technologies show evidence of promising developments and do not represent a risk to society.

Scope

One of the following technology-specific challenges has to be addressed:
- New renewable energy technologies: Developing the new energy technologies that will form the backbone of the energy system by 2030 and 2050: Excluding wind energy and sustainable fuels addressed in the other bullet points, and photovoltaic new materials addressed in topic NMBP-17-2016 ('Advanced materials solutions and architectures for high efficiency solar energy harvesting') of the work programme part 'Leadership in enabling and industrial technologies – 5.ii Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing', the challenge is to scale up energy technologies currently in development at laboratory scale. It is crucial that these new, more efficient, and cost-competitive energy generation and conversion technologies, demonstrate their potential value in the future European energy system. Developments in sectors other than energy may provide ideas, experiences, technology contributions, knowledge, new approaches, innovative materials and skills that are of relevance to the energy sector. Cross-fertilisation could offer mutually beneficial effects.
- Wind energy: Improved understanding of the physics of wind as a primary resource and wind energy technology: For an improved design of large-scale wind rotors a better understanding of the underlying physics is needed. The challenge is to increase understanding of the underlying physics and to significantly improve the simulation capability for multi-scale wind flows, loads and materials failure. Significant high-performance computing (HPC) resources will be needed for this challenge. It is expected that further research towards this challenge will continue after the project, therefore the data retrieved in this project should be with open access. Research results could contribute to IEA Wind and for that reason cooperation with IEA partner countries is expected. International cooperation with leading groups outside Europe is encouraged. This research will contribute to making wind energy fully competitive, through a better design of the wind turbine and having an impact on the turbine efficiency and therefore on the cost of energy produced.
- Sustainable Fuels: Diversification of renewable fuel production through novel conversion routes and novel fuels: Novel technologies for sustainable fuel production and novel fuels having a potential value in our future transport energy system should be developed at laboratory scale. The specific challenge is to diversify the sustainable fuel production taking into account long-term dependencies on fossil fuels of particular transport sectors by developing novel fuels and processes that in the long-term can bring down substantially transport fuel costs while overcoming sustainability constraints and feedstock limitations. While biofuels produced from starch, sugar and oil fractions of food/feed crops are excluded, this research shall enable novel fuel production addressing one of the following pathways:

o Development of novel microorganisms, enzymes and catalysts or a combination of these systems with improved performance for obtaining paraffinic biofuels or higher alcohols from lignocellulosic biomass;
o Development of renewable alternative fuels from CO2 in industrial waste flue gases through chemical catalytic conversion;
o Development of renewable alternative fuels from H2O, CO2 and energy from renewable, autonomous sources through micro-organisms, synthetic molecular systems or chemical synthesis, or a combination of these processes;
o Development of middle distillate range biofuels (i.e. diesel and jet fuel) from liquid organic or lignocellulosic waste streams through advanced thermochemical conversion processes.

Aside from the technology-specific challenges mentioned above, potential environmental, resource efficiency and safety concerns, **issues related to social acceptance or resistance to new energy technologies, as well as related socioeconomic and livelihood issues also should be addressed**, where relevant. **This may require a multi-disciplinary perspective with contributions also from the social sciences and humanities, which then should be integrated into the research process from the outset**. A methodology that permits a sustainability assessment of the environmental (notably in terms of GHG performance), **as well as economic and social benefits with respect to current technologies should be included**.
Novel technology solutions for grid integration, storage, fuel cells and hydrogen – other than integral to the technology solution developed, energy efficiency and smart cities will not be supported under this topic but in the relevant parts of this work program.
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

The results of this research are expected to move the technology involved to TRL 4 (please see part G of the General Annexes) and to provide better scientific understanding and guidance enabling the players concerned (e.g. policy makers, regulatory authorities, industry, interest groups representing civil society) to frame strategic choices concerning future energy technologies and to integrate them in the future energy system. It is also expected that new, out-of-the-box or advanced innovative ideas will emerge that will provide new impetus to technology pathways, to new solutions, and to new contributions to the energy challenge in Europe or worldwide.
Where relevant, the new developed technology pathways should improve the economic, environmental and social benefits of renewable energy. Notably, for sustainable fuels they should improve the conversion efficiency that will eventually allow significant cost reduction.

Type of action	Research and Innovation action
Deadline	**5 January 2017**
Call identifier	H2020-LCE-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2156-lce-06-2017.html

LCE-11-2017
Near-to-market solutions for reducing the water consumption of CSP Plants

Specific challenge

In spite of the improvements in recent years, water consumption remains a crucial barrier to the deployment of CSP plants especially in arid areas. The challenge is to drastically reduce water consumption.

Scope

Projects shall demonstrate **cost-effective** technical **solutions** which significantly reduce or replace the water consumption of CSP plants. The demonstration shall take place in a region with very good solar resource values (Direct Normal Irradiation > 2000 kWh/m2 year).
Since **the availability of water resources** particularly in arid areas **is linked to broader socioeconomic and livelihood issues and therefore of particular relevance to local communities, multidisciplinary research designs that integrate contributions also from the social sciences and humanities are encouraged. Engaging and involving local communities, and further investigating the roots of social acceptance or any resistance to CSP plants**, so as to develop mitigating strategies or alternative solutions, should likewise be part of the project.
TRL 7 shall be achieved at the end of project activities (please see part G of the General Annexes).
Opening the project's test sites, pilot and demonstration facilities, or research infrastructures for practice oriented education, training or knowledge exchange is encouraged.
The Commission considers that proposals requesting a contribution from the EU of between EUR 10 to 12 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

The action will result in significant exploitation prospects for the European technology in the field of CSP deployment, **bringing cost effective solutions** that improve the environmental profile.

Type of action	**Research and** Innovation action
Deadline	**7 September 2017**
Call identifier	H2020-LCE-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2172-lce- 11-2017.html

LCE-19-2016-2017
Demonstration of the most promising advanced biofuel pathways

Specific challenge

It is essential to diversify the technology portfolio and feedstock basis to allow competitive production of advanced biofuels for use in transport.
The following sub-challenges should be addressed:
a. **improving the** technical and **economic feasibility of the production of new and advanced liquid biofuels**;
b. **demonstrating the feasibility of using feedstock particularly suitable for transport energy purposes**.

Scope

Proposals shall aim at moving technologies that reached already TRL 5-6 to TRL 6-7 (please see part G of the General Annexes) through industrial demonstration projects in line with the Implementation Plan of the EIBI. Projects should target the most promising advanced liquid biofuel production pathways incorporating new or improved biochemical/thermochemical/chemical conversion together with upgrading technologies and valorisation of co-products **that improve the economic viability of the fuel production**.

Environment, **economic and social issues** including health and safety **should be considered in the whole life cycle and appropriately addressed**. **A methodology that permits robust and reliable assessment of the** environmental (notably in terms of GHG performance), **economic and social benefits with respect to current technologies should be included**.
The proposals should respect the principle of the minimum bioenergy content laid out in the EIBI Implementation Plan: 'At least 70% of the bioproducts produced by the plant shall be bioenergy (biofuels, heat, power) , calculated on energy basis. Biofuels produced from starch, sugar and oil fractions of food/feed crops are excluded.

Proposals should address both sub-challenges described above, while the main effort in 2016 shall be in addressing sub-challenge a) and in 2017 sub-challenge b). Where synthesis gas or intermediate energy carriers are produced, their final use for production of advanced biofuels for transport must be demonstrated.

In particular, proposals shall address one of the following:
In 2016:
- Biomass gasification to synthesis gas;
- Biomass pyrolysis and torrefaction to intermediate bioenergy carriers (pyrolysis oils and torrefied biomass);
- Biochemical conversion of lignocellulosic biomass sugars to hydrocarbons for diesel and jet engines;
In 2017:
- Biofuels from the carbon content in flue gases of industrial wastes through biochemical and/or biological conversion;
- Biofuels from aquatic biomass;
- Liquid biofuels from wastes and residues (forest, agricultural, the organic fraction of municipal and industrial wastes).

Proposals shall explicitly address performance and cost targets together with relevant key performance indicators and the expected impacts. Industrial involvement in the consortium and explicit exploitation plans are a prerequisite.
Proposals shall include a work package on the business case of the technology solution and which identifies potential issues of public acceptance, market and regulatory barriers, including standardisation needs. **It should also address**, **where appropriate, synergies between new and existing technologies and other socio-economic and environmental aspects from a life-cycle perspective**. Furthermore, they shall address the risks (technological, business, process) and their possible mitigation.
Opening the project's test sites, pilot and demonstration facilities, or research infrastructures for practice oriented education, training or knowledge exchange is encouraged.

The Commission considers that proposals requesting a contribution from the EU of between EUR 10 to 15 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

Demonstrating advanced biofuel technologies at large industrial scale reduces the technological risks and paves the way for subsequent first-of-a-kind industrial projects. For this purpose, the scale of the proposals should permit obtaining the data and experience required so that up-scaling to a first-of-a-kind, industrial project can be envisaged as a next step. Favourable energy and GHG balances are expected. **The demonstrated industrial concepts should ensure the techno-economic feasibility of the entire value chain and have the potential for a significant social and economic impact**, notably in terms of job creation, economic growth and safe and affordable energy supply.

Type of action	Innovation action
Deadline	**8 September 2016**
Call identifier	H2020-LCE-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2152-lce-19-2016-2017.html

LCE-20-2016-2017
Enabling pre-commercial production of advanced aviation biofuel

Specific challenge

 Decarbonisation of the aviation transport sector and reducing its dependence on fossil fuel requires liquid biofuels even in the longer term. Accelerating the deployment of advanced biofuel technologies for use in aviation will allow competitive production of biojet fuels on commercial scale, increase their attractiveness and facilitate achievement of the EU Biofuel FlightPath targets. Therefore, the specific challenge is to **enable commercial production of sustainable and cost-competitive advanced biofuels** aimed for use in the aviation sector. In particular, supporting the accomplishment of pre-commercial plant(s) for advanced biofuels for aviation based on sustainable biomass feedstock is essential.

Scope

Proposals shall aim at moving technologies that have already reached TRL 5-6 to TRL 6-7 (please see part G of the General Annexes) through novel industrial demonstration projects which support the innovative integration of production processes for advanced biofuels for aviation into first–of-a-kind or existing industrial scale plants. Projects should target the most promising advanced aviation biofuel production pathways incorporating upgrading **technologies** and valorisation of co-products **that improve the economic viability of the fuel production**. The ultimate production target of aviation biofuel for the complete plant shall be in the range of several tens of thousand tonnes per year. The aviation biofuel must be fully compliant with international aviation fuel standards and therefore suitable for commercial flight operations. Where relevant projects should also make use of existing infrastructures for transportation, logistics, and fuelling for performing commercial flights with the produced fuel. Relevant datasets shall be collected for these operations.

Environment, **economic and social issues** including health and **safety should be considered in the whole life cycle and appropriately addressed. A methodology that enables robust and reliable assessment of the** environmental (notably in terms of GHG) performance, **economic and social benefits with respect to current technologies should be included**.
In addition, proposals shall address the entire value chain including the supply chain of sustainable biomass feedstock and the actual use of the produced biofuel in aviation.
Biofuels produced from starch, sugar and oil fractions of food/feed crops are excluded.

Proposals shall explicitly address performance and cost targets together with relevant key performance indicators and the expected impacts. Industrial involvement in the consortium and explicit exploitation plans are a prerequisite.
Proposals shall include a work package on the business case of the overall business solution and which identifies potential issues of public acceptance, market and regulatory barriers along the entire value chain. It should also address, where **appropriate, synergies between new and existing technologies and other socio-economic and environmental aspects from a life-cycle perspective**. Furthermore, they shall address the risks (feedstock, technological, business, process) and their possible mitigation. A signed off-take agreement with one or more airlines or alternative similar agreements should be envisaged in the proposal. In the event of a grant award the off-take agreement must be signed before signature of the grant agreement.

The Commission considers that proposals requesting a contribution from the EU of between EUR 5 to 15 million in 2016 and to 10 million in 2017 would allow this specific challenge to be addressed appropriately while maximizing the acceptable production pathways. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Demonstrating advanced biofuel technologies for aviation at large industrial scale will respond to the EU FlightPath objectives for commercial deployment and realisation of aviation biofuels and its target of using 2 million tons aviation biofuel by 2020. Favourable energy and GHG balances are expected. **The demonstrated industrial concepts should ensure the techno- economic feasibility of the entire value chain and have the potential for a significant social and economic impact**, notably in terms of job creation, economic growth and contribution to the decarbonisation of the aviation sector in addition to supporting advancement

Type of action	Innovation action
Deadline	**8 September 2016**
Call identifier	H2020-LCE-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2154-lce-20-2016-2017.html

LCE-21-2017
Market uptake of renewable energy technologies

Specific challenge

Since the adoption of RES Directive in 2009, most Member States have experienced significant growth in renewable ene
consumption and the EU and large majority of Member States are on track towards 2020 RES targets. Considering Member Sta
current and planned policy initiatives, their current implementation rates and the various barriers to renewable ene
development, the need for improvements for some RES technologies, like offshore wind, advanced biofuels, CSP and geotherm
however, becomes apparent.

To ensure the level of growth needed to deliver the technology deployment rates at least to the level planned in the Natio
Renewable Energy Action plans and their necessary contribution to the 2020 RES targets. EU targets for renewable energy, and
create the appropriate business environment for EU industrial leadership in low-carbon energy technologies, a number
important market-uptake challenges need to be addressed.

Scope

One of the following technology-specific challenges has to be addressed:
1. <u>Photovoltaics</u>: Tackling the bottlenecks of high penetration levels of PV electricity into the electric power networ
   electricity is not necessarily generated when mostly needed. Furthermore, small distributed PV systems feed into the
   possibly all at the same time challenging grid stability. To enable the effective and efficient integration of growing sh
   of PV power into the grid, the idea of PV producers becoming "prosumers" – both producers and consumers of energy
   gaining ground while "self-consumption" is becoming a major driver for the installation of small distributed PV system
   facilitate this to happen, the following sub-challenges need to be addressed:
   a. Development of solutions for innovative system-integration and power-management for households/large
      buildings (in general small distributed PV systems) including storage, particularly addressing the impact of sel
      consumption on the operation of the grid and the value of PV electricity when aggregated and offered to th
      wholesale market;
   b. Based on these solutions, **elaboration of business and management models, including cost-benefit analysis a
      assessing economic feasibility** for the European urban landscape.
2. <u>Heat Pumps</u>: Accelerate the penetration of heat pumps for heating and cooling purposes: Heating and cooling represe
   almost 50% of the final EU energy consumption and cooling demand is increasing. The cost associated with the purch
   and installation of heat pumps remains an obstacle for a wider penetration on the market. In order to accelerate
   penetration of heat pumps for heating and cooling purposes, proposals should address the following challenges:
   a. identification of the most promising cost reduction options for CAPEX, installation costs, and OPEX as well as
      development of EU wide scenarios of deployment; proposed prioritisation of R&I investments;
   b. development of solutions for innovative system integration and integrated power management for
      household/industrial buildings.
3. <u>CSP</u>: Facilitating the supply of electricity from CSP plants in Southern Europe to Central and Northern European countries - By
   means of CSP Southern European countries could supply renewable electricity on demand to the entire European energy market,
   including Central and Northern European countries – in particular, the Renewable Energy Directive foresees cooperation
   mechanisms to this end to allow Member States to meet their national targets cost-efficiently. The exploitation of this possibility
   would greatly facilitate the market uptake of CSP, but this has not happened so far. **The challenge is to identify all issues
   (technological, legal, economic, political, social, financial, etc.) that may constitute an obstacle to the supply of renewable
   electricity** on demand from CSP plants to Central and Northern European countries (other than those bottlenecks related to
   building new physical interconnections), and to provide options for addressing them in the context of a concrete project case.

4. Wind energy: Increasing the market share of wind energy systems: One of the following specific sub-challenges need to be addressed: i) Develop spatial planning methodologies and tools for new onshore wind and repowering of old wind farms taking into account environmental and social impacts but also the adoption of the latest developments in wind energy technology; ii) Identify the bottlenecks for further deployment in Europe and the regulations which limit the adoption of technological innovation and their deployment possibilities; **iii) Increase the social acceptance and support for wind energy in 'wind energy scarce regions' using, with solid involvement of social sciences and humanities and local communities and civil society to understand best practices and to increase knowledge about social and environmental impact of wind energy.**

5. Geothermal energy: Tackling the bottlenecks of high penetration levels for geothermal energy systems: Geothermal energy suffers from a level of penetration that is limited compared to its potential and there are growing concerns regarding the environmental and the social impact of geothermal installations. **The challenge is to remove environmental and social concerns that pose barriers limiting the contribution of geothermal energy to the energy mix. The challenge is to assess the nature of public concerns and the elements that influence individual and group's perception of geothermal installations, to increase the understanding of the socio-economic dimension of geothermal energy, and to promote change in community responses to new and existing geothermal installations**. Different technologies and possible technological solutions, with particular reference to reinjection of incondensable gases in deep geothermal plants, are key elements of the environmental and social impact assessment. Specific challenges related to deep and shallow geothermal energy require separate considerations. Risk management strategies and adequate technology selection, for example induced seismicity or emission reduction should be addressed, when relevant.

6. Sustainable Fuels: Facilitating the market roll-out of liquid advanced biofuels and liquid renewable alternative fuels: The challenge is to enable commercialisation of advanced biofuels to help meeting the 10% target for Renewable Energy Sources in the EU transport energy consumption by 2020 and then contribute to the EU targets of 27% share of Renewable Energy Sources in the EU energy consumption and of 40% GHG reduction by 2030. Fossil fuels and biofuels produced from starch, sugar and oil fractions of food/feed crops are excluded. Proposals shall address one or several of the following sub-challenges:

   a. **Development of tools for predicting the fuel cost in relation to different supply and demand scenarios taking into account technology performance, economies of scale, feedstock costs, market demand, socio-economic aspects, etc. and including sensitivity analysis** through conceptual engineering and cost estimation for the most common conversion routes;

   b. Development and implementation of innovative crop rotation schemes for the production of lignocellulosic biofuels with improved sustainability;

   c. Development of numerical tools for prediction of fuel and fuel blend properties and model validation to facilitate the certification process in the transport sector;

   d. **Development of communication strategies to increase the public acceptance for advanced biofuels for the most common conversion routes**;

   e. **Setting up sustainable and cost-effective European biomass supply chains for the industrial production of advanced biofuels**;

   f. Actions aiming at development and implementation of common standards and certification schemes for fuels at EU-level;

   g. Actions aiming at harmonization of national standards and certification schemes for fuels at a European level;

   h. Development of tools and actions for capacity building among relevant stakeholders of all steps in the advanced biofuel value chain aiming at substantially reducing biofuel costs at large scale.

Proposals should address one of the sectorial technology challenges mentioned above. **The complexity of these challenges and that of the related market uptake barriers calls for multi-disciplinary research designs, which may include contributions also from the social sciences and humanities**. Regional specificities, **socio-economic**, spatial and environmental **aspects from a life-cycle perspective shall be considered**. For all actions, the consortia should involve and/or engage relevant stakeholders and market actors who are committed to adopting/implementing the results. **Where relevant, proposals should also critically evaluate the legal, institutional and political frameworks at local, national and European level and how, why and under what conditions these (could) act as a barrier or an enabling element.**

The Commission considers that proposals requesting a contribution from the EU of between EUR 1 to 3 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

It is expected to increase the share of renewable energy in the future energy mix and to increase the share of sustainable advanced biofuels and renewable alternative fuels in the final EU transport energy consumption or facilitate those increases in the future. In addition, contribution to market understanding for possible policy and regulatory development is anticipated.

Type of action	Coordination and support action
Deadline	**5 January 2017**
Call identifier	H2020-LCE-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2168-lce-21-2017.html

LCE-28-2017
Highly flexible and efficient fossil fuel power plants

Specific challenge

The share of energy produced from renewable resources is growing rapidly. The output of wind and solar power is highly variable, and depends of factors such as weather conditions and time of day. With this growing share of renewable power, in particular when having priority access to the grid, fossil fuel power plants will have to increasingly shift their role from providing base-load power to providing fluctuating back-up power to meet unpredictable and short-noticed demand peaks, in order to control and stabilise the grid. Plants should be able to run both at the lowest part load possible at the highest possible efficiency. Moreover, plants will be required to operate across the entire load range with high load-change velocities, and even operate in start/stop mode with full turndown and very fast re-start, all at minimal (lifetime) fuel consumption. This forces base-load plants to operate through significantly more thermal cycles, leading to increased rate of wear on plant components. Operational flexibility therefore presents a significant challenge for fossil fuel power (and CHP) plants.

Scope

Focus on progressing solutions that already reached TRL 3 to TRL 4-6 (please see part G of the General Annexes) and offer the highest potential for a deeper integration into an advanced energy system with ever higher shares of renewable energies, for both existing (retrofitting) and new thermal power plants. Solutions with lowest greenhouse gas emissions, residue disposal and water need per energy unit are preferred. Collaboration with power plant operators is strongly encouraged. Support will not be given to projects that provide performance improvements that are not related to load fluctuations.
The Commission considers that proposals requesting a contribution from the EU in the range of EUR 3 to 6 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
Projects should lead to innovative and cost-effective solutions to improve the ability of new and/or existing dispatchable thermal power plants to meet fast load changes, in order to better support the grid due to fluctuations in energy peak demand and power output from renewable sources, at minimal fuel consumption and emissions, while mitigating the effects of cycling operation to avoid excessive wear and service life expenditure, and not impeding the potential CO_2 capture readiness of the power plants.

Type of action	Research and Innovation action
Deadline	**5 January 2017**
Call identifier	H2020-LCE-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2160-_lce-28-2017.html

Opportunities for Researchers from
the Socio-economic Sciences and Humanities (SSH)
in Horizon 2020

Societal Challenge 4

Smart, green and integrated transport

MG-4.1-2017
Increasing the take up and scale-up of innovative solutions to achieve sustainable mobility in urban areas

Specific challenge

Many innovative solutions (supported by STEER, CIVITAS, national, regional, local, international and other initiatives) for sustainable urban mobility were locally developed or developed as self-standing projects in a variety of social, economic and geographical contexts. The specific challenge is to increase the take up of innovative solutions by transferring them to new contexts and studying and comparing the impacts. **Special attention should be paid to social issues and implications**. Where relevant, potential gender differences should be investigated.

Scope

Proposals should address one or several of the following domains:
—Traffic and travel avoidance: planning and location policy; innovative demand management approaches while providing citizens, businesses and organisations with minimum levels of access; **less car dependent lifestyles**.
—Optimising the use of existing infrastructure and vehicles: this may include **smart pricing of parking, public transport and road use**; increasing load factors and making the last mile more efficient in urban freight transport; integration between urban freight and passengers transport networks within appropriate city and transport planning governance; innovative use of passenger transport means; planning for increasing the resilience of the urban transport system to extreme weather events.
—Optimising design and use of multi-modals hubs and terminals for passengers and freight; integration of systems, (sustainable) modes and 'mobility as a service', more efficient transfers; transformation of districts; multi-purpose use of space for vehicles.
—Supporting modal shift towards more efficient modes: increased walking and cycling; urban waterborne transport; mobility management and travel awareness; increased attractiveness of public transport; new coordination and service concepts.
—**New governance models** for freight and passenger transport: better coordination and cooperation; synergies between passenger and freight transport; stakeholder engagement; public consultation and participation; **education and training, policy transfer.**
ITS solutions are covered in other topics of the Transport Challenge Work Programme and in other parts of Horizon 2020, but the integration of IT and ITS enablers for urban mobility measures needs to be fully considered.
The Commission considers that proposals requesting a contribution from the EU of between EUR 2 to 5 million each would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Actions should demonstrate successfully transfer a single solution/approach or limited package of mutually reinforcing solutions/approaches from a small number of locations in Europe (indicatively not more than five) to at least ten new locations in Europe.
Building on clear commitments from action participants for a further Europe-wide take-up and rollout of results during and following the actions, they will result in new insights into the practical transferability of innovative solutions/approaches. Actions will demonstrate how their activities will lead to faster, **more cost-effective and larger scale deployment of a range of innovative (technological and non-technological) solutions/approaches to achieve sustainable mobility in urban areas. Possible (technological and non-technological) barriers and ways to overcome them should be identified and addressed by actions.**

Type of action	Innovation action	
Deadline	**1st stage - 26 January 2017**	**2nd stage -19 October 2017**
Call identifier	H2020-MG-2016-2017	
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2111-mg-4.1-2017.html	

MG-4.2-2017
Supporting 'smart electric mobility' in cities

Specific challenge

In order to integrate electromobility in their Sustainable Mobility Plans, European cities need to equip themselves with a network of electric recharging stations for electric cars and L-category vehicles. This will help the market to grow, as potentially interested consumers tend not to buy electric vehicles because they are not confident enough about the opportunities to recharge them. However, **the real business models do not yet exist**. The establishment of recharging infrastructure for electric vehicles is expensive and, without additional financial support and/or new approaches, there is a first-mover disadvantage until there are enough vehicles to make the investments profitable.

Scope

Proposals should focus on the development of integrated approaches and **testing of "business" models** for the local production and distribution of electricity together with electric vehicles fleet, to create the conditions for market take up in urban and sub-urban areas. This could include private and public recharging stations. Approaches could include e.g. charging at work places, private parking places, homes, public spaces, transport intermodal hubs, system integration of large fleets of electric vehicles (BEVs and PHEVs), multimodal platforms, etc. Specific tests and pilots focussing on the integration of solutions into transport system, in combination with a cross-site evaluation, could be carried out. **Possible barriers and ways to overcome these barriers to deploy integrated solutions and business models for electric recharging should be identified**. Where relevant, potential gender differences should be investigated.
The Commission considers that proposals requesting a contribution from the EU of between EUR 4 to 5 million each would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.
In order to maximise the impact in this topic, **the focus of investments planned in these proposals should be on developing integrated approaches and testing of business models**, rather than purchasing the actual clean vehicles and their appropriate infrastructure.

Expected impact

Tested and validated business models for electromobility solutions regarding:
—Large scale, sustainable and decentralised energy production and distribution (also from transport infrastructure itself) in balance with local use.
—**Simple, interoperable, convenient and intelligent billing systems** ensuring at the same time a safe and reliable data exchange in cities. This includes integrated energy infrastructure systems, bringing together technologies from the energy, infrastructure and transport domains.
—Emergent integrated approaches and **business models for recharging, looking – among others – at consumer acceptance, value models and ownership**.
—Projects should bring innovative tools and recommendations to integrate electromobility in SUMPs (for example, planning policies and use of urban space), as well as recommendations for common standards of ultra-low emissions urban areas.
—On the basis of clear commitments from participants for a further Europe-wide take-up and rollout of results during and following the project are expected.
The project proposal should include an estimation of CO_2 savings obtained through the sustainable urban mobility solutions deployed in the project, on the basis of CO_2 intensity of the European electricity grid of 540 g CO_2/kW-h19. It should also provide information on how this estimate is calculated, for example on the basis of the size of the entire vehicle fleet powered by electricity that will be deployed in the project, and/or on the number of the recharging in the infrastructure that will be deployed in the project.

Type of action	Innovation action	
Deadline	**1st stage - 26 January 2017**	**2nd stage -19 October 2017**
Call identifier	H2020-MG-2016-2017	
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2110-mg-4.2-2017.html	

MG-5.4-2017
Potential of the Physical Internet

Specific challenge

Ongoing research efforts show that the translation of the working principles of the Digital Internet to the routing of freight, thus creating the Physical Internet (PI), has the potential to be a real game-changer. In the PI world freight travels from hub to hub in an open network rather than from origin to destination directly. Each parcel is routed automatically and at each section it is bundled for efficiency. In the PI network of networks many (if not all) transport and logistics services would be accessible on demand to all users.

This will however require the successful **integration of many innovative concepts and non-the-least the mental-shift to adopt a very different governance structure.** The Internet of Things for example, which could link every future container, load unit or parcel to the internet, can be considered a pre-requisite for the Physical Internet to work as there will be an increased need to track all goods in a freight environment lacking a fixed and known transport route. The main challenge is to model a future Physical Internet network topology and assess the benefits it could generate in terms of carbon footprint, throughput times and cost reductions. Additionally the concept of the Physical Internet, already identified by ALICE, needs to be detailed into a strategic and operational vision which has the capability to get industry-wide endorsement of all stakeholders.

Scope

This topic will be implemented through two types of actions:
1) Research and Innovation Actions. Proposals should cover all the following issues:
—Set up a case study to identify the position, size and number of hubs needed for efficiently linking the long distance network and providing sufficient access points to urban areas.
—Map the influence sphere of each node and its benefits across borders to fuel future shared investments.
—Develop **simulation and modelling tools to assess the possible impact of the PI, including the socio-economic aspects**.
2) Coordination and Support Actions. Proposals should cover all the following issues:
—Develop a roadmap towards the Physical Internet (milestones, first implementation opportunities, etc.) defining which changes are required for migrating to a PI and how these could take place (e.g. current vs future logistic practices, IT applications and enabling technologies, **business models, mental shift**, integration of SMEs, **customer behaviour**, etc.).
—Monitor logistics and freight transport initiatives and research projects from relevant European programmes (H2020, TEN-T, etc.), and their impacts and contributions to Physical Internet. Fostering the links between ALICE and other transport and manufacturing focused ETPs with the aim to identify barriers and opportunities for the deployment of research results and improvement of framework conditions.
—Create support and consensus between public bodies, research and industry stakeholders on opportunities, barriers and next steps towards a PI. Organise workshops to present and discuss results, trends, exchange experience and foster innovation aspects.
—**Explore the need for legislative initiatives by authorities, including a legal contractual framework for participants to the Physical Internet**.
The Commission considers that proposals requesting a contribution from the EU of between EUR 2 to 3 million each for Research and Innovation Actions, and between EUR 0.5 to 1 million for Coordination and Support Actions would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

To achieve the benefits resulting from the paradigm change proposed by the Physical Internet, actions are expected to demonstrate how the following aspects can be achieved:
—Kick-Start the development of the Physical Internet through building industry-wide support.
—Improved asset utilisation.
—30% reduction in terms of congestion, emissions and energy consumption.

Type of action	Research and Innovation action, Coordination and support action
Deadline	**CSA** **1 February 2017** **RIA** **1st stage - 26 January 2017** **2nd stage -19 October 2017**
Call identifier	H2020-MG-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2096-mg-5.4-2017.html

MG-8.2-2017
Big data in Transport: Research opportunities, challenges and limitations

Specific challenge

Technological developments, particularly related to the extended and expanding use of ICT in the transport sector, allow the collection of unprecedented volumes of data across all modes and transport systems. These volumes of data, known also as "big data", have generated a strong interest in the transport research community as well as in the relevant industries and among policy makers.

From freight transport and supply chain optimisation to evacuation modelling and crowd dynamics under extreme phenomena, and from short-term traffic forecasting to **travel behavioural research** and the use of social media for efficient transport operations, the so-called trend of big data has created a wide spectrum of challenges and opportunities in the field of transport research. **Indicative areas of research could, for example, cover travel behaviour (by incorporating in modelling processes heterogeneous sources of information), logistics and consumer preferences, network capacity planning and optimisation (e.g. in the case of toll roads), risk management, response to extreme weather events or other emergency situations.** **Disaggregated data analysis by users' groups (e.g. age, gender) will contribute to better focus specific needs and trends.** At the same time, the collection and possible exploitation of "big data" pose a number of questions both in methodological terms as well as in legal, institutional and social ones, which need to be addressed. The main challenge is therefore to investigate the implications of the utilisation of big data in the transport field.

Scope

In order to meet this challenge, proposals should address the following aspects:
—Identification of areas and contexts in which ICT investments and exploitation of data should be implemented. Examination of a series of different case studies and contexts throughout Europe, in order to provide useful information and suggestions on the prerequisites of successful big data implementation in the transport sector from a socio-economic point of view.
—Identification of methodological issues and the development of necessary tools in order to allow for effective data mining and data exploitation.
—Analysis of the barriers and limitations of the transportation system to exploit big data opportunities. This point should address issues that range from technical to institutional. For example, many transportation agencies and authorities, transport industries, etc. may not consider profitable the investment in collecting and analysing big data, worrying also about the associated costs and risks of data collection and sharing.
—**Examine the institutional and governmental issues and barriers concerning the application of big data in transport providing policy recommendations towards "data openness" and sharing. Issues of legitimacy and public acceptance (e.g. privacy, data security, etc.) are important and should be adequately addressed.**
The Commission considers that proposals requesting a contribution from the EU of between EUR 0.5 and 1.5 million each would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Appropriate exploitation of big data can help policy makers at the EU, national and regional level, as well as relevant decision makers to take informed decisions. Better data can help transport authorities and industries to understand the behaviour of travellers and consumers, also in disaggregated groups (e.g. age and gender), provide targeted information and identify policy interventions.
Work under this topic is therefore expected to contribute to evidence–based decision making by improving knowledge on methodological and exploitation issues taking also into account economic and technical considerations.
It is also expected to contribute to an early identification of critical issues linked to privacy, data security, legal and institutional aspects. It may therefore facilitate the development of an appropriate legal framework for the collection and exploitation of big data in the area of transport.

Type of action	Coordination and support action
Deadline	**1 February 2017**
Call identifier	H2020-MG-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2106-mg-8.2-2017.html

MG-8.4-2017   *Dedicated Topic*

Improving accessibility, inclusive mobility and equity: new tools and business models for public transport in prioritised areas

Specific challenge

Accessibility is a concept used in order to address both travel patterns, attitudes and needs of particular social groups – e.g. gender specific needs, unemployed persons, vulnerable to exclusion citizens such as elderly, children, disabled, etc., as well as the mobility needs and transport use characteristics of people living in different types of areas such as rural, remote or deprived urban areas. To obtain a more comprehensive view which will allow the elaboration of measures and transport systems that will improve inclusive mobility and equity, and support social innovation in this area, it is necessary to incorporate both approaches considering specific geographical factors as well as the mobility needs and capabilities of particular population groups.

Rural areas, for example, are faced with continuous challenges linked to demographic, socio-economic and mobility factors such as: declining populations characterised by more pronounced ageing; income factors; reduced number of services and economic viability of public transport schemes; longer distances and different mobility needs related to public transport. Urban peripheral, suburban and deprived urban areas on the other hand are often characterised by population groups which face acute social, demographic and economic problems which impact on their mobility and on their ability to use available transport systems on equal terms.

In this context, the main challenge of this topic is to examine whether organisational, technological (including extended use of ICT) and social innovations in public transport can lead to improved accessibility, inclusive mobility and equity in prioritised areas, by responding better to their specific needs and demographic/socio-economic characteristics.

Scope

Proposals should address all the following aspects:

—Analysis of the characteristics of prioritised areas in terms of spatial, demographic and socio-economic characteristics and identification of the factors that influence mobility and accessibility.

—Exploring travel behaviour and social habits of the population in a disaggregated way and assessing travel demands in prioritised areas.

—Addressing mobility needs of vulnerable to exclusion population groups such as: elderly, children, youth, disabled, people in poverty etc., as well as possible limitations to the use of new transport business models (e.g. IT illiteracy of elderly or low educated persons, pricing, etc.). Identification of gender-related specificities in each group is strongly recommended.

—Critical assessment of existing innovative organisational and operational frameworks aimed at delivering new mobility solutions and their impact on inclusive mobility and equity.

—Identification and/or development of new, efficient, inclusive, affordable and accessible mobility solutions and public transport models taking also advantage of IT applications (such as social media, app-oriented services, etc.).

The Commission considers that proposals requesting a contribution from the EU of between EUR 1 and 3 million each would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

As described in the specific challenge, certain geographic areas (such as rural, remote and deprived urban areas) as well as population groups (such as the elderly, disabled, in poverty, etc.) are faced with particular challenges regarding their mobility needs and capabilities, to which current public transport systems do not always respond adequately.

Work under this topic is expected to contribute to:

—The identification and critical assessment of sustainable and inclusive mobility options for European citizens in prioritised areas and improve accessibility offered by public transport systems.

—The development of effective, efficient and affordable mobility solutions which respond to the specific needs of particular population groups such as the elderly, the young, the disabled, taking into consideration the gender aspect.

—The elaboration of new business models for public transport, with the deployment of organisational, technological (such as IT and app-oriented services) and social innovations taking into account possible social and demographic barriers for their effective use.

Type of action	Research and Innovation action
Deadline	**1 February 2017**
Call identifier	H2020-MG-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2103-mg-8.4-2017.html

Dedicated Topic

Shifting paradigms: Exploring the dynamics of individual preferences, behaviours and lifestyles influencing travel and mobility choices

Specific challenge

There are indications that transport may be entering a period of paradigm shifts due to the introduction of disruptive technologies but also due to changes in individual preferences, behaviours, lifestyles and the emergence of social innovation and new concepts which are likely to impact on the future transport models and management. Some of these changes are already present, as for example, the growing trend towards vehicle sharing practices in many European cities, while others may still be at their very early stages, as for example, changing values of travel time.

Car sharing has been gradually developing over the past two decades while new business models and social innovation are likely to emerge in the forthcoming years fostered also by new IT applications (app-based services). This relatively short period of time has not allowed for a comprehensive and established assessment of its various impacts in social, economic and environmental terms. Estimates for its growth potential over the next decades vary considerably, so do estimates about the "replacing capacity" of car sharing. Similarly, its effects in reducing congestions, emissions and noise – especially in urban areas – as well as the impact on car manufacturing industries have not been sufficiently explored.

Travel time savings is often the principal benefit of a transportation project and efforts to achieve faster travel have been long dominating decision making. The value of travel time has been perceived as a cost which includes costs to businesses of the time their employees and vehicles spend on travel, and costs to consumers of personal (unpaid) time spent on travel. However, as technology evolves (particularly ICT), people can use their time during travel for business or leisure thus "reducing" the cost of travel in economic terms and allowing other considerations (such as energy savings, pricing, environmental and social considerations) to affect their travel time preferences.

Transport research is needed to explore at an early stage the dynamics of such changes and their impacts in socio-economic and environmental terms. The specific research challenges of this topic are to provide comprehensive analyses of these new preferences, behaviours and lifestyles, identify the main factors that influence them and assess their potential economic, social and environmental impact. In all aspects, issues of age and gender should be taken into consideration.

Scope

In order to meet this challenge, proposals should address one of the two following parts:
1. Shifting from car ownership to sharing. Proposals should:
—Compare the existing trends and forecasts across the EU and identify the factors (economic/social/demographic/spatial/cultural aspects), that influence the varied implementation of such schemes in different countries/regions/cultures including the growing use of app-based services.
—Compare and benchmark existing business models, social innovations and identify possible new ones.
—Assess the implications of car sharing schemes for the European car industry (impact on foreseen sales of conventional and electric cars, other revenues, etc.).
—Assess the potential impact on emissions, noise and congestion, especially in urban environments, as well as on safety of potential users.
2. Changing value of travel time. Proposals should:
—Analyse differences between various travel motivations (leisure, business) and the related travel time value and examine the extent to which the proliferation of ICT applications such as wifi connections (e.g. in trains, ships) tend to reduce the perceived cost of travel time for private and corporate travel. Gender disaggregated data collection and analysis could contribute to a more thorough analysis.
—Identify possible areas where a shift away from the "speed paradigm" would be feasible and provide estimates of environmental, socio-economic and organisational implications.
—Propose cost-benefit analyses of additional time savings in case of already advanced transport connections (e.g. need for faster high speed trains, for new sections of motorways in certain "almost saturated" areas, etc.) taking into account the possible new concepts of value of travel time and their environmental and socio-economic implications.
The Commission considers that proposals requesting a contribution from the EU between EUR 1 and 2 million each would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

As mentioned in the specific challenge the topic seeks to provide comprehensive analyses of the dynamics of new preferences, behaviours and lifestyles, to identify the main factors that influence them and to assess their potential economic, social and environmental impact. Work under this topic is expected to collect and provide up-to-date information on the present state of development of new business models and social innovations, a reliable assessment of their growth potential across different geographical cultural and economic environments and an assessment of their impact in areas of key policy interest, such as urban congestion, emission and noise reductions. In addition, it is expected to provide concrete assessments of their impacts on the European car industry (including electric vehicles) over the mid-long term.

The collection of updated and reliable data on the car sharing market and its prospects as well as assessments on their social, economic and environmental impact will facilitate evidence-based policy making particularly with regard to urban congestion/emissions/re-organisation of urban transport. It will also contribute to a forward looking analysis of the prospects of the European car industry market.

Work is also expected to contribute to the generation of new knowledge in a new and under-researched area which may lead in the short-medium term to different cost-benefit assessment methods of transport projects and in depth knowledge of users attitudes and choices with respect to travel time and in the longer term in possible energy savings and emission reductions as well as re-organisation of transport routes and schedules based on different perceptions of the value of travel time.

Type of action	Research and Innovation action
Deadline	**1 February 2017**
Call identifier	H2020-MG-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2104-mg-8.5-2017.html

ART-07-2017
Full-scale demonstration of urban road transport automation

Specific challenge

Fully automated road transport systems have the potential to revolutionise urban transport offering high quality public transport services which are not feasible with conventional public transport systems. Low speed full automation systems have been demonstrated in several European cities. However full-scale demonstrations are still necessary to prove the reliability, safety and robustness of fully automated road transport systems in complex scenarios in urban areas. In addition, i**t is necessary to address the remaining questions, such as user acceptance and legal framework and to develop business cases to make fully automated urban road transport systems economically viable.**

Scope

Proposals should demonstrate fully automated road transport systems which should be complementary to mass transit to reach low to medium demand areas with high quality transport services. A fleet of automated road transport vehicles (e.g. light weight vehicles, cyber cars, small buses) should be implemented at pan-European level in urban and/or sub-urban areas. The demonstrated systems should be fully integrated into existing public transport systems and should provide evidence of their safety, reliability and fault tolerance in complex traffic scenarios (with automated and non-automated vehicles, pedestrians, cyclists, powered two-wheelers, etc.)
Proposed actions should assess the user acceptance and effects on transport demand and modal transfer. **Attention should also be paid to the analysis of socio-economic impacts and benefits of urban automated vehicle fleets as part of an integrated transport system, such as improved accessibility of persons with reduced mobility, elderly, etc.** Gender specificities should be considered. Recommendations for local and national authorities to deploy fully automated road vehicles should be developed.
Active participation of SMEs is strongly encouraged.
In line with the Union's strategy for international cooperation in research and innovation, international cooperation is encouraged. In particular, 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 of between EUR 10 to 15 million each would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Actions are expected to demonstrate the reliability, safety and robustness of fully automated road transport systems in complex scenarios in urban areas. They should develop innovative solutions for the safe and smooth integration of automated vehicles into the existing transport system in urban areas, as well as door-to-door public transport services, which can change radically the mobility paradigm of European cities. Therefore, actions will contribute to the development of modern, more efficient urban transport systems, with reduced impacts on climate change, air pollution, noise, health and accidents.
Moreover, actions will provide detailed knowledge and recommendations which enable transport authorities, policy makers and business to invest in urban automated vehicle systems and support the development of innovative mobility services (e.g. car sharing, road train systems, etc.).

Type of action	Innovation action
Deadline	**1st stage - 26 January 2017** **2nd stage -19 October 2017**
Call identifier	H2020-ART-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2061-art-07-2017.html

Opportunities for Researchers from the Socio-economic Sciences and Humanities (SSH) in Horizon 2020

Societal Challenge 5
Climate action, environment, resource   efficiency and raw

SC5-07-2017
Coordinating and supporting research and innovation actions on the decarbonisation of the EU economy

Specific challenge

There is a constant need for strengthening the information flow and enhancing the exchange of experience on on-going and future European and international research and innovation activities concerning low-carbon transition scenarios, as well as for maintaining continuous dialogue between the scientific community, **economic and societal stakeholder groups** and policy-makers in order to better support EU policy processes targeting the decarbonisation of Europe's economy between 2030 and 2050 and beyond.

Scope

The action will support the work of a panel of personalities, expected to be established by the European Commission. The panel's role will be to provide strategic-level, **trans-disciplinary advice** to the European Commission in this area of research and to ensure co-design through appropriate engagement of relevant stakeholders. This action should create a network of leading scientists and relevant research projects in the field of EU decarbonisation strategies, contributing to the definition of robust scientific statements and coverage of knowledge gaps. The project should from an early stage establish links with policy-makers and stakeholder groups at EU, national and sub-national level, in order **to inform policy and business processes** and set up feedback loops. The project should provide foresight analysis on emerging issues, **produce sectoral and macro-economic syntheses emanating from results of EU-funded projects**, and elaborate recommendations on current and emerging policy-relevant issues. It should also engage in active communication and dissemination of results. This action will have to be implemented in close cooperation with the European Commission's Directorate General for Research and Innovation in order to allow for constant alignment with and support for policy initiatives. The Commission considers that proposals requesting a contribution from the EU of between EUR 2.5 million and EUR 3 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Up to one action shall be funded.

Expected impact

Project results are expected to contribute to:

• enhanced coordination of European and Member State research and innovation actions on decarbonisation pathways and scenarios;
• better informed **policy and business processes within a cross sectoral and integrated perspective**, based on the latest scientific findings and recommendations for managing a low-carbon transition at various levels;
• the introduction and further development of the notion of **cost-effectiveness**, resulting from better medium-to-longer term planning and coordination.

Type of action	Coordination and Support Action
Deadline	**7 March 2017**
Call identifier	H2020-SC5-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2195-sc5-07-2017.html

SC5-08-2017
Large-scale demonstrators on nature-based solutions for hydrometeorological risk reduction

Specific challenge

Economic damage costs from extreme hydro-meteorological events (such as floods, droughts, storm surges, landslides) are increasing throughout Europe. Further investment in traditional, engineering solutions for risk prevention is no longer possible in several cases, due to the very high costs, and to the limited flexibility offered by such solutions to cope with extreme events for which changes in frequency, intensity and distribution may be expected due to climate change. Nature-based solutions can be flexible, multi-beneficial alternatives to traditional engineering, but adequate proof-of-concept for their upscaling and replication is lacking.

Scope

Via large-scale demonstration, projects should aim to:

• develop, demonstrate and deploy innovative systemic and yet locally attuned nature-based solutions, including green and blue infrastructure and ecosystem-based management approaches, in rural and natural areas, including particularly sensitive ones such as mountainous and coastal areas, for hydro-meteorological risk reduction at watershed/landscape scale. Solutions should be incorporated in an integrated design concept for land management and planning and be co-designed and co-deployed in a **trans-disciplinary multi-stakeholder and participatory context with due consideration to and integration of social and cultural aspects** and climate change effects;

• develop a comprehensive framework for the comparison of green and blue/grey/hybrid hydro-meteorological risk prevention and reduction solutions, taking into account wider land use and adaptation to the effects of climate change, considering impacts on landscape, **local communities and cultural acceptance** as well as co-benefits such as biodiversity conservation/enhancement, more sustainable local livelihoods, human health and well-being, climate change mitigation, etc.;

• identify and assess barriers related to their **social and cultural acceptance** and **policy regulatory frameworks** and propose ways to overcome them;

• develop methodologies , tools and best practices enabling the replication and up-scaling of nature-based solutions in different contexts, including replication of innovative investment strategies, **governance and business models**, as well as performance assessment tools, protocols and standards for the design, operation and maintenance of these solutions;

• provide a consolidated evidence-base on co-development processes, performance standards, **cost-effectiveness**, operational requirements, life cycle costs and the multiple benefits of nature-based **solutions as economically, socially, culturally** and environmentally viable alternatives for hydro-meteorological risk reduction and climate change adaptation at watershed/landscape level, also considering the potential and limits of the solutions under different circumstances and conditions;

• establish long-term sustainable data platforms considering existing initiatives and alternative options, such as pan-European web-based repositories, securing open, consistent data and performance measurements and interoperability of data infrastructures to ensure effective communication, public consultation, exchange of practices and sharing of experiences and a continuous building up of the 'knowledge portfolio' in the longer term (i.e. following project completion).

Proposals shall address all of the above points. The contribution of **social sciences and humanities** to these processes is considered necessary. Projects should envisage resources for clustering with other projects funded under this topic, under topic SC5-10-2016, and relevant topics on sustainable cities through nature-based solutions funded under the 'Smart and Sustainable Cities' call in part 17 of this Work Programme. Because of the substantial investments that might be necessary for implementing the nature-based solutions, additional or follow-up funding (private or public) should be sought, including from relevant regional/national schemes under the European Structural and Investment Funds (ESIF), in particular under the European Regional Development Fund (ERDF), or other relevant funds such as the Instrument for Pre-accession Assistance (IPA II). To this end, projects could seek contact with ERDF/IPA managing authorities and with the authorities who developed the Research and Innovation Smart Specialisation Strategies (RIS3). Please note, however, that reference to such additional or follow-up funding

will not lead automatically to a higher score in the evaluation of the proposal. In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), cooperation and synergies with similar international demonstration activities nature-based solutions for hydro-meteorological risk reduction and climate change adaptation, funded under different financial arrangem or programmes, is encouraged to facilitate mutual learning, sharing of experience, networking and follow-up. The project proposals c already indicate which interested regions/countries or other partners have been pre- identified for contact during the project. Commission considers that proposals requesting a contribution from the EU of at least EUR 12 million would allow this specific challeng be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Projects are expected to contribute to:

• the EU being recognised as a leader in nature-based solutions for hydro-meteorological risk reduction and climate change adaptation thus enhancement of territorial, **socioeconomi**c and ecological resilience and coherence;

• the mainstreaming of nature-based solutions in land use planning, landscaping and territorial policies due to the provision of approp tools and best practices to assist decision makers, designers, competent authorities, planners, practitioners, enterprises, citizens and c stakeholders in reducing hydro-meteorological risks and in climate change adaptation;

• development of an integrated EU-wide evidence base and a European reference framework on nature-based solutions and **the stimula of a new culture** for 'land use planning' that links the reduction of risks with local and regional sustainable development objectives;

• **enhanced market demand** for nature-based solutions for hydro-meteorological risk reduction and climate change adaptation, due to availability of protocols and standards for their design, operation, maintenance, performance monitoring and measuring of their bro **economic, societal** and environmental **benefits**;

• improved disaster risk management, due to enhanced capacity for providing quantitative assessments of nature-based solutions disaster risk reduction and climate change adaptation;

• **reduced human and financial costs** due to better and more flexible disaster risk management with nature-based solutions;

• enhanced implementation of EU policies for disaster risk prevention and reduction, for climate change adaptation, for Green Infrastruc and for water management (Water Framework Directive, Floods Directive, Blueprint to safeguard Europe's water resources), as well a international frameworks, such as the Sendai Framework for Disaster Risk Reduction 2015-2030. Contribution to the priorities of the Water.

Type of action	Innovation action
Deadline	**1st Stage: 7 March 2017** **2nd Stage: 5 September 2017**
Call identifier	H2020-SC5-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2188-sc5- 08-2017.html

SC5-19-2017
Coordination of citizens' observatories initiatives

Specific challenge

Citizens' observatories are community-based environmental monitoring and information systems which build on innovative and novel Earth observation applications embedded in portable or mobile personal devices. Thanks to the vast array of ubiquitous information and data they can provide, citizens' observatories can enable authorities to obtain evidence and inform environmental policy making, complementing more authoritative in-situ observation and monitoring networks and systems with a very positive cost-benefit ratio. Citizens are also provided with new opportunities to address environmental issues affecting them and to influence local decision making. **Social innovation** can be achieved through these novel partnerships which involve the private and public sector, NGOs and citizens, offering **new business opportunities for SMEs** in the fields of Earth observation and mobile technologies. These activities are, however, at an early stage and still largely rely on research funding. Risks and opportunities still have to be explored, which requires a comprehensive analysis of their full potential and applicability. There is a need to create a citizens' observatories knowledge base in Europe across disciplines to avoid duplication, ensure interoperability, create synergies and facilitate its gradual uptake by environmental authorities. With an increasing number of citizen-based initiatives, a coordinated approach for the integration of citizens' observations is becoming necessary in Earth observation systems at local, regional and also global level.

Scope

This action should bring environmental citizens' observatories and related communities together with existing relevant activities to benchmark and pinpoint best practices, identify barriers and synergies, promote standards, facilitate integration and stronger cooperation solutions, and stimulate a gradual uptake by public authorities of these new technological and methodological approaches. Relevant issues such as technologies and **methodologies for engaging citizens, social innovation opportunities**, sustainability approaches including the role of the European private sector, especially SMEs, as well as data management and interoperability of platforms should be addressed. A coherent approach should also be taken to ensuring the delivery and uptake of in-situ data and information coming from citizens observatories through GEOSS and Copernicus. Hence, proposals should include a broad range of stakeholders, including public bodies, private sector representatives, research institutions – including from **social sciences and humanities** – NGOs and citizens' associations. To address these points effectively, **social science research tools and methods will be required**. The Commission considers that proposals requesting a contribution from the EU in the range of EUR 1 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Up to one action shall be funded.

Expected impact
 The project results are expected to contribute to:
• improved coordination between existing environmental citizens' observatories and related activities at regional, European and international level;
• expanded geographical coverage and use of environmental citizens' observation through an effective promotion and uptake of best practices and standards;
• wider dissemination and uptake of efficient information and data management and preservation strategies for existing and future citizens' observatory platforms;
• increased opportunities for SMEs and businesses in the field of in-situ Earth observation systems;
• better awareness and use of the citizens' observatories by environmental and disaster risk and emergency management decision makers;
• increased value added of GEOSS and Copernicus through the use of citizens' observations;
• a leading role for Europe in the integration and uptake of citizens' information in GEOSS.

Type of action	Coordination and Support Action
Deadline	**7 March 2017**
Call identifier	H2020-SC5-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2196-sc5-19-2017.html

SC5-22-2017   *Dedicated Topic*

Innovative financing, business and governance models for adaptive re-use of cultural

Specific challenge

Due to economic problems and social change many historic assets have been facing functional redundancy. These assets are mostly churches no longer used for worship, industrial buildings no longer used for manufacturing, farm buildings no longer used for agriculture, cultural landscapes which are degrading etc. In most instances, the costs for the adaptive re-use of these assets cannot be supported by the public sector or by traditional private sector models relying on return on investment. Innovative financing, business and governance models would fill up this "investment gap" and enable the maintenance of the historic fabric, its integration with the modern world and thus the appreciation of heritage inherent values and qualities by contemporary societies through optimal adaptive re-use practices.

Scope

Projects should:
• map and analyse existing successful business and management models, financing mechanisms and governance arrangements for adaptive re-use of groups of cultural heritage monuments, cultural landscapes, buildings or sites;
• develop and validate methods, tools, indicators and matrixes that would allow for the replication and up-scaling of successful adaptive re-use practices;
• propose innovative governance arrangements also fostering increased participation by citizens, business models, financing instruments (e.g. crowd funding), new forms of partnerships(e.g. public-private, community-based etc.) and strategies for mobilising new investments for adaptive re-use of groups of cultural heritage monuments, buildings or sites and develop and validate methods, tools, indicators and matrixes for assessing their effectiveness and performance;
• identify cultural, social, economic, institutional, legal, regulatory and administrative barriers and bottlenecks at city, regional, national and EU level for adaptive re-use of groups of cultural heritage monuments, buildings or sites, and recommend ways to overcome them;
• develop and validate tools with a replicability potential in different local conditions to assist decision-making processes, using multi-stakeholder approaches, involving local communities and underpinned by social science and humanities expertise, for adaptive re-use of cultural heritage. Proposals shall address all of the above points and efforts should be made to link cultural with natural capital where appropriate. Projects should envisage resources for clustering with other projects financed under this topic as well as other projects under the "Cultural Heritage for sustainable growth" part of this call and – if possible – also under other relevant parts of Horizon 2020. The Commission considers that proposals requesting a contribution from the EU of up to EUR 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

Projects are expected to lead to:

• more integrated approaches and strategies for the preservation and valorisation of cultural heritage through its adaptive re-use (securing thus its sustainability) comprising innovative finance (with high leverage capacity), business models and institutional and governance arrangements that foster multi-stakeholder involvement, citizens' and communities engagement and empowerment;

• new investment and market opportunities for businesses in the adaptive re-use of cultural heritage assets, both tangible and intangible, including opportunities for stimulating the creation of start-ups;

• an enabling context for the development and wide deployment of new technologies, techniques and expertise enhancing industrial competitiveness and contributing to economic growth, new skills and jobs;

• innovative adaptive re-use blueprints for culturally, socially and economically inclusive societies with reduced financial and operational burden for the public sector in heritage conservation.

Type of action	Research and Innovation action
Deadline	**7 March 2017**
Call identifier	H2020-SC5-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2193- sc5-22-2017.html

Opportunities for Researchers from the Socio-economic Sciences and Humanities (SSH) in Horizon 2020

Societal Challenge 6

Europe in a changing world: Inclusive, Innovative and Reflective Societies

CO-CREATION-01-2017 Education and skills: empowering Europe's young innovators

Dedicated Topic

Specific challenge

Creativity, entrepreneurial skills, risk taking adaptability and innovation capacity, problem solving skills, skills related to effective teamwork and sharing information and knowledge, may all be key competitive advantages for Europeans, starting from young children. To make the best of this potential, it is essential that schools and educational institutions, as well as non-formal ways of learning, empower Europe's young innovators with the skills they need from early on in life. Empowering the young through skills for innovation and entrepreneurship, including social entrepreneurship, is particularly important to building more inclusive societies giving opportunities to all, including young innovators from less privileged backgrounds or those with disabilities in order to address inequalities. The challenge to be addressed by this topic is to improve learning and teaching in innovation related skills for young boys and girls at the age of primary and secondary education through the design and piloting of new innovative ways of skills education, including technologies, processes and relations.

Scope

New approaches for educating skills need to be developed, piloted and scaled up. There is a lack of sufficient collaboration with entrepreneurial stakeholders in teaching and students practice, and a lack of inter-generational learning. Young people need to be supported with tools, resources and an open environment encouraging experimentation and the development of joint projects including based on interdisciplinary approaches. Effective supporting schemes should guide young people into their entrepreneurial journey.
Building upon existing initiatives in Europe, the consortia (which shall include entrepreneurial partners, and may include partners from civil society and the social economy) shall develop new approaches and innovative models for skills education targeted at young people.
The involvement of young people in the activities of the consortium (not just as recipients of the outputs) is essential. This may include new inter-active methods and new pedagogical modules that will be easily accessible and part of an open platform, which will aim to reach out to thousands of schools and learning sites across Europe. The innovative schemes and new modules will enable the young, future innovators, to develop new capabilities and experimentation attitudes and turn their ideas into successful entrepreneurial and social
Projects.
Promising new models combining technologies with organisational change and building new participatory relations in learning processes - can be tested and adapted in different regions. The innovative models shall be piloted through the schools and/or other businesses and communities, providing young people with a practical set of creative and entrepreneurial skills that will open them up to a world of new possibilities and future jobs.
Within the scope of the action is to develop new models, to investigate and to test new mechanisms that the young generation is engaging in, for addressing societal challenges coupled with an entrepreneurial spirit as well as effective ways and mechanisms for collecting and promoting innovative ideas from the young people. Particular attention should be paid to gender issues. The action should take into account and coordinate with, where appropriate, with other EU and national initiatives in the field, such as those supported in the context of Erasmus+ strategic partnerships and policy experimentation.
The Commission considers that proposals requesting a contribution from the EU in the order of EUR 2.5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

The action will pave the way for innovating learning and teaching practices, so that innovation skills are part of a person's education, formal and informal, at schools and interacting communities as well as on-line. This will boost innovation and entrepreneurship capacity, bringing together many stakeholders including from education, traditional business, the social and service economy and volunteering schemes. It will thereby empower young innovators across Europe, provide for innovative business models and give them tools to engage in society and channel their energies to create opportunities for the future. In the long run the topic contributes to higher youth employment and to creating

new markets and new jobs. The knowledge generated as a result of the actions should be

disseminated across Europe to benefit the largest numbers of younginnovators.

Type of action	Innovation Action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CO-CREATION-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3071-co-creation-01-2017.html

CO-CREATION-04-2017
Applied co-creation to deliver public services

Specific challenge

While efforts have been made to make public services user-friendly and reduce the administrative burden, for example by making them increasingly available online, studies show that service design often does not meet the expectations of citizens and businesses, who require more usability, **responsiveness and transparency**, reflecting the different needs of users - some of whom may not be computer literate - and the variety of activities public services encompasses. Weak service design and high administrative burden often lead to **non-use or non-take up by citizens and businesses of the public services and benefits available to them**.

The **profound understanding of end users including specific groups, like disabled elderly people, single parent families, disadvantaged citizens or immigrants,** the re-design of services to respond to their capacities, needs and preferred delivery channels are important elements for governments to prove their ability to fulfil the needs of citizens and businesses. The old 'one-size-fits-all' approach is not appropriate for all spheres of the public sector; complex and varied service delivery; **historical, cultural and socio-economic backgrounds play an important role in the expectations of interactions with public services**.

The steady integration of new technologies into the **everyday lives of people, businesses and governments** is helping to open up public administrations, offering opportunities for more collaborative and participatory relationships that allow relevant stakeholders (i.e. citizens, business and non-governmental organisations) to actively shape political priorities, collaborate in the design of public services and participate in their delivery to provide more coherent and integrated solutions to complex challenges. Co-creation of public services in this context is a public service that is provided by government, citizens, NGOs, private companies or individual civil servants, in collaboration or not with government institutions, based on government or non-government data or services.

Collaborative service creation (co-creation) requires public service actors to engage with stakeholders in the design, production and delivery phases, to gather the necessary user insight, re-define their operational processes and identify **appropriate sustainability models** to deliver an effective high quality service. Given the opportunity to actively participate in service delivery, stakeholders (citizens, businesses, civil society organisations, social partners, etc.) can contribute distinctive resources (time, effort, ideas and expertise) and can keep public officials accountable. The increased sense of ownership, greater efforts for the sustainability of public initiatives, as well as more creative ideas lead to an important shift in the role that civil society and the private sector can play in contributing to good governance. It is also expected to help better prioritise and target public spending to the most important purposes and urgent needs.

Scope

Innovation actions will pilot the co-designing and co-creation of public services, using ICT and relying on open data or open public services. They need to bring together a variety of actors in society, such as for example public authorities, citizens, businesses, researchers, civil society organisations, social innovators, social entrepreneurs, social partners, artists and designers, to co-create demand-driven, user-friendly, personalised public services and make effective decisions. Proposals need **to identify the particular policy area, public institution or function to assess the suitability of incorporating co-creation and the transferability of good practices.** Piloting needs to be carried out in a representative set of Member States in order to **test different cultural/socio-political context** for co-creating public services. Proposals need to address several of the below aspects:

• Using open services provided by public administrations and allowing third parties to design, aggregate, produce and deliver in collaboration with or without government value added complementary or new public services;

• Demonstrating how government can act as a broad, open collaboration 'platform' in practice by demonstrating and/or piloting use cases for sharing data, services, tools, cloud infrastructures and assets between public administrations (e.g. experiments of hybrid teams in government) and resulting in re-usable services or processes;

• Demonstrating how government can act as a broad, open collaboration 'platform' in practice by demonstrating and/or piloting use cases for sharing data, services, tools and assets with third parties and generating new or complementary services or making decisions;

- **Demonstrating how the perspectives of citizens, service users, and others can be taken on board through, for example, the use of design principles or behavioural analysis, in the creation of new public services or policies;**
- **Demonstrating how transparency of government data, information or processes and the engagement of relevant stakeholders can lead to accountability and trust;**
- **Developing business models** that would enable financial remuneration for the public as data (or other asset) providers. Proposals need to ensure that **privacy and data protection** issues have been appropriately addressed and that the tools piloted could be re-used. Any policy area may be subject to the piloting, including social policies and those addressing the vulnerable. Proposals need to demonstrate the feasibility of their service or solution through a number of real-life pilots, demonstrate the concrete commitment of the piloting sites and need to propose a sustainability approach or model for the period beyond the project.

The Commission considers that proposals requesting a contribution from the EU of between EUR 4 and 5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Proposals need to demonstrate that they can achieve impact beyond the project phase, inter alia, in terms of efficiency and effectiveness gains, transactional cost reduction, **productivity growth**, stimulating **the growth of new businesses, greater transparency** leading to reduced errors and **less public spending**, administrative burden reduction, **improved societal evidence**, increased take-up of electronic public services by citizens, user satisfaction as well as in terms of the **democratic dimension**, such as increasing level of civic participation and **social inclusion**. Quantitative and qualitative aspects are to be taken into account. Additional impact may be improving the skills and adding new skills of public sector employees as well as third parties being agents and enablers of change and acting as innovation actors.

Type of action	Innovation Action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CO-CREATION-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3072- co-creation-04-2017.html

CO-CREATION-06-2017
Policy-development in the age of big data: data-driven policymaking, policy-modelling and policy-implementation

Specific challenge

As societal challenges are growing more complex and interlinked, public policy innovation and experimentation, using ICT can improve the effectiveness, efficiency and the quality decisions in the public sector. Effective and reliable policies need to consider the available data (including its structure and topology) and evidence to ensure accurate and meaningful information. Big data offers many opportunities; using data analytics to generate new insights, increasing predictive power and **identifying unexpected patterns and relationships that can help inform policy making**. For instance data analytics tools can also help public authorities to better detect and evidence patterns of non-compliance in many policy areas affecting the health, the safety and the **welfare of citizens in the internal market of goods, services and persons.** Effective processing power and expertise are widely used in the retail and commercial sector, the challenge is to create effective resources to make this available to governments, allowing policy choices to become more evidence-based and analytical. In addition, **open policy-making and the integration of the citizens' perspective through the effective engagement of relevant social actors** - for example over online platforms or by **crowd-sourcing** - can potentially generate vast amounts of data, which can allow policy options to become more informed. Furthermore, open policy-making can support a participatory, open and collaborative government vision. Besides simulations, perceptions data pose a further promising source of information. Conducted on a regular basis, e.g. by the Eurobarometer, identifying perceived bottlenecks in relation to policy reforms as well as assessing the perceived performance of past reforms becomes feasible; in some cases these official statistics may be complemented by new sources of data. Taken together, this may lead to developing second generation data tools and assessment for more targeted **policy design**. It also offers opportunities for different communities to take ownership of the use and analysis of data in an age where they are at risk of being alienated by too much information. In addition, policy implementation can significantly benefit from efficient enforcement and monitoring tools that are informed by data from various sources.

Scope

In order to enable governments - at all levels - to benefit from the availability of relevant data and thereby introduce and implement effective policies, new or improved methods and tools are needed to support and establish new types of evidence-informed **policy design and implementation** and to facilitate the interpretation of big data for public communication, including new outcome-based. For public administrations to experiment with the possibilities offered by big data – for example through policy modelling, monitoring, enforcing, simulation, testing, analysis and policy compliance – there is a need to thoroughly **understand the legal frameworks and to take into account sociological, cultural, political, legal and economic as well as behavioural aspects.** Proposals should also elaborate on the relationship between evidence-based policy-making and citizens' participation, integrating the analysis of participatory elements.

a) Research and Innovation Actions:

Proposals need to address several of the following aspects:
- Methodological development for using big data in policy development, examining the extent to which policy-making structures and systems are ready to absorb and analyse big data;
- **Critical interdisciplinary assessment of the economic, political,** epistemological, **ethical and legal premises** and implications of big data practices (including algorithmic governance, smart cities, etc.), allowing for the reflection on the potential benefits and risks;
- Develop scalable and transferable methods and re-usable tools for compilation, analysis and visualisation of data, including relevant open, official or certified data;
- Develop scalable and transferable methods and re-usable tools for mining, compilation, analysis and visualisation of data from any source, including **data related to social dynamics and behaviour**;
- Develop scalable and transferable methods and re-usable tools for data curation, metadata schemes, data linking or

for reconciliation of multiple data sets to render coherent narratives;

- Understanding the implications of the increasing materiality of data with the development of the Internet of Things and its implications for the sustainability of government's effective use of big data for improved policy making in the longer term;
- Develop scalable and transferable methods and re-usable tools for opinion-mining of large data sets in order to avoid the situation that the bigger the data, the less clear how they have been produced;
- Develop scalable and transferable methods and re-usable tools for policy modelling and simulation to improve the predicative analysis capacity of governments;
- Develop scalable and transferable methods and re-usable tools for iterative policy design and implementation (e.g. through the greater use of randomised controlled trials based on **behavioural science**);
- Develop scalable and transferable methods and re-usable tools for policy enforcement and compliance monitoring tools.

Proposals should apply their methodology to policy areas addressing societal challenges (e.g. environment, **migration**, **radicalisation, inequalities, unemployment, internal market obstacles to the free movement of persons, goods and services**). When using open and big data in order to enlarge the evidence base for effective policy-making, principles such as independence, quality, coherence and consistency, confidentiality, impartiality and objectivity as well as representativeness and extrapolation to meaningful populations need to be considered. **Data protection, ethical and privacy issues** will also have to be addressed as well as **ethical issues around storage, use and re-use of data**. Application and improvement of existing quantitative tools is preferable. **Sociological as well as behavioural science approaches are encouraged, especially where they aim to develop a deeper understanding of how public policy and services interact with citizens.** If relevant, proposals also need to analyse the suitability of the proposed software.

The Commission considers that proposals requesting a contribution from the EU of between EUR 4 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.

b) Coordination and Support Action

The activities should aim at encouraging networking of relevant stakeholders and teams working in the area of data- driven policy-making and policy-modelling and to support constituency building. Following an assessment of the needs of public administrations, the multidisciplinary network will identify methods, tools, technologies and applications for their implementation in the public sector, taking into consideration activities also undertaken outside the European Union and considering specificities relevant to different policy domains of public activity. The activities will conclude with the outlining of a roadmap for future research directions.

The Commission considers that proposals requesting a contribution from the EU in the order of EUR 0.5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Proposals need to demonstrate the impact to be achieved after the project phase, inter alia, in terms of improved **public policy** effectiveness, efficiency gains, precision gains, improved consistency, and reliance on evidence leading to increased policy compliance as well as in terms of the **democratic dimension**, such as greater **transparency**, **good governance, increased trust in and the perceived legitimacy of government**. Additional impact may be increased accessibility to the non-governmental players.

Type of action	Research and Innovation action, Coordination and support action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CO-CREATION-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/307 3-co-creation-06-2017.html

Dedicated Topic

CO-CREATION-07-2017
Towards a new growth strategy in Europe – Improved economic and social measurement, data and official statistics

Specific challenge

Over the past decades, the insight has grown among national, European and international policymakers that policy action cannot be solely guided by reference to gross domestic product and its growth without integrating intangible investment, social and environmental dimensions, individual well-being and qualitative dimensions in the GDP. The changing characteristics of economies and societies in Europe require inclusion of multiple dimensions, including gender and age, new measurement and data for developing new policy for economic growth and well-being.

European growth prospects, job creation and well-being of citizens largely depend on economically successful innovations which address global and EU challenges and create new opportunities for firms. However, the importance of capital stock developments and investments, as well as labour skills, at a detailed industry level and for all types of tangible and intangible assets has not been fully integrated into the analysis of EU innovation and growth performances mainly due to data issues. Better measurement of tangible and intangible investments together with labour skills, in existing categories as well as inclusion of potentially relevant asset categories outside the current asset boundary (such as economic competences, organisational capital, co-creation, skills, marketing assets, firm specific human capital investments, culture and arts) – by taking gender and age into account - would improve the understanding about growth in knowledge-based, globalised and connected economies. Moreover, innovation driven growth strategies require a better understanding on the roles of services (including business services) and the use of ICT and internet at industry level. Equally vital for new growth strategies is a better understanding of the complementarities of firms' investments in global value added chains and the creation of new dynamic market industries.

Europe needs to understand and analyse the changing frame of references for the evaluation of the state and development of societies. Official statistics need to be modernised to provide a more complete picture through the incorporation of new metrics, based on new sources and data collection methods, in coherent frameworks delivering consistent evidences and narratives to policymakers. New sources (including social media) offer unparalleled opportunities to elicit information on welfare, wellbeing and societal progress by other means than traditional sample surveys and require the development of modern, innovative methods for official statistics. With all strata of the population being in scope, methodologically sound official statistics ensure that for e.g. a "silent majority" (those who do not tweet) or marginalised minorities (those who for e.g., lack bank accounts and credit cards and hence leave no trace in certain electronic systems) remain visible to policymakers when innovative, non-traditional sources are used to measure progress. The protection of individual data is furthermore a concern that should be taken into account.

Scope

a)   Research and innovation actions
Research aims to improve the availability and quality in the data on tangible and intangible investments, capital stock and the composition of labour inputs at industry level and/or firm level which in longer perspective qualifies for the endorsement from official statistics.

Compilation of data on tangible and intangible investment categories within the existing asset boundary of the national accounts standards (SNA 2008/ESA 2010) need to be targeted and supplemented with national sources and other types of calculations. Creating new data for potentially relevant asset categories outside the current asset boundary at a detailed industry level need statistical work together with implementing strategies and novel approaches to minimise cost and burden of compiling. Piloting and proof of concepts can be useful. All efforts to improve data availability and quality need to be consistent with the current statistical classification of economic activities (NACE Rev.2), National Accounts concepts, methodologies and quality criteria. It is important to use internationally harmonized official source statistics. Future extensions of official statistics can benefit from the already existing work on tangible and intangible capital stocks and labour input outside the official statistical systems by improving their quality in line with statistical quality criteria. It is essential to work out a strategy in which the statistical community cooperates with the economic and other social sciences communities to integrate the improved and/or newly created data into established official statistics to guarantee their lasting reproducibility.

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

b)   Coordination and Support Action

The coordination and support action should focus on the incorporation and alignment of new, possibly unofficial and unstructured, sources with established official statistics. It should build on the rich body of results in the alternative growth approaches, social, environmental and sustainable indicators, new consumption models and "Beyond GDP" domain – in consistency with National Accounts - covering both novel domains and non-traditional sources as well as innovative data collection approaches. It should incorporate a strong statistical methodological component focusing on obtaining consistency, representativity/social inclusion (in particular when innovative data collection methods are used) and measures of uncertainty. Piloting and proof of concept should be at the forefront. Disaggregation of statistics - geographically, or by other domains (e.g. identifying vulnerable population groups) - to provide greater insights and providing evidence allowing more focused policy decisions should be covered, as should metadata and other aspects of quality of statistics. At the same time data protection concerns should be addressed.

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

Expected impact

Better data and official statistics should improve our understanding about the changing nature of overall investment and growth dynamism in Europe. Widening of the concept of investment should bring insights for the European growth strategy and reveal cross-country differences in growth and productivity performances taking into account the role of tangible and intangible capital in the modernisation and competitiveness of EU industries and services. Moreover, through the investigation of the practical applicability of new sources, frameworks and methods for official statistics across a wide range of aspects regarding social and sustainable progress will provide a coherent framework of reliable evidence to the benefit of society. Public statistics and measurements being more explorative and future-orientated should provide new innovative policy support frameworks in "Beyond GDP" perspective.

Type of action	Research and Innovation action, Coordination and support action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CO-CREATION-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3070-co-creation-07-2017.html

REV-INEQUAL-09-2017

Dedicated Topic

Boosting inclusiveness of ICT-enabled research and innovation

Specific challenge

The deployment of information and communication technologies induces changes that impact individuals, societies and the environment in profound and pervasive ways. Harnessing the expertise of social sciences and humanities (SSH) in ICT-related research and innovation is key to contribute, notably, to cohesion, fairness, and inclusiveness. Although the need for a constructive, reflective and critical interactions between social sciences and humanities, on the one hand, and technological disciplines, on the other hand, is widely acknowledged, it is a challenge to make it happen and ensure that insights and innovation stemming from both perspectives join up in order to deliver inclusive ICT-enabled innovation. It calls for a smart approach to multiple disciplinarity that combines different tools and relies on the dynamic uptake of social sciences and humanities' perspectives. With this in mind, a structured distributed approach to the mainstreaming of social sciences and humanities across all topics aiming at ICT-related research and innovation has been set up. This approach strives to nurture a horizontal and mutually enriching relationship between SSH and ICT communities. For responsible and inclusive innovation to come true, one has to move beyond a reactive and risk-based approach, and encourage ongoing critical accompaniment of this innovation, rather than seeking mere acceptance of technological artefacts. This expands the remit of what is expected from SSH expertise. Instead of being confined in a "watchdog" or an "airbag" role for S&T developments, SSH is itself a source of innovation.

Scope

This topic calls for the coordination and support action that will bring life to the distributed and structured approach designed to ensure a responsible approach to research and innovation thought the uptake of SSH expertise across all H2020 areas leading to ICT-related innovation. It should act as a "hub" and activate the constructive interactions of SSH research with the ICT-related projects across H2020.

The purpose of the hub is to stimulate responsible and inclusive ICT research and innovation by encouraging the uptake of the SSH expertise in ICT-related projects and by coordinating and supporting the embedded expertise within the H2020-funded ICT-related projects, as well as linking these H-2020 projects with the relevant SSH expertise and initiatives both in Europe and in the world, to ensure that this important knowledge basis is fed into the H2020- funded ICT related research and innovation. The coordination and support action is expected to generate in a collaborative way a shared understanding what it takes for ICT research and innovation to be responsible and inclusive, and to make it happen.

In terms of <u>coordination </u>efforts, the hub is expected to ensure an active dialogue and the sharing of experience among ICT developers, SSH researchers and other stakeholders (NGOs, citizens and users e.g.) across H2020 ICT-related projects20. It is also expected to channel the fruits of this dialogue into discussions with policymakers, into the shaping of future research agendas, and into a reflexive assessment of the SSH research practice in the remit of the digital transition.

In terms of its <u>supporting </u>function, the hub will catalyse information sharing about activities in Europe that are enhancing responsible and inclusive approaches to ICT-related research and innovation. Drawing on ongoing developments, it will provide tools and advice for fostering responsibility and inclusiveness of ICT research and innovation. It will support the visibility of the relevant activities through sustained communication efforts (annual conferences, awareness raising, interactive web-based platform e.g.). It will encourage debates on the challenges raised by hyper connectivity and support experimental activities in interactive labs to stimulate reflection on cutting-edge issues.

The Commission will select one proposal only and considers that proposals requesting a contribution from the EU of EUR 3 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

- Improved level and efficacy of the interaction between SSH and ICT disciplines with a view to harnessing ICT-related innovation for reversing inequalities and contributing to responsible and inclusive innovation processes through SSH expertise;

• Improved take-up of societal concerns in ICT-related research and innovation;

• Increased worldwide visibility and influence of a European community with a shared vision for inclusive ICT research and innovation;

• The proposals themselves are expected to identify key measurable success indicators –to be further framed in the course of the project- that measure impact in community building and engagement, and uptake of inclusive responsible ICT research and innovation approaches within and beyond the consortium.

Type of action	Coordination and Support Action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-REV-INEQUAL-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2291-rev-inequal-09-2017.html

ENG-GLOBALLY-01-2017 *Dedicated Topic*

Strengthening Europe's position in the global context: science diplomacy and intercultural relations

Specific challenge

Europe is faced with numerous challenges that are increasingly global in nature and that have become of more immediate importance: peace and stability, migration, climate change, resource efficiency, health pandemics, etc. In many cases, responding to these challenges requires science-based evidence to inform decisions and joint international efforts that often include also scientific and technological cooperation. This is where science and diplomacy can join forces to form a 'soft power' tool in external policy – science diplomacy.

A main challenge is how to best link scientific expertise and cooperation with diplomacy and political influence to tackle major global challenges, promote knowledge and improve international relations. Science diplomacy has a particular added value in providing additional communication channels, particularly in stalemate situations and relations where few other mechanisms are feasible as well as on sensitive bilateral and multilateral issues. It promotes cooperation and conflict prevention, rebuilds trust and fosters shared understanding across countries, regions and cultures.

At the same time, the global context is characterised by competing understandings of central values and organising principles of society, including the meaning and direction of politics, economics, culture and ultimately human life. This context, and Europe's place in it, needs to be better understood and accounted for, from both a contemporary and a historical perspective, if the European Union and its Member States want to continue to constructively take part and strengthen their position in global discourses about what constitutes a "good society" and to understand how European policy interventions have been understood and perceived globally.

Addressing this challenge requires a great dose of (self) reflexivity about European diplomacy, Europe's own history and its interactions with third countries, regions, cultures and religions. It calls for a continued investment in fostering scientific, political, economic, social and cultural relations with other non-European global actors on all continents, and for ways in which to sustain scientific and intercultural exchanges that effectively enhance mutual understanding despite differences.

Scope

The research to address this challenge should in particular focus on the following key dimensions. It is expected to either comprehensively address one of these dimensions or to combine two or three of them. The research may also cover other issues relevant for addressing the specific challenge.

1)   Using science in the context of European diplomacy

In an increasingly complex global context, diplomacy as a social practice and profession is undergoing considerable changes. In both bi- and multilateral contexts, it is no longer sufficient for diplomats to be skilled in the art of negotiation, but they also need to have the capacity - alongside specialist knowledge – to take better advantage of science and scientific cooperation. How to better prepare and employ 'science diplomats' remains a particularly unexplored research area. The research efforts should focus on examining the interface between scientific advice and expertise and diplomats' performance and capacity. It should analyse where science diplomacy can have the biggest impact and how it can be instrumental in strengthening EU capacities and strategic awareness and in establishing better mechanisms so as to anticipate events early and to swiftly identify common responses. This should involve 'practitioners' of science diplomacy.

Research should explore under which conditions science and scientific cooperation have contributed positively or negatively to reaching foreign policy objectives (peace, security, trade, development, humanitarian aid) in various challenging contexts and draw recommendations for the development of new actions at EU and Member States levels.

2)   European culture, values and reflections of Europe's colonial past in contemporary European societies European values are to a large extent determinants of behaviour. As values stay behind many societal patterns and organising principles of society, the knowledge of the past development of European values as well as the knowledge of   their

contemporary status could help to understand many aspects of behaviour of contemporary European populations.

Multidisciplinary research associating scholars from the humanities and social sciences should adopt an outside-in perspective on contemporary European societies and trace the manifold non-European and European colonial era-related determinants of present-day societal and cultural diversity in Europe. In so doing, it should pay particular attention to the way societal and cultural influences from outside of Europe have historically been framed, contested, transformed, refused or taken up in European societies. It should elucidate how and why some of these influences were able to strongly impact European societies, values, activities and culture, and why others were less successful. Research under this topic will lead to a sound understanding of the social, cultural, linguistic and political legacies of colonialism within Europe and globally. It will assess their implications for policy-making, EU values and intercultural and interlinguistic dialogue, including the construction of plural cultural identities in nations and countries of Europe.

3) Global trends of secularisation and religious radicalisation and the role of Europe

Over the centuries the relations between the state and religion were of key importance for the functioning of state and society. Today's world is divided between secular states where government is officially separated from religion and states where this distinction is blurred, in addition to a few theocratic states. Whereas secular states are spread all over the world, and the religions professed and practiced by their citizens represent the widest possible spectrum of beliefs, the majority of countries which have embraced religion as their central norm are predominantly, although not exclusively, following Islam and are located in Africa, the Middle East, the Mediterranean region and Asia. A wide array of differences between official norms and practices still exist and should be taken into account in order to avoid undue generalisations between such countries and states. Taking account of the diversity of forms of secularism and religion, and adopting a historical perspective, this multidisciplinary social sciences and humanities research should investigate and compare various types and experiences of the functioning of secular and religion-based states in and outside Europe. Its findings should clarify reasons for, and pathways of, transformation of the role of religion in state governance, and should explain differing perspectives of cultural and political co-existence within the polity. Specific attention should be paid to the analysis of the impact of religious radicalisation all over the world and its consequences on states' peaceful coexistence as well as of the foreign fighter phenomenon. Research should also focus on what these trends mean in terms of internal and foreign policies for the European Union, its Member States and the state-religion relationships on the European continent. In this perspective, it could also include the possible forms of injustice, inequality and exclusion that may contribute to societal tension and marginalisation of certain minority groups, as well as the common elements between religion-based values system and secular systems that could help to counter radicalisation.

The Commission considers that proposals requesting a contribution from the EU in the order of EUR 2.5 million for each dimension would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Research under this topic is expected to impact the foreign policies of the EU and its member states and provide enhanced coordination between them and between the EU and its international partners. It will provide in-depth insights into the multiple ties and mutual influences between Europe and its neighbours, former colonies and other countries and regions, especially in the scientific, socioeconomic, historical cultural and religious spheres. It will also provide a sound understanding of contemporary European societies, of the multiple sources and expressions of diversity in the EU and of how non-European influences impact on the formation of European identities. Acknowledging the multiple sources of today's European diversity will have strong policy implications, not just for scientific and cultural policy, but also for immigration, integration, education and external policies. It will also facilitate Europe's future engagement with third countries.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-ENG-GLOBALLY-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2305-eng-globally-01-2017.html

ENG-GLOBALLY-02-2017 *Dedicated Topic*

Shifting global geopolitics and Europe's preparedness for managing risks, mitigation actions and fostering peace

Specific challenge

Europe's strategic and geopolitical environment is evolving rapidly, will always be an area of change, and in a manner that increasingly raises concerns. In recent years, violent conflicts have agitated the planet, many of them located in Europe's immediate neighbouring regions. These developments take place at a time when global geopolitics is undergoing long-term transformations challenging the traditional predominance of the West, while policies of economic austerity oblige EU Member States to manage scarce resources more effectively. These trends seriously challenge the Union's capacity for guaranteeing its citizens' security - one of its principal raisons d'être - while also jeopardizing its aspiration of promoting European values and interests abroad. In order to evaluate and promote its preparedness for playing its role as an effective security provider, to prevent escalation, to manage and understand risks and mitigation strategies for peace beyond its borders, the EU needs to understand the implications of recent global developments and assess them against its own capacities and willingness to make synergetic use of them.

Scope

The research to address this challenge should focus on one or two dimensions that have to be comprehensively addressed. The research may also cover other issues relevant for addressing the specific challenge.

1)   Recent global geopolitical developments and their implications for the European Union

Research under this dimension should adopt a comprehensive understanding of security and explore uncertainty. Based on this, it should identify and investigate long-standing and novel - global and regional - external risks facing the EU and its Member States, in connection with ongoing initiatives and programmes for risk identification and early warning. Crises in its neighbourhood (in particular East Europe and the southern Mediterranean), such as the rise of radical Islamic groups exemplified by the expansion of the "Islamic State" in Syria and Iraq, but also conflicts and risks in other regions of the world such as in South Asia (e.g. Afghanistan) and Sub-Saharan Africa (e.g. Mali) should be examined. Research should identify the most pressing risks and areas of uncertainty and unravel the causes, expressions and security-relevant consequences of such instable contexts.

It should examine possible inter-linkages between various geographically limited conflict situations as well as their embeddedness into regional and overarching global geopolitical developments. This necessitates a sound understanding of the political, socioeconomic, cultural and military contexts in which patterns of insecurity and uncertainty emerge, also from a historical and philosophical perspective. An inventory of contemporary risks should form the basis for identifying their implications for Europe and its security needs. Research should examine how potential risks, mitigation strategies and opportunities are perceived, and how they can, do and even should become part of novel approaches and policies in the EU, its Member States and its partners in geostrategic matters. It should investigate how the EU, its Member States and other relevant partners can act to better anticipate, prevent and respond to the identified risks, mitigation strategies and opportunities, and develop scenarios on possible EU activities using a range of policy actions and instruments, including diplomatic, economic, civilian and, if needed, military means.

2)   European Union's preparedness for managing risks and opportunities, fostering peace in a crisis-ridden context

Research under this dimension should comprehensively examine the European Union's and its Member States' willingness, capacities, instruments and channels for anticipating and responding to a large array of external threats. It should contrast the EU's legal basis for external security policies, including risk analysis and management, conflict prevention and resolution, post-conflict management and peace-building, to the actual practice, both prior to and after the onset of the economic and financial crises. Analyses should draw on comparative case studies from the EU's handling of various conflicts and crises (including humanitarian ones) across the globe. Research should develop criteria for effective security cooperation in the EU, distinguishing between objectives and instruments, whether military or non-military, and contribute to the ongoing development of early-warning systems to identify emerging risks. It should also identify the

political, socio-economic, technological and cultural conditions that enable or hinder the emergence of effective security cooperation in the EU. Based on this evidence, research should develop information sharing and decision support systems that facilitate cooperation, identify gaps and align the interests of diverse actors towards effective EU security policies, especially in the framework of its Common Foreign and Security Policy (CFSP). It should also provide insights on whether and how the EU can work synergistically together with individual third countries or international institutions like NATO.

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

Expected impact

Research under this topic will lead to an up-to-date appraisal of global and regional risks and, as such, of Europe's evolving security agenda in the light of recent geopolitical developments affecting its neighbouring regions (in particular East Europe and the southern Mediterranean), and the entire globe. It will generate critical and forwardlooking evidence of Europe's preparedness for effectively facing these threats, guaranteeing its citizens' security while managing risks and fostering peace abroad. Based on this evidence, it will provide recommendations on how to improve the EU's effectiveness as a domestic and global security provider.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-ENG-GLOBALLY-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/23 09-eng-globally-02-2017.html

ENG-GLOBALLY-03-2017 *Dedicated Topic*
The European Union and the global challenge of migration

Specific challenge

Migration is a central and common phenomenon in human history. The international migrant population in Europe is expected to increase in the future, due to economic and demographic factors, political unrest, conflicts and climate change. One aspect that has become increasingly clear in recent years is that, if the EU wants to successfully manage immigration flows at home, it needs to strengthen its cooperation with third countries of origin and transit of migrants, by fully addressing the root causes of migration and exploiting the potential of migration as a development enabler. In this vein, the European Council conclusions of June 2014 stress that migration policies need to become a stronger integral part of the Union's external and development policies through intensifying cooperation with third countries, while also calling for improving the link between the EU's internal and external policies. Particular account should be taken of the European Agenda on Migration25 and the European Council Conclusions of 23 April 2015 and 25/26 June 2015.

The migration crisis in the Mediterranean has put the spotlight on immediate needs. But it has also revealed much about the structural limitations of EU migration policy and the tools at its disposal. This is an opportunity for the EU to face up to the need to strike the right balance in its migration policy and send a clear message to citizens that migration can be better managed collectively by all EU actors. In recent years, important steps have been taken in this direction but their success, in areas like asylum/international protection, treatment of refugees, visas, control of borders or detention regimes, remains contested. It is thus essential that the EU continues to engage in a broad debate on the links between its migration policies and other policies with an external dimensions including, but not limited to its foreign and development policies. The European policy for asylum, refugees, visas, external border regime, detention centres should be assessed. Research should also make recommendations on how to tackle migrant smuggling and those who profit from it.

Scope

The research to address this challenge should focus on one or two dimensions that have to be comprehensively addressed. The research may also cover other issues relevant for addressing the specific challenge.

1) An integrated approach to migration and development

Building on existing studies, research should further elucidate the complex interrelation between and the implications of demographic trends, socio-economic development, environment and good governance on the one hand, and migration flows on the other, both in third countries of origin and transit of migrants, refugees and asylum seekers. Research should cover existing migration management experiences in origin and transit countries focussing on compared practices and policy solutions for effective migration management including the gender dimension. In this perspective, cultural and religious traditions, local knowledge and practices that may affect attitudes to and practices of migration should also be taken into account.

Consortia are encouraged to target geographic areas of current and future strategic relevance for the EU, including those most likely to generate irregular flows. Researchers should be careful to capture the two-way relation between migration determinants and the impact of migration on the broader socio-economic infrastructure and processes of transformation in the sending countries. Given its increasing relevance, climate change and its effects, as well as other or environment-related reasons for migration, could also feature in the analysis of drivers of migration when relevant.

2) EU policy coherence and migration

Research should focus on the interplay between the Global Approach on Migration and Mobility (GAMM) and the deployment of EU foreign policy tools and processes and other European policies with an external dimension, in particular the European development, humanitarian and neighbourhood policies. Research should examine and clarify the links between the existing legislative framework developed by the EU concerning non-EU migration and   the

increasing use of new types of policy tools to achieve migration management related goals as well as their legal consequences for involved parties. The analysis will encompass the implementation of these policies in selected geographic areas of interest for the EU and the combined effects that such policies have on countries of origin and transit of migrants. Pre-departure policies, programmes and related activities could be the object of specific attention, along with other tools promoting mobility and descent treatment of migrants, in a legal and secure environment. Finally, the effectiveness and coherence of the overall EU approach to third-country cooperation on migration will be assessed, including aspects of inter- and intra-Member States cooperation and coordination, along with areas where further synergies are needed to create greater leverage effects between different EU policies (e.g. trade and labour markets, agriculture and fisheries). In selected cases, consortia should look at the role of bilateral migration policies conducted by Member States vis-à-vis third countries and their complementarity with EU level actions.

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

Expected impact

The results of research under this topic, with its focus on sending and transit countries, should enhance policy coherence on migration between the EU and its member states. Research is thus expected to bring about greater policy coherence and effectiveness in the field of migration management and relations with third countries by clearly identifying and depicting good practices and effective ways to manage incoming and transiting migration at the benefit of local communities and immigrants. It should also allow a better understanding of the root causes of migration, their interplay with other determinants and the two way interaction between migration and development processes. Research will give EU and national policy-makers stronger conceptual tools to better interpret the role of the EU and its Member States as global actors in the field of migration.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-ENG-GLOBALLY-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2306-eng-globally-03-2017.html

ENG-GLOBALLY-04-2017
Dedicated Topic
Science diplomacy for EU neighbourhood policies

Specific challenge

The European Union's neighbouring regions are, in various ways and for a number of reasons, in turmoil. To the East, the Eastern partnership has been called into question, especially by the long-standing crisis in Ukraine and difficult and uncertain relations with Russia. In the South-East, the EU's relationship with Turkey has increasingly come under strain, while at Turkey's border the conflict in Syria and the ravage of Islamic State armies have created high degrees of instability. In the Western Balkans, the accession processes of several candidate countries remain challenging. Finally, the East and South Mediterranean region has been the theatre of profound and intricate transformations ever since the "Arab revolutions" of 2010/11.

Against this backdrop, it is fair to observe that the aim of the European Neighbourhood Policy (ENP) to develop closer relations between the EU and its neighbours, to avoid the emergence of new dividing lines and to strengthen the prosperity, stability and security of all, remains unfulfilled. More than ten years after its inception, the European Neighbourhood Policy (ENP) is under review in 2015 . The challenge is therefore to coordinate all available scientific information on these countries in order to better inform the definition and implementation of the new ENP and develop concrete actions for cultural and science diplomacy as an instrument for reinforcing co-ownership and shared understanding with and within the EU Neighbourhood. Considering the protracted conflicts both in the East and in the South, it is expected that science diplomacy can help build bridges across borders and cultures, particularly where other mechanisms are not feasible or less effective .

Scope

This coordination and support action should provide a stock-taking and critical review of all available research results on the European Union's neighbouring regions, including on science diplomacy related actions. It should synthesise knowledge regarding each of the neighbouring countries and regions, taking full account of the diversities of the studied entities, and compare transformation experiences both from an EU and a third country perspective, across time. In so doing, it should understand the success and failures of diplomatic efforts in the regions. It should also consider relevant results of international cooperation projects involving neighbourhood countries and all relevant existing legal instruments in various policy areas (e.g. energy), take into account the role of other state (e.g. US, Russia, and neighbours of the neighbours) and non-state actors in the various neighbouring regions.

On this basis, this coordination and support action should analyse the role science diplomacy can play and where it could be best deployed in contributing to stability, security and prosperity. It should identify concrete obstacles for science diplomacy in the concerned regions (e.g. the issue of reduced academic mobility due to on-going or frozen conflicts, visa restrictions and security controls, etc. which leads to very limited opportunities for visiting scientists and scholars). It should also provide insights into the role and relevance of the neighbours of the neighbours and non-state actors in the various neighbouring regions as well as to whether science diplomacy should be `silent diplomacy` (low profile) or could be more effective with more visibility. Supplementary research could be envisaged in order to cover the internal-external policies nexus and the role of science diplomacy in tackling some of the most urgent common challenges e.g. conflict prevention and management, job creation and migration, food and energy security, environment and climate change, radicalisation, health pandemics.

Based on lessons learnt, first elements of policy recommendations should be provided.

It should liaise between projects, provide fora for debate and discussion, and disseminate project findings to relevant stakeholders, including policy-makers, social partners and civil society organizations in Europe and third countries. It should draw lessons and provide policy-making recommendations that combine general observations about the Union's neighbourhood strategies and policies with regional and country-specific scenarios. The differences and similarities between the studied regions and their historical ties with Europe and the EU Member States should be duly accounted for. Wider participation of the targeted region/s is encouraged, including practitioners from the fields of diplomacy,

policy making and media.

The Commission considers that proposals requesting a contribution from the EU in the order of EUR 1.5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

This coordination and support action will result in a consolidated corpus of knowledge on science diplomacy in service of the European Neighbourhood Policy as well as research insights in how it could be best deployed in the challenging context of the EU Neighbourhood. It will put together a set of recommendations for EU science diplomacy strategies, policies and concrete actions in these regions and provide an assessment of these activities against criteria that it will develop. Based on these policy-relevant insights, the coordination and support action will feed research insights into the future development of EU science diplomacy in the neighbourhood with an eye to reinforcing stability, promoting democracy and prosperity in its near abroad. It will ensure a wide dissemination of these results to the relevant stakeholders including policy-makers.

Type of action	Coordination and Support Action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-ENG-GLOBALLY-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/23 02-eng-globally-04-2017.html

ENG-GLOBALLY-05-2017

The strategic potential of EU external trade policy

Dedicated Topic

Specific challenge

In its "Strategic Agenda for the Union in Times of Change" for the period 2014 to 2019, the European Council identified the need to "maximize the EU's clout" in global affairs, notably by "ensuring consistency between Member States' and EU foreign policy goals and by improving coordination and coherence between the main fields of EU external action, such as trade (...) development and economic policies". One area which definitely promises maximised EU clout in global affairs is trade. Given the European Union's significant weight as the world's largest trading block, its external trade policies can be a major source of a reinforced European role as a global actor if they are strategically deployed and contribute to a broader, coherent foreign policy approach. EU trade policy has to find the right balance between promoting the EU's economic interests while also taking into account broader EU policy objectives (e.g. promotion of human rights, sustainability, interlinking climate and energy policy objectives, etc.). Such a balance is difficult to achieve and the EU has sometimes been criticised either for letting its economic interests prevail or for being naïve over conditionality in the international trade battles. Coherence between the EU's and Member States' trade policy should be ensured, as well as coherence between trade and other (external) policies. To reap the strategic potential of EU external trade policy, its current functioning, as well as its intended and unintended consequences, need to be fully understood from a multidisciplinary perspective, and forward-looking perspectives have to be developed on how to make it more effective.

Scope

Research under this topic should take stock of the European Union's and its Member States' bilateral and multilateral trade strategies and policies, comparing various regional and country-specific trade policy approaches and assessing the coherence and consistency of their objectives, strategies and instruments. Bilateral trade relations with key economic players such as the United States and China, but also developing countries from various continents should form part of such comparisons, alongside the Union's multilateral engagement in relevant international institutions, such as the World Trade Organization and its related negotiation processes and the G-20 summit as a major global economic forum. This analysis should in particular comprise detailed scrutiny of the coherence and consistency between the EU's trade policies and those of its Member States.

The results of these stock-taking should lay the foundation for an investigation of the coherence and consistency of trade policies with other EU external policies such as economic (e.g. security of energy supply, green growth), developmental (e.g. trade-related policy coherence for development), environmental (e.g. climate change mitigation, biodiversity), social and labour (e.g. international labour standards, cooperation on decent work) and human rights policies. Research should ultimately evaluate whether and how EU external trade policies can and do serve wider foreign policy objectives, identify the institutional, organisational and behavioural drivers of and obstacles to a coherent and effective strategic use of EU trade policy, and formulate propositions on how to combine trade and other external policies into a comprehensive European foreign policy. A comparative perspective, contrasting the EU's approach with the strategic use of trade policy by other major global players, could be envisaged.

The Commission considers that proposals requesting an EU contribution in the order of EUR 2.5 million would allow this specific topic to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Research under this topic will lead to a set of novel insights into the evolving EU and Member States' bi- and multilateral trade strategies and their inter-linkages with other external policies, their coherence and effectiveness. Placing trade at its centre, it will revisit and innovate the debate on coherence and consistency in EU foreign policy so as to provide an understanding of whether and how trade can be utilized strategically in the context of broader EU foreign policy agendas and in support of its foreign and economic policy objectives. Based on these policy-relevant insights, it will formulate recommendations on the institutional, organisational and behavioural adaptations needed to reinforce the EU's clout in global affairs via enhanced coherence of its foreign policy.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-ENG-GLOBALLY-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2308-eng-globally-05-2017.html

ENG-GLOBALLY-06-2017
The Asia-Pacific as a strategic region for Europe

Dedicated Topic

Specific challenge

The Asia-Pacific is a large and diverse region, encompassing industrialised countries, emerging economies and developing countries. Perhaps due to this diversity, and save a few specific cases, the European Union has lacked a strategic approach towards the region, despite strong economic interests and heightened security concerns in the area. Several EU Member States have adopted an active bilateral approach towards key partners, but the European Union has mostly failed to speak with one voice in relevant fora. Nowadays the multiple and complex challenges shared by the two regions, ranging from climate change and sustainable development to conventional and non-conventional security challenges, are opening up new opportunities for the EU to become more involved in the region beyond economic cooperation although differences remain in areas like human rights or democratic governance. In order to re-think its role and strategy for the Asia-Pacific, and to fully tap the potential for action at European level, the European Union needs to be supported by sound research showing the concrete implications of further engaging with and in the region in a number of sectorial and geographic areas.

Scope

The research to address this challenge should in particular focus on the following key dimensions. It is expected to either comprehensively address one of these dimensions or to combine them. The research may also cover other issues relevant for addressing the specific challenge.

1) Regional integration in South-East Asia and its consequences for Europe

South-East Asia has seen, since 1967, the most ambitious project of regional integration outside of Europe, pursued through the Association of Southeast Asian Nations (ASEAN). It has followed a different integration path to Europe, based on dialogue and non-interference rather than convergence and law. The region has an immense social, cultural and economic potential, but it still faces the challenge of developing a regional identity with both an internal dimension (how to nourish a sense of belonging) and an external dimension (how to engage with foreign powers, such as China, India, the United States, Japan and the EU). The process of nation-building in the ten ASEAN countries and other non-ASEAN countries is incomplete or nascent. It is also confronted with widespread poverty, disruptive migration flows, interethnic conflicts and even territorial disputes. For the EU to engage effectively in South-East Asia and manage the variety of countries and cultures present in the region, it is necessary to understand what 'region' means to the peoples of these countries within and beyond the ASEAN context. Research is thus necessary on the mobility of people, knowledge, ideologies, cultures, goods and capital within the region and their influence on the emergence of a South East Asian identity which would help the EU and its Member States to forge coherent, adapted and culturally relevant foreign policies with all countries in the region. To that effect, research should also underpin the implementation of the Joint Communication on EU-ASEAN relations in the different sectors and in particular in the field of sectorial cooperation.

2) Governance in and of the Pacific as a challenge for Europe

One of the major strategic challenges in the Asia-Pacific region relates to the governance of the Pacific itself (including Overseas Countries and Territories). The Pacific Islands region represents a unique diversity of nation-state formations and regional and intergovernmental mechanisms, which is experiencing major challenges regarding the protection of its exceptional natural environment, threatened in particular by climate change. The small islands developing states (SIDS) of the Pacific therefore have a central role in the contestation over, competition for, and conservation of some of the world's key resources, far surpassing their modest size in terms of land mass and population. As the second largest donor of development assistance to the region, the EU's interests and activities in the Pacific are highly significant and hold important potential for the future. However, the region's new geopolitical currency is a willingness to seriously engage with emerging definitions of an equal, two-way partnership relation in Pacific terms that expands beyond the monetary dimension of cooperation. The EU is thus at a cross-road in its engagement with the Pacific. Research should examine the emerging governance structures in the region, in terms of sovereignty, state-making, policy autonomy and aid

dependency, by paying close attention to issues such as trade and transport, fisheries management, climate change, biodiversity, social inclusion, democracy, blue/green growth and political CFSP aspects. Research should also comparatively analyse the role and impact of external actors in the region, prominently focussing on the European Union and its Member States but also take account of the influence of, and the interplay with global (China, USA) and regional (Australia, New Zealand) powers in the region. Building on existing research, lessons should be drawn from the Pacific experience for devising new approaches, as well as on how Europe can effectively respond to the strategic challenge posed by the Pacific.

The participation of partners from third countries and regions in the targeted geographic areas in proposals submitted to this topic is strongly encouraged.

The Commission considers that proposals requesting a contribution from the EU in the order of EUR 2.5 million for each dimension would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Research under this topic is expected to provide a comprehensive overview of the strategic challenges that Europe faces in the various zones of the Asia-Pacific region, and on a range of relevant subjects. Based on this, it will inform different foreign policy actors, processes and initiatives at EU and Member State-level either with a sectorial or geographic focus, especially by providing essential insights on the legal, cultural and socioeconomic aspects surrounding their implementation.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-ENG-GLOBALLY-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/23 07-eng-globally-06-2017.html

ENG-GLOBALLY-07-2017
The European Union and Central Asia

Specific challenge

In-spite of its undisputable importance as a region located at a strategic crossroad to the Far East, as a rich reservoir of natural resources and as an area of traditional trade relations with Europe, Central Asia has been rather neglected by the major global players in the post-Soviet era. Only in more recent years, the political and economic developments in the five countries of the region - Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan - have received more attention. Challenges related to weak governments, abuse of power and corruption, divided societies, border disputes and ethnic tensions have led to increasing political and religious militancy and the creation of extremist groups which potentially represent non-negligible suppliers of forces to the radical political and religious movements in the neighbouring countries. Today's relevance of Central Asia in general and to the trade, security and development strategies of the European Union33 and other world powers in particular is, however, not reflected in the level of attention which the region is given from a scientific, social sciences and humanities point of view. Not only are Central Asian Studies less of a priority for European research centres, but European researchers in this field are also not sufficiently coordinated and their work is not adequately linked to policymaking.

Scope

Taking into account the need for a more intensive and properly coordinated research in the field of Central Asian Studies and the need for closer links to EU policy making, a network of European researchers will be created which, in cooperation with researchers from Central Asian countries, will:

• through mapping the current state of affairs in the field of Central Asian Studies in Europe and European Studies in Central Asia, recommend relevant new forms and priorities for future EU scientific cooperation in social sciences and the humanities with the region;

• through mapping the current state of political, economic, trade, cultural and any other relations between the EU and its Member States with Central Asian countries as well as between Central Asian countries and countries in the rest of Asia, and analysing results of the existing measures and tools supporting them, recommend future priorities for European policy making. These recommendations should be prepared in close cooperation with any other relevant European and Central Asian stakeholders (e.g. local, regional and state authorities, not-for-profit sectors, representatives of businesses, etc.);

• prepare an awareness-raising dissemination and communication strategy for the promotion of Central Asia and its role for Europe, which could be used by a variety of stakeholders (e.g. education, media, EU public sphere in general).

Any consortium submitting a proposal to this call should ensure a balanced representation of partners from countries in Central Asia.

The Commission considers that proposals requesting a contribution from the EU in the order of EUR 1.5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

The coordination and support measures of this action will contribute to improving the ties of the EU with the region and countries of Central Asia in all socioeconomic, political, security as well as cultural and scientific areas. Its findings will primarily be focused on the formulation of short- and long-term priorities for EU policies towards the region, as well as on proposing methods for their achievement. They will be further used for education and media purposes and thus contribute to raising awareness among EU citizens of today's reality of the countries of Central Asia and of their importance for Europe. By creating a network of European researchers in the field of Central Asian Studies and by proposing new forms of cooperation with counterparts in Central Asia, the action will reinforce mutual research ties between the EU and Central Asian countries and establish a robust basis for their sustained collaboration.

Type of action	Coordination and support action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-ENG-GLOBALLY-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2303-eng-globally-07-2017.html

CULT-COOP-01-2017

Dedicated Topic

Democratic discourses and the rule of law

Specific challenge

Discourses on the legitimacy of the EU, and especially its democratic deficit, have been a perennial issue for many years but have become significantly more urgent and pressing in times of crisis and austerity. At both ends of the political spectrum, claims about the illegitimacy of current EU governance and regulation have found broader resonance, expressed both in public manifestations of discontent combined with claims for alternative forms of legitimacy and in electoral successes of radical right and radical left parties across Europe. In this context, questions of justice, fairness and European solidarity have equally been raised. The concept of justice is inherently connected with the rule of law and entails a right to justification. Fundamental rights are also key in this regard. The European Stability Mechanism and the Fiscal Compact have been regarded by some as emblematic challenges not only to the rule of law but also to democratic governance. What is more, especially in the light of some recent election results in EU Member States, it seems as if not only the legitimacy of certain policies and institutions have been questioned, but also fundamental issues concerning the locus and exercise of popular sovereignty have been placed on the agenda. The specific challenge is to take the cues from such developments and ensuing contestations over sovereignty and legitimacy in order to reappraise discourses about democratic legitimacy on the one hand, and the rule of law and justice as increasingly thorny issues for the European public space on the other.

Scope

The research to address this challenge should focus on one or two dimensions that have to be comprehensively addressed taking into account the global context. The research may also cover other issues relevant for addressing the specific challenge.

1) Sovereignty and democracy

In light of the increasing number and growing popularity of alternative discourses about EU legitimacy and the locus of sovereignty, research should re-examine what is meant by sovereignty considering its wider context. Common democratic deficit arguments, in particular in relation to a possible decline of democratic control and participation in Europe, should be examined. This requires inter alia a historical comparative investigation of the sovereign and democratic powers of Member State parliaments and governments, not least in the light of a possible de-legalisation of the (Economic and) Monetary Union. It is of specific importance to clarify questions related to sovereignty and the ultimate source of authority in contemporary EU governance: who does, can and should possess this authority and how is it legitimately exercised at EU level. Research will also assess comparatively new patterns concerning the usage, transformations and popular understandings of various arguments about European legitimacy and sovereignty in public political discourse and in civil society and the conditions under which they do or not resonate among European citizens. It should also revisit the inter-institutional relations in the EU with specific attention to the position of the European Parliament through a thorough analysis of its practices in the legislative process and its functioning. In particular research must normatively assess the constitutional implications of the European Stability Mechanism and the Fiscal Compact for Parliament on the one hand, and the assertion of the Parliament to install the winning party's candidate as Commission President after the 2014 European Parliament elections on the other. Contributions from disciplines beyond law and political science are particularly welcome.

2) Legitimacy through the rule of law, delivery of justice and fundamental rights

Research should reappraise the significance of the rule of law and discourses on justice with regard to the legitimacy of the EU in times of crisis. Of particular importance in this regard is the jurisprudence of both the European Court of Justice and Member States' courts in upholding the rule of law. Research should ascertain whether and to what extent calls for simplification and better laws have any impact on the regulatory activities of EU legislators and the European agencies. The increased importance of the Charter of Fundamental Rights in the wake of the Lisbon Treaty and the nomination of a First Vice President of the Commission with responsibility for Fundamental Rights ought to be considered. The role of mutual recognition, also in relation to the recognition and judgements of other Member States,

needs to be explored in this regard. The evolution as well as the strengths and weaknesses of judicial cooperation among Member States should also be examined, whereby it should be considered whether existing justice and home affaires agencies need to be strengthened, and if so how, and/or whether new tools ought to be instituted. Research should critically assess whether and how there is any risk of undermining the rule of law and/or of justificatory discourses by recent and contemporary fiscal governance.

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

Expected impact

Research will inspire and inform future debates on the locus and exercise of sovereignty at EU level and the democratic credentials and deficits of the EU in particular with regard to the new fiscal governance instruments outside the Treaties. Research is also envisaged to feed into future debates on the constitutional arrangements of the EU taking due account electoral developments which appear to pose challenges to those arrangements. Research will deepen the understanding of the significance of the rule of law in general and justification discourses in particular, both at national and supranational level and inform whether and how they can contribute to fostering legitimacy of the EU and to creating a new narrative for Europe.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CULT-COOP-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/30 84-cult-coop-01-2017.html

CULT-COOP-02-2017 *Dedicated Topic*

Improving mutual understanding among Europeans by working through troubled pasts

Specific challenge

The European integration project was conceived as an antidote to a troubled past, especially during the first half of the 20th century. In fact, its very raison d'être was to overcome this burdensome heritage and to avoid once and for all future wars and authoritarian regimes. This was true not only in relation to and in the aftermath of WWII and the Holocaust, but also with regard to the Southern and Eastern enlargement rounds, which were inter alia motivated by embracing European countries that had left behind the yoke of authoritarian and/or totalitarianism - right wing and communist regimes respectively.

In times of crisis, this original telos of European integration is often lost from sight, even though it seems particularly opportune to bring it back into focus when reconsidering the fundamentals of integration in order to overcome the crisis. This integration is not limited to the expansion of the union, migration and global conflicts mean the narrative of troubled pasts in the context of Europe is continually evolving. At both a national and European level we have to look at how we accommodate co-existing narratives on the past. Historical discourses can contribute to cultural dialogue, mutual understanding and enhanced inter-comprehension between European states, nations, communities, minority and migrant groups and individuals. However, they might also be used to deepen perceived divisions and legitimate radicalisation or exclusion. Commemorating and teaching the past as well as preserving and cultivating the memory of troubled pasts are important in this regard. A critical engagement with negative heritage may also facilitate the construction of more value-oriented identities. More knowledge is needed on whether and how such discourses occur in various European countries. The specific challenge is to explore how uncomfortable histories are reflected and reappraised especially with a view to enhancing mutual understanding (and reconciliation when relevant) among Europeans.

Scope

Research should comparatively explore evidence and narratives of critical reflection and engagement with troubled pasts across Europe. Research will examine phenomena such as commemorations, apology, reconciliation and reparations and will identify major gaps or divergences in historical discourses and representations which might make it difficult to understand and overcome past conflicts or troubled historical legacies. The research to address this challenge should in particular focus on the following key dimensions. It is expected to either comprehensively address one of these dimensions or to combine them. The research may also cover other issues relevant for addressing the specific challenge.

1) Formal education, curricula and teaching practice

Research will survey and compare school curricula in a good range of relevant states with a view to identifying patterns and trends in presenting and interpreting difficult periods of history in a European perspective. It will also analyse whether, and at which stages of formal education, how, and with which intensity, openness and criticism troubled and uncomfortable historical heritage resulting from inter alia wars, conflicts, oppressions, genocides and dictatorships are covered in curricula by educational institutions at the levels of primary and secondary education and in cultural institutions providing services to education. The comparative approach could contribute to exploring differences between historical imageries of neighbouring countries, state majorities and minorities or communities considered as autochthonic or immigrant. Research will not focus solely on history teaching, as historical interpretations might be conveyed by many other disciplines from geography (e.g. implanting symbolic historical geographies) to sciences through arts and especially literature. Research should pay particular attention to primary and secondary education, because of their overwhelming importance in transmitting historical interpretations, bearing in mind that vulnerable or disadvantaged groups may be less represented in higher levels of formal education. Apart from the curriculum, research should also assess the actual practice of teaching such topics, and determine whether there is any discrepancy between the curriculum and its implementation with regard to covering troubled heritage. Crucially, research should develop criteria and indicators to measure how discursive, reflective and critical teaching is and assess teaching practices according to these criteria. Furthermore, it should be explored how these educational efforts, to the extent they exist, influence and impact upon national self-understanding and identity as well on perceptions of European integration.

2) Civil society, informal education and political discourses

Research under this strand should investigate how troubled periods of history are related to informal forms of education. Of particular importance is to survey and investigate comparatively how discourses in civil society and the media, including social and digital media, are informed by such legacies, and how in turn civil society and the media conduct such discourses. Research needs to unearth how national narratives are influenced by difficult pasts and how civil society, politics and the media constructed discourses, and which factors and acts such as commemorations, apology, reconciliations, reparations but also non-action informed both the construction and the evolution of such narratives. The gender dimension of these discourses and their transmission should be also considered. Interconnections between and disparities of national and European historical narratives and symbolical geographies equally ought to be studied. Of interest are also discourses in the profession of historians in the post-war/post-authoritarian period and how they might have evolved over time. Also artistic appropriations of memory in relation to troubled pasts and their receptions by the media and wider public should be explored. In addition to this, research should investigate whether and how such discourses and narratives have impacted upon Member States governments' and citizens' attitudes to European integration and EU membership, both before and after accession to theEU.

The Commission considers that proposals requesting a contribution from the EU in the order of EUR 2.5 million for each dimension would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts

Expected impact

A deeper knowledge base - on the significance of memory, interpretations and teaching (or silencing) periods of troubled pasts for the construction of historical narratives in contemporary Europe - will inspire and inform specific initiatives. These include appropriate changes in national educational curricula – and innovative educational material on how to critically and constructively reflect and act upon troubled historical heritage and facilitate the development of more nuanced and reflective approaches to interwoven local, regional, national and European histories. Research will also deepen the knowledge base on the significance and impacts of commemoration and cultural representation as well as public discourses on these for civil societies. This will help European policy makers and citizens to re-connect if and where necessary with the raison d'être of European integration.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CULT-COOP-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3085-cult-coop-02-2017.html

CULT-COOP-03-2017

Cultural literacy of young generations in Europe   *Dedicated Topic*

Specific challenge

Cultural diversity is one of Europe's most valuable assets and European educational and cultural systems need to cater for diversity and enable all citizens to build the skills and competences needed for effective inter-cultural dialogue and mutual understanding. The challenge is about understanding how young people make sense of Europe and its differing cultures. The influences on young people are wide ranging including formal education, family and cultural background and media. The aim is to gain a greater understanding of cultural literacy itself as a non-normative concept covering relevant culture-related knowledge, skills and competences and how young people in particular acquire it.

Scope

The research to address this challenge should focus on one or two dimensions that have to be comprehensively addressed. The research may also cover other issues relevant for addressing the specific challenge.
   1) Promoting cultural literacy through formal education
Research under this topic should address concepts of cultural literacy by performing a comparative analysis of cultural literacy of young Europeans of diverse origins and backgrounds as well as their inter-cultural competencies. It should address the role of formal education regarding knowledge, skills and competences needed for effective inter-cultural dialogue and mutual understanding as well as for becoming informed and responsible users and producers of the European cultural heritage and culture. It should study whether "European culture" as a possible common set of cultural and conceptual models is emerging for young generations. It should pay particular attention to early childhood (pre-primary), primary and secondary education, due to their importance in building cognitive, emotional and civic bases and study also how cultural literacy developed in formal education influences actual attitudes and behaviours of young people.
2) The role of non-formal and informal education and others factors in the development of cultural literacy Based on a comparative analysis of cultural literacy of young Europeans of diverse origins and backgrounds as well as of their "inter-cultural" competencies, research should investigate the role and impact of informal education in the broadest sense, by family, gender, communities of origin, peer-groups or society at large on the development of cultural literacy. Representations of culture and the role of the Internet, social and digital media in the development of cultural knowledge and skills should equally be investigated, as many ideas related to issues of cultural diversity, popular culture, ethnic groups, minorities, discrimination and segregation are conveyed by such media. Research should identify successful actions that have already proven to have improved cultural literacy and awareness in order to provide recommendations on best practices and make suggestions on how informal forms of education can contribute to enhancing the level of cultural literacy among the young.
The Commission considers that proposals requesting a contribution from the EU in the order of EUR 5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Research under this topic will contribute to better understanding and enhancing cultural literacy for the young generations, which will lead to greater appreciation of diversity. It will moreover contribute to reinforcing demand for sustainable and creative uses of European cultural heritage. The research will involve policy-makers, stakeholders and educational practitioners for the development and uptake of teaching material and tools both for formal and informal education. This will also include testing innovative practices for enhancing cultural and inter-cultural competencies in their real-life context making reference also to the fight against stereotypes.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CULT-COOP-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3081-cult-coop-03-2017.html

CULT-COOP-04-2017
Contemporary histories of Europe in artistic and creative practices
Dedicated Topic

Specific challenge

Culture is the most cherished and valued shared European asset of EU citizens according to surveys. Europe has been associated with and represented by iconic artistic and literary works since Antiquity. From the ancient Greek myth of Europa to Tolstoy's depiction of Napoleonic Europe in "War and Peace" and to Beethoven's 9th Symphony passing by medieval sacred arts or iconic European films, the list of artistic and literary expressions that represent Europe for many Europeans or non-Europeans is openended. Even without an official consensus about a repertory of these artistic and literary representations of Europe, they form the backbone of a European cultural identity and cultural heritage for many Europeans and for visitors coming to Europe for admiring its unique cultural heritage. However, the creation of cultural heritage is a never ending process. Today's culture is tomorrow's cultural heritage in the making. In this perspective, the specific challenge of the topic is to critically investigate - with the help of social sciences and humanities - the evolving representations of Europe in contemporary artistic and creative expressions in the light of changing societal, historical and cultural contexts

Scope

Research under this topic will examine various contemporary artistic and creative practices such as literature, cinema, music and dance, in order to identify and assess their representations of Europe, European identity and Europeanisation. It should have a comparative approach and a wide European geographic coverage. Research should clearly distinguish between positive and negative depictions of Europe and the European Union, and investigate the reasons for such representations. The definition and selection of the artistic, literary and creative manifestations representing Europe should cover various European regions, including post-2004 EU Member States, and potentially from neighbouring countries. Research should consider the role of curation, language, translation and digitalisation in terms of accessing these representations. It should consider implications for perspectives on European culture and cultural heritage and the possibilities to channel research results into formal and informal education in Europe through innovative learning material adapted to contemporary media and art consumption patterns. The early involvement of networks of cultural and/or education institutions should contribute to the efficient uptake of research results. T
he Commission considers that proposals requesting a contribution from the EU in the order of EUR 2.5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

Research will result in better knowledge of cultural Europeanisation in the making and in new, innovative tools and material for formal and informal education. The results and their dissemination will contribute to the renewal of cultural narratives of Europe that speak to Europeans of different languages, cultures, religions and origins beyond national borders. It will contribute to enhanced cultural inter-comprehension among Europeans. Research outputs and dissemination means will be adapted to contemporary art and literature consumption patterns in Europe.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CULT-COOP-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/30 82-cult-coop-04-2017.html

CULT-COOP-05-2017

Religious diversity in Europe - past, present and future   *Dedicated Topic*

Specific challenge

Religious beliefs and affiliation to religious groups and communities were historically the cornerstones of the functioning of societal relations in Europe. Acknowledging the rich tradition of the co-existence of diverse religions in Europe, the Charter of Fundamental Rights of the European Union enshrines the right to freedom of thought, conscience and religion. Despite this strong commitment to the freedom of religion in Europe, religious tensions still exist in many European societies, and have sometimes been exacerbated by the instrumentalisation of religion for political ends by extremists. It is therefore indispensable to understand better the new landscape of religions, secularism and spirituality in Europe and analyse both the roots of radicalisation and religious intolerance and peaceful coexistence and dialogue in Europe in order to support the values and practices of peaceful co-existence and rationality. Contextualising religious co-existence from a historical perspective can contribute to the promotion of a European public and cultural space and to enhancing mutual dialogue and understanding.

Scope

Using a broad historical and geographical perspective, the proposed comparative and multidisciplinary research will examine various types and elements of co-existence of diverse religious and non-religious communities in Europe today and in the future. It should deepen knowledge about the relations, cooperation, tensions within and among these diverse communities or social groups. The gender dimension of these issues should be also considered. This research will further survey the position and role of religiosity, non-religiosity or other philosophical convictions in today's European society as well as their role for today's, especially young, Europeans. It will assess the development of various forms of spirituality as a potential combination/compromise between secularism and religion in modern and post-modern democracies. It will broaden the European comparative perspective of the historical roots of today's religious tolerance and intolerance by also taking into account the historical and present experiences of those countries and territories that joined the EU after the fall of the Iron Curtain.

The Commission considers that proposals requesting a contribution from the EU in the order of EUR 2.5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

By providing a historical and comparative perspective, research will enable European citizens to better grasp the conditions needed for religious and non-religious coexistence in Europe. It will be translated into innovative dissemination tools in order to be used for education purposes of any type (e.g. formal, informal) and discipline (history, political science, civic education) and in proposals for appropriate changes in national educational systems. The conclusions will also inform policy recommendations targeted at policy- and opinion-makers of different levels in preparing future strategies of cooperation with religious communities as well as in coping with anti-religious animosity. Research outcomes will also reach out to the broadest range of media.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CULT-COOP-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/30 79-cult-coop-05-2017.html

CULT-COOP-06-2017
Participatory approaches and social innovation in culture   *Dedicated Topic*

Specific challenge

Recent conclusions of the Council of the European Union recognised cultural heritage as a "resource for a sustainable Europe" and highlighted that "participatory governance of cultural heritage offers opportunities to foster democratic participation, sustainability and social cohesion and to face the social, political and demographic challenges" in Europe.38 The European Commission has also highlighted that the contribution of cultural heritage to economic growth and social cohesion is undervalued in spite of growing scientific evidence, and called for an integrated approach to cultural heritage for Europe.39 It is recognised that cultural heritage is a shared resource for everyone and set the objective of continuing to develop more participative interpretation and governance models that are better suited to the contemporary European context, through greater involvement of the private sector and civil society. Europe's dense network of cultural institutions needs to adapt to changing societal, demographic and economic circumstances. Greater understanding is needed on how the different approaches to participatory governance work in this diverse sector including governance models, consideration of and access to different types of heritage, intergenerational equity etc. It is thus of paramount importance for urban and rural development, tourism, education, creative industries and cultural heritage professionals to understand how to integrate European tangible and intangible cultural heritage into sustainable development, hence the crucial role of social and inclusive innovation. This will also help to promote innovative ways in which to manage increasing flows of EU and non-EU tourists, which are currently largely limited to a number of urban destinations only ("theme park Europe").

Scope

a)   Research and Innovation Actions
Research under this topic will critically assess the current state of cultural institutions and investigate new ways to develop the role of European culture ministries, cultural institutions and their networks as cultural service providers and hubs of social innovation. It should take into account recent international, European and national research results and best practices. It should have wide European geographic coverage and stakeholder involvement from citizens and cultural institutions that enables innovative research, case studies, pilot actions and smooth uptake of research results. The research should investigate innovative ways in which cultural institutions can engage with younger and more mature audiences, with minority, migrant or socially disadvantaged groups and include them in their governance - and how local communities organise themselves in order to co-create a better use of the local heritage. It should look into the challenges faced by cultural institutions with regard to the necessity to balance needs for managing material collections and opening culture and cultural heritage to new audiences. Research should also investigate the issue of how to combine traditional cultural services with innovative new cultural or social services like adult or lifelong learning, career support, access to and assistance to digital services and e-administrations flexible work arrangement. The gender dimension of these issues should be also considered. The role and potential of enhanced European and international cooperation and networking of culture ministries, cultural departments of local governments and cultural institutions (from traveling artefacts and exhibits to joint curatorial work and other types of sharing resources, expertise and best practices) should also be addressed. The proposed research will draw on comparative perspectives.
The Commission considers that proposals requesting a contribution from the EU in the order of EUR 2.5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

b)   Coordination and Support Action
A social platform will bring together relevant heritage stakeholders' representatives from research communities, heritage practitioners from public or private cultural institutions (heritage sites, libraries, archives, museums, and other public or private collections) and organisations (NGOs, associations), as well as policy-makers at European, national, regional or local levels. For improving the excellence of European heritage management and related policy making the platform should also harness the potential of networking among the growing number of European cultural heritage and cultural studies departments at higher education and research institutions.
Based on a focussed, critical mapping of existing research and practice, the objective of the social platform is to develop an understanding of the challenges and opportunities for research and innovation in the participatory preservation,

(re)use and management of cultural heritage. The platform should pay particular attention to the sustainability and employment dimensions of new approaches to cultural heritage, taking into account the issues of data collection and measurement. The platform will map and share European and extra-European best practices, identify emerging new European heritage communities, evaluate bottlenecks and opportunities in the financial and legal environment and create new European networks around the participative preservation, (re)use and management of cultural heritage.

The Commission considers that proposals requesting a contribution from the EU in the order of EUR 1.5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

The actions will form the basis for new institutional strategies to engage new audiences and communities and to combine culture, informal culture and cultural heritage demonstration and preservation with innovative ways of cultural transmission and creative re-use. The findings will help culture ministries, cultural institutions and other relevant actors to reinvent and modernise their policies and their roles as centres of culture, cultural heritage, information, learning and gathering. Results will give guidance on how to promote European culture and further democratise access to it in a way that enables mutual and intercultural understanding. In addition to new academic results, the activities will also provide analytical tools or toolkits, description of best practices and policy recommendations that can facilitate the direct uptake of research and other insights by stakeholders.

Type of action	Research and Innovation action, Coordination and support action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CULT-COOP-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/30 80-cult-coop-06-2017.html

CULT-COOP-07-2017
Cultural heritage of European coastal and maritime regions *Dedicated Topic*

Specific challenge

This RIA complements previous and on-going EU research on cultural heritage in rural, mountainous and urban settings. European coastal and maritime regions have - over several millennia - developed a rich, multi-layered and varied cultural heritage. At the crossroads of different types of contacts of European peoples with each other and with other regions of the world (from commerce to conquest, from cultural exchange to mass tourism) they represent an extremely rich tangible heritage (coastal towns and villages, submerged landscapes and underwater artefacts, harbours, dams, light houses, arsenals, buildings of the fishing and marine industry, boat builders, etc.). As a result of a combination of natural landscapes and human ingeniousness, including unique types of transcultural communication and ethnic diversity, specific coastal cultural landscapes emerged on the shores and sea beds of Europe. This tangible heritage is intimately embedded into the multiple layers of intangible heritage, from myths to daily practices, languages, traditions and crafts of local cultures of communities of sailors, fishermen, boat builders, merchants, etc. Today, coastal cultural landscapes are very much exposed to environmental challenges such as climate change (rising sea levels), other forms of pollution, dense or scattered urbanisation, tourism pressure, the fundamental transformation of the European fishing industry due to over-exploitation of fish stocks and erratic policies of sea or shore conservation at national level. With several coastal zones being among the densest populated areas, mixed metropolitan coastal landscapes have emerged around historic port cities posing new challenges for conservation, management and transmission of existing tangible and intangible values. Against this backdrop, research should provide local communities and local, national and European policy-makers with a coherent framework for risk assessment and sustainable management of European coastal cultural heritage in a way that involves local stakeholders.

Scope

The research will aim at providing a comprehensive framework for the preservation of European coastal and maritime cultural landscapes. It should be geographically balanced and cover different types of European coastal and maritime cultural landscapes taking into account various historical backgrounds and the current state of these regions, as they range from the most popular destinations of mass tourism to the most peripheral regions of Europe. The research - multidisciplinary to the extent required by its inherent and explicit research approach - might combine approaches and methodologies of cultural heritage preservation, social sciences and humanities, spatial and environmental sciences. It will cover both tangible and related intangible cultural heritage in order to provide a full picture of the societal importance of the cultural heritage of the landscapes under investigation. The research should involve and further develop networks of scholars, local stakeholders and policy makers. It will contribute to European efforts to promote evidence-based research on the impact of participatory approaches in cultural heritage policies and governance, as suggested by the Council of the European Union's conclusions on participatory governance of cultural heritage (2014/C 463/01). In addition, it will contribute to a better implementation of European policies on coastal zones and maritime areas, referring both to the 'Integrated Coastal Zone Management ICZM' ('Recommendation concerning the 'Integrated Coastal Zone Management' (2002/413/EC)) and to the 'Establishing a framework for maritime spatial planning' (Directive 2014/89/EU), thus providing evidence on how to link environmental and cultural policies.
The Commission considers that proposals requesting a contribution from the EU in the order of EUR 2.5 million would allow this specific challenge to be addressed appropriately. This does not preclude submission and selection of proposals requesting other amounts.

Expected impact

As a result of its reasonably multidisciplinary approach and mapping efforts, the research will significantly deepen knowledge on the cultural heritage of European coastal and maritime regions. It will lay the basis of a comprehensive framework for the documentation and sustainable management and preservation of European coastal and maritime cultural landscapes taking into account cultural, environmental, spatial and broader societal aspects. The research will provide policy advice and create networks, concepts and tools on how to maintain and preserve this rich and diverse element of the European cultural heritage based on stakeholder involvement and participatory governance. Case studies

and tailor-made pilot projects of the research will allow putting in practice the proposed new tools, concepts and methodologies. Special attention will be given to the preservation and exploitation of both tangible and related intangible cultural heritage like traditional skills and know-how embodied in practices and corresponding knowledge systems. The project(s) will also explore the possibilities of new, sustainable, cultural heritage-related career and business opportunities in the studied regions.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CULT-COOP-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/30 83-cult-coop-07-2017.html

CULT-COOP-09-2017
European cultural heritage, access and analysis for a richer interpretation of the past.

Specific challenge

Collections in **archives, museums, and at cultural heritage sites** contain a wealth of digital texts, images, audio-visual content and 3D representations of objects or scenes as well as other information such as multispectral or thermal imaging revealing the actual state of conservation, which are largely inaccessible to both computers and humans. In addition, **human beings as members of their societies can be regarded as natural archives entail information about the complex semantic and conceptual knowledge organizing a society in its cultural settings and stored in non-verbal practices and rites as well as in language**.

Humans can easily extract meaning from individual digital assets but are quickly overwhelmed by the sheer number of items which are usually spatially and/or temporally disconnected and of different digital quality. New technologies can be a valuable instrument to process large amounts of data in order to identify new correlations and interpretations and extract new meaning from our **cultural and intellectual heritage**. **To close, or at least narrow, the "semantic gap" would present a major step forward in digital humanities and other sciences related to European heritage, memory, identity and cultural interaction**. Likewise, it is of immediate relevance to find new ways of a**ccessing the complex information embodied in culture-related human 'natural archives'. In addition, the increase and growing complexity of digital cultural material raises new challenges as regards its preservation over time, an essential condition for re-use and study.**

Scope

In order to better understand and inform the present by **richer interpretations of the past**, actions should create affordable and efficient digital access, **documentary methods analysis and preservation services for cultural resources**. This should be achieved by tackling issues such as automatic contextualisation and identification of content and by developing analytical tools, including methods for automatically finding content which is semantically similar to a given item, or content which is related to a given high-level concept. This aspect also calls for fundamental work related to **the philosophy of meta-data designs especially of language-based data that should be in close coherence with the architecture and typology of human conceptual systems**. Actions should also develop innovative tools and methods to extract meaning from **digital artefacts** (including video recordings, audio recordings, digital images, text, multispectral and thermal information and 3D representations of objects or scenes) considering also **the spatio-temporal dimension and the quality of the digital content in order to allow the study and preservation of European heritage**. The work must fundamentally address the issue of data quality and interoperability.

Work will be performed in close collaboration with Humanities and Social Sciences researchers.

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

Expected impact

New ways of taking into account the state of the art in computer science and big data management, of searching European digital content which used to be inaccessible, buried among huge amounts of data and not sufficiently tagged with adequate metadata.

Improve the understanding of the rich diversity of European cultural heritage and create added value for the society by providing humanities researchers, journalists, policy makers and the interested public with new ways of finding answers to their questions about European cultural heritage and history.

Type of action	Research and Innovation action
Deadline	**2 February 2017**
Call identifier	H2020-SC6-CULT-COOP-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/3087-cult-coop-09-2017.html

Opportunities for Researchers from the Socio-economic Sciences and Humanities (SSH) in Horizon 2020

Societal Challenge 7

Secure societies

Protecting freedom and security of Europe and its citizens

SEC-06-FCT-2016
Developing a comprehensive approach to violent radicalization in the EU from early understanding to improving protection

Dedicated Topic

Specific challenge

Radicalisation leading to violent acts can have a huge impact on the society and its citizens: politically (seeding division between communities), economically, emotionally, and in terms of security. The roots of radicalisation are not well-known, whilst well-targeted response to emerging challenges of violent extremism cannot be developed without a full understanding of what drives the process of radicalisation and of how individuals may react to countermeasures. Also, terrorist groups and extremists are capitalising on advances in technology to spread propaganda and radical behaviours, but traditional law enforcement techniques are insufficient to deal with these new, evolving trends in radicalisation. The key in democratic societies is to ensure citizens' rights to free thought – even radical thought – while protecting society from the fallout of illegal actions from violent radicalised groups and individuals.

Scope

Terrorism in Europe now finds its inspiration in a larger variety of ideologies, as described in the 2013 Europol TE-Sat report: nationalist, anarchist, separatist, violent left-wing or right-wing ideologies, or Al Qaida- or Daesh-inspired ideologies. Preventing and countering radicalisation must engage the whole of society, and requires a holistic treatment, and a multidisciplinary approach.

Factors constituting a violent radicalisation process can be many: familial, social, gender-based, socio-economical, psychological, religious, ideological, historical, cultural, political, propaganda-, social media- or internet-based. Events and conditions leading a person from ideas to violent action are also numerous, and mechanisms so complex that they need to be broken down to be understood. Radicalised individuals, including recent converts, Europeans or foreigners, get organized in various ways: centralised and hierarchical organisations; networks; smaller groups based in Europe or on foreign territories; cells; and lone actors operating in a more unconstrained and unpredictable way. It is important to understand how networks and groups act towards the violent radicalisation of individuals. Further to the recommendations of the Radicalisation Awareness Network, and to the work undertaken in the ongoing FP7 and other projects in the area, a better understanding of the causes and processes may lead to innovative, ethical solutions to counter violent actions taken by radicalized male or female individuals (policies for preventing violent extremism; counter communication disseminated either online (YouTube, special forums, Twitter etc.) or offline (in the classroom or in one-to-one interventions for example), since preventing violent radicalisation is also about winning the hearts and minds and countering extremist propaganda; surveillance, investigation, and protection techniques; forensic tools), whilst preserving the fundamentals rights of the citizens.

While Societal Challenge 6 mainly focuses on studying the phenomenon of radicalization, in order to provide input to the successive policy-making, proposals under this topic should focus on developing policy recommendations and practical solutions to be implemented by security end-users. In line with the EU's strategy for international cooperation in research and innovation international cooperation is encouraged, and in particular with international research partners involved in ongoing discussions and workshops, with the European Commission. Legal entities established in countries not listed in General Annex A and international organisations will be eligible for funding only when the Commission deems participation of the entity essential for carrying out the action.

Indicative budget: The Commission considers that proposals requesting a contribution from the EU of € 3million would allow for this topic to be addressed appropriately. Nonetheless this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

As a result of this action, security policy-makers and law enforcement agencies should benefit from a full set of policy recommendations and tools aimed at improving their ability to prevent and detect radicalisation by national and local security practitioners in a timely manner, i.e. before individuals turn towards violent, criminal or terrorists acts, including:

• Comparative analysis of different types of policies (e.g. preventive vs. legal and administrative measures) including counter-propaganda techniques;

• Improved description of competencies, skills and characteristics of the various types of practitioners involved in preventing, detecting or countering violent extremism;

• Improved information exchange between the different actors involved, including security practitioners, family of the radicalised individual, school/workplace of the radicalised individual;

• Field-validation of new approaches to anti-radicalisation directly applicable to support practitioners.

Type of action	Research and Innovation Action
Deadline	**25 August 2016**
Call identifier	H2020-SEC-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2317-sec-06-fct-2016.html

SEC-07-FCT-2016-2017 *Dedicated Topic*
Human Factor for the Prevention, Investigation, and Mitigation of criminal and terrorist acts

Specific challenge

The European Union (EU) consists of more than 500 million people across the twenty-eight countries which make up the Union. Economic growth, together with the opportunities provided by a free and democratic society based on the rule of law, generate prosperity amongst Europe's citizens who benefit from increased mobility across national borders, and from globalized communication and finance infrastructure – but with such opportunities also come risks, as terrorists and criminals seek to pursue destructive and malicious ends. There are a number of significant common threats which have a cross-border impact on security and safety within the EU18, and security has become a key factor in ensuring a high quality of life in the European society and in protecting our critical infrastructures through preventing and tackling common threats. The European Union must prevent, and if necessary investigate and mitigate the impact of criminal acts, whilst protecting fundamental rights of its citizens. The consistent efforts made by the EU Member States and the Union to that effect are not enough, especially when criminal groups and their activities expand far beyond national borders.

Scope

he Lisbon Treaty enables the EU to act to develop Europe as an area of justice, freedom and security. The new European Agenda on Security underlines that, an EU-wide approach to security, integrating prevention, investigation and mitigation capabilities in the area of fight against crime is increasingly required.

The definition of a European Security Model which builds upon the analysis of the human factors, at the roots of the design of security strategies and methodologies, is needed. Such a Model would encompass: the development of a common understanding of security issues among EU security practitioners, as well as of the causes and effects of insecurity among EU citizens; common EU methodologies to be implemented by security practitioners (about enhancing prevention and anticipation and/or the timely involvement of all the actors that have a role in protection from the political, economic and social scene).
The globalization of communications and finance infrastructure allows for cybercrime to develop, and corruption and financial crime to take new forms. Cyber criminality is a phenomenon by which criminal acts with new tools and within a new environment, which is not satisfactorily understood, nor properly addressed. The same applies to the innovative technologies and methodologies for financial crime. Law Enforcement Agencies need new equipment to counter such developments.

Proposals should address only one of the following aspects:
Sub-topic 1. New methods for the protection of crowds during mass gatherings;
Sub-topic 2. New methods to prevent, investigate and mitigate cybercriminal behaviours;
Sub-topic 3. New methods to prevent, investigate and mitigate corruption and financial crime to fight the infiltration of organised crime in the European Union (licit) economy;
Sub-topic 4. New methods to prevent, investigate and mitigate high impact petty crimes;
Sub-topic 5. New methods to prevent, investigate and mitigate high impact domestic violence.

Only the sub-topics not covered in 2016 will remain eligible in 2017. A list of topics that remain eligible in 2017 will be published in due time in the section "Topic Conditions & Documents" for this topic on the Participant Portal.
In line with the EU's strategy for international cooperation in research and innovation international cooperation is encouraged, and in particular with international research partners involved in ongoing discussions and workshops, with the European Commission. Legal entities established in countries not listed in General Annex A and international organisations will be eligible for funding only when the Commission deems participation of the entity essential for carrying out the action.

Indicative budget: The Commission considers that proposals requesting a contribution from the EU of € 3 million would allow for this topic to be addressed appropriately. Nonetheless this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

The EU law enforcement agencies will benefit from improving and consolidating knowledge about security problems and their remedies. In detail, and for each sub-topic:

• A policy-making toolkit, for security policy-makers, to advance towards a future European Security Model applicable by European law enforcement agencies and/or

• Common approaches, for the long-term, for assessing risks/threats and identifying relevant risk-based security measures, including through acceptance tests (that take due account of legal and ethical rules of operation) and cost-benefit considerations and/or

• Complementing the relevant work of Eurobarometer, better understanding of how the citizens perceive security and how it affects their feeling of insecurity, and in connection with potential limitations to, or risks of violations of privacy, and the consequent challenges for LEAs;

• Toolkits for law enforcement agencies, based and validated against the needs and requirements expressed by

Type of action	Research and Innovation action
Deadline	**25 August 2016**
Call identifier	H2020-SEC-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2318-sec-07-fct-2016-2017.html

SEC-18-BES–2017
Acceptance of "no gate crossing point solutions"

Specific challenge

For the traveller it would be ideal to cross borders without being slowed down. It is indeed likely that, in the next 10 years or so, technologies make it possible to implement "no gate crossing point solutions" that allow for seamless crossing of borders and security checks for the vast majority of travellers who meet the conditions of entry, and make sure that those who do not fulfil such conditions are refused entry. There is a broad variety of technologies and systems including information systems and (networks of) sensors that will become available to support border checks based on risk assessment methods. Some are to be deployed in the vicinity of border crossing points, others can be mobile and used to check travellers data along his/her journey. However, in the intensive use of technologies that this will require bears the risk to invading people's privacy, and the **societal and political acceptance of technologies** for "no gate solutions" is required prior to their implementation.

Scope

The assessment of the acceptability of such (combinations of) technologies and systems by citizens (who need to remain in control of personal data) and practitioners is needed, that takes account of **human behaviour, gender, legal frameworks, societal issues, and possible risk of discrimination**. Methods developed to perform such assessments need also to generate information useful for decision makers to take informed decisions about future technology deployments, and for industry to design products that preserve privacy.

Indicative budget: The Commission considers that proposals requesting a contribution from the EU of € 3million would allow for this topic to be addressed appropriately. Nonetheless this does not preclude submission and selection of proposals requesting other amounts.

Expected impact

• Information systems that better manage personal information and support the automated checking and analysing of various entry and exit data, without increasing the risk of loss of privacy thanks to close cooperation with actions resulting from SEC-15-BES–2017: Risk-based screening at border crossing.

• Networks of sensors that better collect information needed for border checks, without increasing the risk of loss of privacy thanks to close cooperation with actions resulting from SEC-15-BES–2017.

• A method, and metrics, to assess **acceptability by the society** of the concept of border control processes based on "no gate crossing point solutions", and of the various technology components that may be required.

Type of action	Research and Innovation Action
Deadline	**24 August 2017**
Call identifier	H2020-SEC-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2331-sec-17-bes-2017.html

DS-02-2016
Cyber Security for SMEs, local public administration and Individuals

Specific challenge

Europe's SMEs, local public administration and citizens face particular challenges in addressing basic cyber security threats. On one hand, in the case of SMEs and local public administration, their size and budgetary constraints often precludes them from putting in place highly granular organisational structures, retaining dedicated information security personnel and making significant investments in cybersecurity products or services.

Individuals, constantly portrayed as the "weakest link" face the daunting task of having to constantly adapt **their behaviour at home and in the workplace** and the way they use both their personal or work-related IT equipment and devices in order to avoid falling prey to the latest threats and techniques that malicious actors leverage against them. Moreover, whether addressing SMEs, local public administrations or individuals, **few cyber security solutions have been designed with the human factor in mind and therefore present severe limitations in their usability which hampers proper decision making and adequate usage.**

Scope

Taking into consideration the adequate level of security commensurate with the considered use-case, proposals may address one of the following types of end-users:

- SMEs,
- local public administration,
- individual citizens.

To identify the most wide spread threats and cyber security issues facing end-users, proposals should take into account the guidance documents, best practices and standards issued by International Standardisation Organisations, technical forum and Member State Authorities which are tailored for SMEs or Individuals and actively contribute to their development or improvement. Proposals should develop innovative solutions with a high degree of usability and automation while ensuring that the end-users retain an adequate degree of cyber situational awareness and control. **Factors going beyond technological solutions and focusing on psychological and behavioural factors (including gender) that affect cyber security at individual or organizational levels should be addressed.**

Proposals are expected to validate their work through extensive end-user feedback and participation in the consortium where appropriate. Proposals have to address the specific needs of the end-user, private and public security end users alike. Proposals are encouraged to include public security end-users and/or private end users.

The outcome of the proposals are expected to lead to development up to Technology Readiness Level (TRL) 6 to 7; please see part G of the General Annexes. The Commission considers that proposals requesting a contribution from the EU between EUR 3 and 4 million would allow these areas to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact
- Increased competiveness of European ICT security products and services catering to the needs of SMEs, local public administrations and individuals.
- Increased resilience against widespread cyber security threats facing SMEs, local public administrations and individuals.
- Increased effectiveness of cybersecurity solutions through usability advancements and increased automation.

Type of action	Innovation Action
Deadline	**25 August 2016**
Call identifier	H2020-DS-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2423-ds-02-2016.html

Dedicated Topic

DS-04-2016 - Economics of Cybersecurity

Specific challenge

Many cyber security failures in systems and organisations can only be explained and appropriately addressed by examining the problem through not only from the technical point of view but also through a deep societal, institutional and economic analysis. Moreover, current structures at institutional level (national and international) as well as incentive frameworks (financial or regulatory, positive or negative) don't seem to be able to provide adequate coverage to threats.

Scope

Scope: With a multidisciplinary approach combining economic, behavioural, societal and engineering insights, measurement approaches and methodologies and combining methods from microeconomics, econometrics, qualitative social sciences, behavioural sciences, decision making, risk management and experimental economics, proposals are expected to cover one of the following two strands:

• Cybersecurity cost-benefit framework: o Security and privacy cost models including the pricing of digital assets, modelling and methods for estimation of costs of intangible risks (reputation, non-critical service disruption...) and relevant metrics and indicators; o The proposals should study and take into consideration relevant market sector specificities, and validate their models with relevant actors from these sectors. o Optimal investment in information security, risk management and cyber security insurance;

• Incentives and business models: o Identifying the incentives and striking the right balance between cooperative and regulatory approaches to information sharing regarding incidents and vulnerabilities; o Consider behavioural aspects of security and privacy; o Investigate the opportunities and risks of information security markets (e.g. bug bounties, vulnerability discovery & disclosure); o Develop revenue models for criminal activity and the deployment of cost-effective security measures as necessary disincentive for attacks and cyber-criminal activity. For both strands proposals should also investigate improvements and/or alternatives to current institutional and governance frameworks (market-driven as well as national and international regulatory) with a view to improving cybersecurity. Based on their results, proposals should provide a set recommendations addressed to all relevant stakeholders including policy makers, regulators, law enforcement agencies (where applicable) as well as relevant market operators and insurance companies. The Commission considers that proposals requesting a contribution from the EU between EUR 1 and 2 million would allow these areas to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts

Expected impact

• Improved societal understanding of information security failures and how they should be addressed.
• Improved risk-based information security investment. Increased societal resilience to cyber security risks through more efficient and effective institutional and incentives structures.
• Progress beyond the state of the art in information security economics models.

Type of action	Research and Innovation action
Deadline	**25 August 2016**
Call identifier	H2020-DS-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/24 21-ds-04-2016.html

DS-08-2017
Privacy, Data Protection, Digital Identities

Specific challenge

The use of modern telecommunications and on-line services involve users' personal information.. For example, using search engines exposes the query terms used, which can be both sensitive and identifying, as illustrated by the exposure of search terms; **social networking services expect users to reveal their social connections, messages and preferences, that could lead to direct privacy violation if exposed**. Browsing the web also leaves traces of where users have gone, their interests, and their actions - meta-data that can be used to profile individuals. The implementation the draft General Data Protection Regulation (GDPR - currently in the law-making process) presents both technological as well as **organisational challenges for organisations** which have to implement novelties such as **the right to data portability, the right to be forgotten, data protection impact assessments and the various implementations of the principle of accountability**. Many services on the Internet depend on the **availability of secure digital identities which play a crucial role in safeguarding the data and privacy of citizens** as well as protecting them and other actors such as private companies or public services form various online threats. At the same time, many European countries already have or are in the process of developing an electronic identity (eID) scheme. Most of these projects are built to be at a very high security level, which makes them very suitable for diverse eGovernment processes. But in turn they may lack usability for commercial applications.

Scope

Privacy-enhancing Technologies (PET): Novel designs and tools to provide users with the functionality they require without exposing any more information than necessary, and without losing control over their data, to any third parties. PET should be available in a broad spectrum of products and services, with **usable, friendly and accessible safeguards options**. **PET should be developed having also cost effective solutions**. Comprehensive and consistent Privacy Risks Management Framework should be available, in order to allow people to understand their privacy exposure (i.e. helping people to understand what happens to their data when they go online, use social networks etc). Open source and externally auditable solutions are encouraged in order to maximise uptake and increase the trustworthiness of proposed solutions.

General Data Protection Regulation in practice: Tools and methods to assist organisations to implement the GDPR taking into account the final provisions of GDPR and guidance from relevant authorities (Data Protection Authorities, Art 29 WP or its successor). Proposals may also address the need to provide support (procedures, tools) for entities to understand how to operate without requiring unnecessary information (so as to promote privacy respecting practices), in particular when the issue is mainly related to the fact that organizations (businesses, service providers, and government agencies) often require too much information from their target customer/user.

Secure digital identities: With a view to reducing identity fraud while **protecting the privacy of citizens**, proposals should develop innovative, secure and privacy enhancing digital identity platforms beyond national eID systems. Activities may leverage existing European electronic identification and authentication platforms with clearly defined interfaces based on the General Data Protection Regulation (GDPR).

Proposals may:

• Leverage evidence-based identities (using adequate correlation of multiple soft proofs of identity, as opposed to the usage of a central register);

• Provide a function for so called "qualified anonymity", which means, that the online service does not have any information about the user but a pseudonym. The real identity of the user can only be revealed under specific conditions such as at the request of legal authorities;

• **Consider cost-effective and user-friendly verification methods for mobile identity documents.** For all strands, proposals should **identify and address the societal and ethical dimensions** of the strand they choose to cover taking into consideration the possibly divergent perspectives of pertinent stakeholders. Proposals have to address the specific needs of the end-user, private and public security end users alike. Proposals are encouraged to include public security end-users and/or private end users. The Commission considers that proposals requesting a contribution from the EU

between EUR 2 and 3 million would allow these areas to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. The outcome of the proposals are expected to lead to development up to Technology Readiness Level (TRL) 6 to 7; please see part G of the General Annexes.

Expected impact

- Support for **Fundamental Rights** in Digital Society

- **Increased Trust and Confidence in the Digital Single Market**

- Increase in the use of privacy-by-design principles in ICT systems and services

Type of action	Innovation Action
Deadline	**24 August 2017**
Call identifier	H2020-DS-2016-2017
Topic information	http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2428-ds-08-2017.html