Überblick über die Horizont-2020-Arbeitsprogramme mit Synergienrelevanz

Zeitraum 2018 - 2020

Stand: Januar 2018

1. Vorwort

Dieses „Meta-Arbeitsprogramm Synergien“ hat die Geschäftsstelle Synergiendialog aus den Arbeitsprogrammen 2018-20 für Horizont 2020, dem EU-Rahmenprogramm für Forschung und Innovation, zusammengestellt.

Die ausgewählten Ausschreibungen stellen allesamt einen Bezug zur koordinierten und kombinierten Förderung verschiedener Fördermittel dar. Es besteht kein Anspruch auf Vollständigkeit.

Die Auswahl erfolgte nach folgenden Kriterien in den einzelnen Ausschreibungstexten:

- Kombination von Fördermitteln aus anderen Finanzierungsquellen (hauptsächlich ESIF)
- Synergien mit anderen (regionalen, nationalen und europäischen) Forschungs- und Innovationsprogrammen (z.B. ESIF)
- Abstimmung mit /Koordination von regionalen, nationalen und anderen europäischen Forschungs- und Innovationsprogrammen und –Instrumenten
- Adressierung von Regionen bzw. regionalen Politik- und Programmplanern sowie Verwaltungsbehörden
- Koordination, Abstimmung und Zusammenarbeit (von Regionen) auf Grundlage der FuI-Strategien zur intelligenten Spezialisierung (RIS3).

Durch Klick auf den ‚Call Identifier‘ gelangen Sie zum Ausschreibungstext.

Das Meta-Arbeitsprogramm Synergien kann auf der Seite www.eu-synergien.de runtergeladen werden.

Die Geschäftsstelle des Bund-Länder-Dialogs „Synergien Horizont 2020 – ESIF“ arbeitet im Auftrag des Bundesministeriums für Bildung und Forschung (BMBF). Nähere Informationen unter http://www.eubuero.de/regionen-dialog-eu-synergien.htm.

2. Überblick über die relevanten Ausschreibungen

Die Auflistung der Ausschreibungen erfolgt entlang der Themen in der Programmstruktur von Horizont 2020:

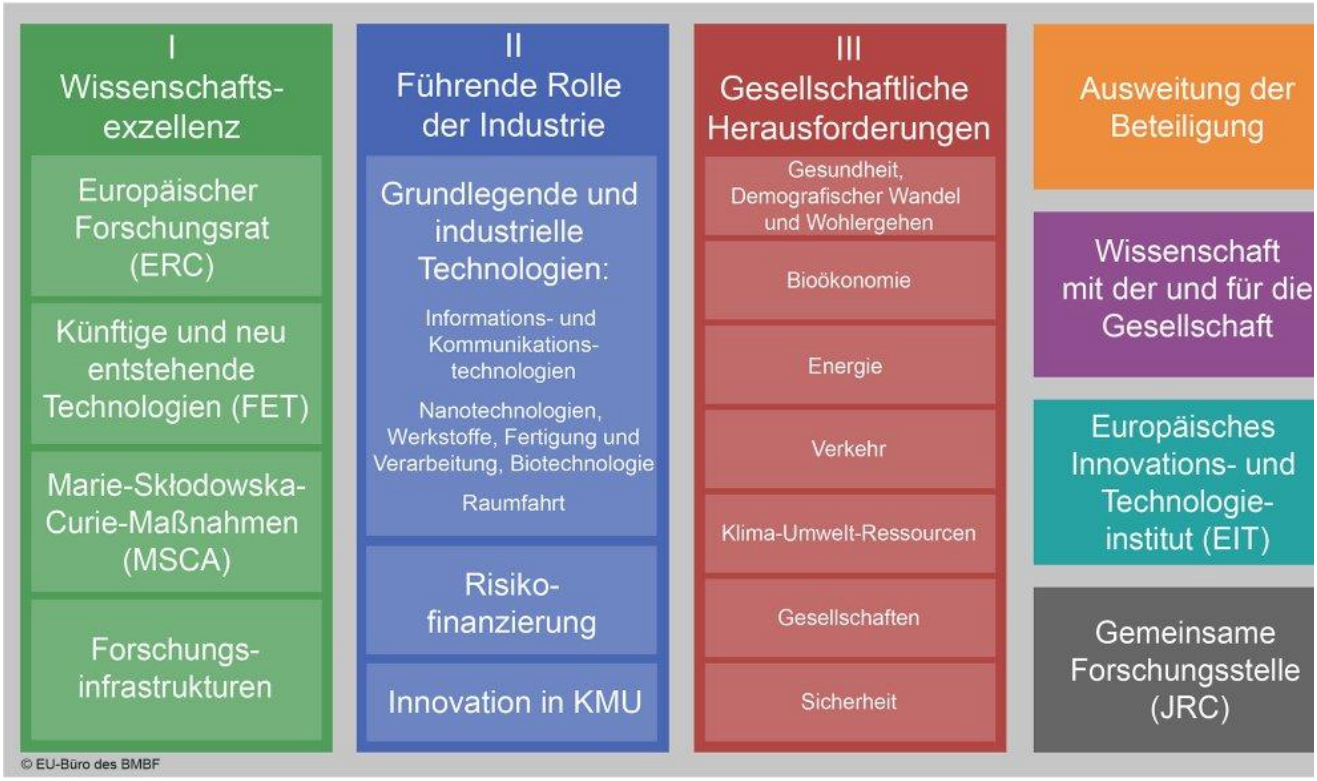

Abb. 1 Programmstruktur Horizont 2020

2.1. Thematische Übersicht über die aufgelisteten Ausschreibungen

Förderlinie	Call	Titel	Synergienbezug[1]
Future and Emerging Technologies	**FETPROACT-02-2018**	Community building in Neuromorphic Computing Technologies	Regionen
Future and Emerging Technologies	**FETPROACT-03-2018**	FET ERA-NET Cofund	Regionen
Future and Emerging Technologies	**FETFLAG-02-2018**	ERA-NET Cofund for FET Flagships	Regionen
Future and Emerging Technologies	**FETFLAG-03-2018**	FET Flagship on Quantum Technologies	Regionen
Marie Skłodowska-Curie actions (MSCA)	**MSCA-COFUND-2018**	Co-funding of regional, national and international programmes	ESIF, Regionen, RIS3
European Research Infrastructures	**INFRAEDI-02-2018**	HPC PPP - Centres of Excellence on HPC	Regionen
Leadership in Enabling and Industrial Technologies	**DT-FOF-01-2018**	Skills needed for new Manufacturing jobs (CSA)	ESIF
Leadership in Enabling and Industrial Technologies	**CE-SPIRE-03-2018**	Energy and resource flexibility in highly energy intensive industries	ESIF, RIS3
Leadership in Enabling and Industrial Technologies	**ICT-11-2018-2019**	HPC and Big Data enabled Large-scale Test-beds and Applications	ESIF, RIS3
Leadership in Enabling and Industrial Technologies	**ICT-14-2019**	Co-designing Extreme Scale Demonstrators (EsD)	Regionen, RIS3
Leadership in Enabling and Industrial Technologies	**ICT-24-2018-2019**	Next Generation Internet - An Open Internet Initiative	Regionen
Leadership in Enabling and Industrial Technologies	**ICT-33-2019**	Startup Europe for Growth and Innovation Radar	ESIF
Leadership in Enabling and Industrial Technologies	**Leadership in Enabling and Industrial Technologies: Framework Partnership Agreement in European low-power microprocessor technologies**	n/a	ESIF, Regionen, RIS3

1 ESIF = Hinweis auf Synergien mit den ESIF im Ausschreibungstext
Regionen = Ausschreibungen adressiert an Regionen (Politik- und Programmplaner, ESIF-Verwaltungsbehörden)
RIS3 = Regionen werden aufgefordert, innerhalb ihrer Smart Specialisation Strategy RIS3 interregional zusammenzuarbeiten

Förderlinie	Call	Titel	Synergienbezug
Health, demographic change and wellbeing	**SC1-HCC-05-2018**	Support to a Digital Health and Care Innovation initiative in the context of Digital Single Market strategy	ESIF
Health, demographic change and wellbeing	**SC1-HCO-06-2018**	Establishment of an International Network of Social Sciences Research Centres to help address governance and other challenges in the preparedness for and the response to infectious threats	Regionen
Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy	**SFS-31-2019**	ERANETs in agri-food – Linie A: ICT-enabled agri-food systems	ESIF, Regionen, RIS3
Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy	**BG-01-2018**	Towards a Baltic and North Sea research and innovation programme	Regionen
Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy	**BG-02-2018**	Blue Bioeconomy Public-Public Partnership	Regionen
Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy	**RUR-09-2018**	Realising the potential of regional and local bio-based economies	Regionen, RIS3
Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy	**CE-RUR-10-2019**	Circular bio-based business models for rural communities	Regionen
Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy	**DT-RUR-12-2018**	ICT Innovation for agriculture – Digital Innovation Hubs for Agriculture	Regionen
Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy	**RUR-15-2018-2019-2020**	Thematic networks compiling knowledge ready for practice	ESIF

Förderlinie	Call	Titel	Synergienbezug
Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy	**RUR-16-2019**	Fuelling the potential of advisors for innovation	Regionen
Secure, clean and efficient energy	**LC-SC3-EE-16-2018-2019-2020**	Supporting public authorities to implement the Energy Union	Regionen
Secure, clean and efficient energy	**LC-SC3-ES-7-2018**	Pan-European Forum for R&I on Smart Grids, Flexibility and Local Energy Networks	Regionen
Secure, clean and efficient energy	**LC-SC3-JA-1-2018**	Joint programming actions to foster innovative energy solutions	Regionen
Secure, clean and efficient energy	**LC-SC3-CC-4-2018**	Support to sectorial fora	ESIF, Regionen
Secure, clean and efficient energy	**LC-SC3-CC-6-2018**	Transition in coal intensive regions	ESIF, RIS3
Secure, clean and efficient energy	**LC-SC3-EE-17-2019**	European City facility - European Cities as key innovation hubs to unlock finance for energy efficiency	ESIF
Secure, clean and efficient energy	**LC-SC3-ES-8-2019**	European Islands Facility - Unlock financing for energy transitions and supporting islands to develop investment concepts	ESIF
Smart, green and integrated transport	**MG-2-6-2019**	Moving freight by Water: Sustainable Infrastructure and Innovative Vessels	ESIF
Climate action, environment, resource efficiency and raw matarials	**CE-SC5-05-2018**	Coordinated approaches to funding and promotion of research and innovation for the circular economy	Regionen
Climate action, environment, resource efficiency and raw matarials	**SC5-21-2019-2020**	ERA-NET Cofund action(s) for climate action, environment, resource efficiency and raw materials	Regionen
Europe in a changing world – Inclusive, innovative and reflective societies	**TRANSFORMATIONS-03-2018-2019**	Innovative solutions for inclusive and sustainable urban environments	RIS3

Förderlinie	Call	Titel	Synergienbezug
Europe in a changing world – Inclusive, innovative and reflective societies	**TRANSFORMATIONS-04-2019-2020**	Innovative approaches to urban and regional development through cultural tourism	ESIF
Europe in a changing world – Inclusive, innovative and reflective societies	**TRANSFORMATIONS-06-2018**	Inclusive and sustainable growth through cultural and creative industries and the arts	RIS3
Spreading Excellence and Widening Participation	**WIDESPREAD-01-2018-2019**	Teaming Phase 2	ESIF
Spreading Excellence and Widening Participation	**WIDESPREAD-02-2018**	Support to JPI Urban Europe	ESIF, RIS3
Spreading Excellence and Widening Participation	**WIDESPREAD-04-2019**	ERA Chairs	ESIF
European Innovation Council (EIC) pilot	**European Innovation Council pilot**	EIC Community Platform	RIS3

3. Ausschreibungen (Calls)

3.1. Säule I: Wissenschaftsexzellenz

3.1.1. Künftige und neu entstehende Technologien (FET)

FETPROACT-02-2018: Community building in Neuromorphic Computing Technologies

Specific Challenge: To network and coordinate the efforts of the European academic and industrial research and innovation communities in neuromorphic computing (NMC) technologies. To showcase a wide variety of NMC technologies and their applicability in cognitive computing, capitalising on their key benefits such as greater flexibility, efficiency and their adaptive and permanent learning capabilities. To stimulate wide industrial interest and further public-private investment in the field, accelerating technology transfer, take-up and innovation within an expanding European NMC eco-system.

Scope: Proposals should aim at networking and coordinating the efforts of the relevant NMC stakeholders, notably academia, RTOs and industry by addressing the following: constituency/eco-system building, through dedicated events, and the fostering of collaboration among related research and innovation projects in Europe to facilitate the matching of NMC technologies with industrial needs; joint research and innovation road mapping of NMC technologies and solutions in different application domains; pre-normative and education activities and; pre-normative and education activities and harmonised benchmarking of NMC solutions in the different application domains; and wide diffusion of NMC technologies, including by supporting the promotion of technology cases and eye-opening demonstrators in promising industry sectors such as automotive, robotics, manufacturing and more generally for big data analysis, learning and adaptation to evolving contexts of operation.

Expected Impact: Proposals should address the following impact criteria, providing metrics to measure success where appropriate:

- Increased synergies and collaboration between research and innovation projects in Europe;
- Increased synergies across national and European Programmes supporting NMC technologies;
- Increased industrial support and engagement in jointly developing NMC solutions in key applications domains backed up by a high-quality research and innovation roadmap in the related areas;
- Availability of NMC technologies demonstrating their applicability and innovation potential in relevant industry sectors;
- Development of NMC innovation programmes and communities in Europe including dissemination and education aspects.

Type of Action: Coordination and support action

Budget: 0.50 million EUR

Opening: 31 October 2017

Deadline: 22 March 2018

FETPROACT-03-2018: FET ERA-NET Cofund

Specific Challenge: to advance the construction of the European Research Area in the FET domain by sharing a common vision of the various relevant efforts in Europe and fostering cooperation towards the coordinated development of radically new future technologies.

Scope: Proposals should coordinate and pool the necessary financial resources from the participating national (or regional) research programmes in the FET domain by implementing a joint transnational call for proposals resulting in grants to third parties with EU co-funding, possibly followed by further transnational calls for proposals without EU co-funding. The action may also organise additional joint activities in the FET domain between the participating funding agencies. Two activities are mandatory:

1. Identifying future and emerging technologies where transnational cooperation and community structuration is needed, in complementarity and synergy with FET;
2. Developing strategic agendas for these topics and accompanying the structuration of the related communities through workshops and transversal activities.

The partnership is expected to aim at being pan-European and as inclusive as possible.

Expected Impact: Closer coordination and greater mobilisation and pooling of resources between regional, national and EU research programmes in the FET domain.

Type of Action: ERA-NET Cofund

Budget: 6.00 million EUR

Opening: 05 June 2018

Deadline: 18 December 2018

FETFLAG-02-2018: ERA-NET Cofund for FET Flagships

Specific Challenge: To fund partnering projects (PPs) and coordinate the national activities and support of Member States and Associated Countries (MS/AC) to the Graphene and HBP Flagships. PPs are projects funded from other sources (e.g. by national/regional funding) which address areas relevant for the Flagships and contribute to their objectives.

Scope: One follow-up action to the FLAG-ERA II ERA-NET Cofund action (http://www.flagera.eu/) aiming to coordinate and pool the necessary financial resources from the participating national and regional research programmes to fund PPs of the two Flagships by implementing a joint transnational call for proposals resulting in grants to third parties, possibly followed by further joint calls without EU co-funding. The action may also organise additional joint activities between the participating funding agencies in support of the two Flagships.

Expected Impact: Closer coordination and greater mobilisation and pooling of resources between regional, national and EU research programmes for realising the research goals of the FET Flagships.

Type of Action: ERA-NET Cofund

Budget: 10.00 million EUR

Opening: 31 October 2017

Deadline: 17 April 2018

FETFLAG-03-2018: FET Flagship on Quantum Technologies

Specific Challenge: To build a strongly networked European Quantum Technologies (QT) community around the common goals defined in the Strategic Research Agenda19. To create the European ecosystem that will deliver the knowledge, technologies and open research infrastructures and testbeds necessary for the development of a world-leading knowledge-based industry in Europe, leading to long-term economic, scientific and societal benefits. To move advanced quantum technologies from the laboratory to industry with concrete prototype applications and marketable products while advancing at the same time the fundamental science basis, in order to continuously identify new applications and find better solutions for solving outstanding scientific or technology challenges.

Scope: A. Research and Innovation Actions

Proposals are expected to address a mix of quantum technology challenges addressing one or more of the following areas, integrating different aspects like physics, engineering, computer science, theory, algorithms, software, manufacturing, control, infrastructures, etc. Each activity should clearly move the technology up the TRL scale. For areas a. to d., proposals can integrate various activities covering the whole value chain, from fundamental to applied research, and with other types of activity, including demonstrators, etc., as appropriate.

a. Quantum Communication: Development of state-of-the art network devices, applications and systems (memories, quantum repeaters, network equipment, high throughput miniaturised quantum random number generators, etc.) for quantum communication mesh-networks. Proposals should target cost-effective solutions, devices and systems compatible with existing communication networks and standard cryptography systems, as well as device-independent protocols. Each proposal should address aspects like engineering, protocols, certification, software, algorithms. Actions should include validation of the proposed solution, proof of its suitability for the targeted application and benchmarking with respect to relevant targets set by the CSA in this area.

b. Quantum Computing Systems: The development of open quantum computer experimental systems and platforms, integrating the key building blocks such as quantum processors (>10qubits) with limited qubit overhead, control electronics, software stack, algorithms, applications, etc. Work should address the scalability towards large systems (>100 qubits), the verification and validation of the quantum computation, fault-tolerance and solving a concrete computational problem to demonstrate the quantum advantage. Projects should foresee benchmarking activities. Benchmarks will be identified by the CSA for all the platforms selected in this area.

c. Quantum Simulation: Proposals should aim at delivering operational demonstrators, based on existing physical platforms that have shown a clear perspective to achieve more than 50 interacting quantum units and / or full local control. They should work towards demonstrating a certified quantum advantage for solving difficult scientific or industrial problems (e.g. material design, logistics, scheduling, machine learning, optimisation, artificial intelligence, drug discovery, etc.). The proposed solutions need to include the development of protocols, validation schemes and control, simulation software, system configuration and optimisation. Work should address the scalability towards larger systems with more qubits. Projects should foresee benchmarking activities related to real life applications. Benchmarks will be identified by the CSA for all the platforms selected in this area. Hybrid architectures are also to be considered under this area when relevant.

d. Quantum Metrology and Sensing: Quantum sensors for specific application areas such as imaging, healthcare, geo-sciences, outdoor and indoor navigation, time or frequency, magnetic or electrical measurements, etc. … as well as novel measurement standards, making use of the advances in controlling the fundamental quantum properties. It is expected that the work will lead to practical sensing devices, imaging systems and quantum standards that employ quantum coherence and outperform classical counterparts (resolution, stability) targeting TRL 3 and 4 and showing potential for further miniaturisation/integration into industrial systems.

e. Fundamental science: Research and development of basic theories and components, addressing a foundational challenge of relevance for the development of quantum technologies in at least one of the four areas a.-d. described above, to improve the performance of the components or subsystems targeted in those areas. Proposals must clearly indicate how they support a challenge for one or more of these areas.

For areas a. to d., proposals should be based on a close cooperation between academia and industry, define output and impact KPIs, include technology benchmarking against other approaches, and include user requirements.

For areas a. to c. above, proposals should seek synergies with relevant national / regional research and innovation programmes running in these areas. They shall clearly specify how they are connected to the programmes and / or how they will incorporate the platforms, testbeds and infrastructures existing in Europe, how they will attract and build communities around them for openly promoting further technology developments as well as testing and benchmarking in the field and how they build on top of these to create European added value. Proposals combining different sources of financing should include a concrete financial plan detailing the use of these funding sources for the different parts of their activities.

The Commission considers that proposals for Research and Innovation Actions requesting a contribution from the EU up to EUR 10 million would allow the areas a. to d. to be addressed appropriately; and proposals requesting a contribution from the EU between EUR 2 and 3 million would allow the area e. to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

When appropriate, proposals may provide financial support to third parties established in a EU member state or country associated with Horizon 2020 and in line with the conditions set out in General Annex K, for example to access specific expertise or infrastructure. The consortium will define the selection process of

third parties for which financial support will be granted (with a maximum of EUR 100 00028 per party). A maximum of 10% of the EU funding requested by the proposal should be allocated to this purpose.

All projects shall make provisions to actively participate in the common activities of the Quantum Flagship and in particular: coordinate technical work with the other selected projects of the Flagship; and contribute to the activities of the Coordination and Support Action defined under item B. below.

Note that special Grant Conditions will apply for projects granted under this topic. Please see under Call Conditions.

B. Coordination and Support Action

Proposals should aim at coordinating the relevant stakeholders, notably academia, RTOs and industry participating in the Flagship initiative. In particular, it is expected to establish a communication platform, facilitate dialogue, promote the objectives of the Flagship and monitor the progress, support the governance structure, organize outreach events (including addressing the impact of technology development on economy and society), identify training and education needs and promote European curricula in quantum engineering, identify and coordinate relevant standardisation, IPR actions, and international collaboration and help networking of respective national and international activities in the field. The action will also identify, together with the community, benchmarks for all communication/computing/simulation platforms selected under areas a. to c. of the Research and Innovation Actions described under item A. above.

It is expected that such an activity is driven by the relevant actors of the field including academia, RTOs and industry.

The Commission considers that proposals for Coordination and Support Actions requesting a contribution from the EU of up to 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: A. Research and Innovation Actions

- Contribute to the strategic objectives of the Flagship;
- Expand European leadership and excellence in quantum technologies;
- Scientific breakthroughs that form the basis for future technologies;
- Synergetic collaboration with existing European platforms and infrastructures;
- Kick-start a competitive European quantum industry;
- Availability of open platforms and infrastructures accessible to the European Quantum technologies Community.

B. Coordination and Support Action

- A well-coordinated European initiative on Quantum Technologies, involving all relevant stakeholders and linked with relevant international, national and regional programmes, while assuring an efficient support to the governance of the Flagship;
- Spreading of excellence on Quantum Technologies across Europe, increased awareness of European activities and availability of European curricula in the field.

Type of Action: Coordination and support action, Research and Innovation action

Budget: 2.00 million EUR (CSA), 130.00 million EUR (RIA)

Opening: 31 October 2017

Deadline: 20 February 2018

3.1.2. Marie-Skłodowska-Curie-Maßnahmen (MSCA)

MSCA-COFUND-2018: Co-funding of regional, national and international programmes

Objective: The COFUND scheme aims to stimulate regional, national or international programmes to foster excellence in researchers' training, mobility and career development, spreading the best practices of the Marie Skłodowska-Curie actions.

This will be achieved by co-funding new or existing regional, national, and international programmes to open up to, and provide for, international, intersectoral and interdisciplinary research training, as well as transnational and cross-sectoral mobility of researchers at all stages of their career.

Scope: Each proposal funded under the COFUND scheme must have a sole beneficiary that will be responsible for the availability of the necessary complementary funds to execute the proposal.

Applicants submit multi-annual proposals for new or existing doctoral programmes or fellowship programmes which are expected to have an impact on enhancing research- and innovation related human resources on regional, national or international level.

Applicants having benefited from COFUND under previous calls (under the Seventh Framework Programme or under Horizon 2020) must explain how their proposal adds value in relation to the excellence and/or the impact award criteria, compared to their previous grant(s). As an example, added value could take the form of increased networking with organisations in less represented countries or capacity building measures there to further structure the European Research Area.

Researchers supported under this scheme shall comply with the mobility rules of the Marie Skłodowska-Curie actions.

Limitations regarding the researchers' origin and destination should be avoided. Support cannot be awarded to researchers who are already permanently employed by the organisation hosting them.

Proposed programmes are encouraged to cover all research disciplines ("bottom-up"), but can also focus on specific disciplines. In this case the range of covered disciplines should allow reasonable flexibility for the researchers.

Programmes that prioritise specific research disciplines based on national or regional Research and Innovation Strategies for Smart Specialisation (RIS3 strategies) can also be supported. Synergies with the European Structural & Investment Funds (ESIF) are encouraged.

COFUND takes the form of:

A. Doctoral programmes

Doctoral programmes address the development and broadening of the research competencies of early-stage researchers. The training follows the EU Principles on Innovative Doctoral Training. Substantial training modules, including digital ones, addressing key transferable skills common to all fields and fostering the culture of Open Science, innovation and entrepreneurship will be supported. Collaboration with a wider set of partner organisations, including from the non-academic sector, which may provide hosting or

secondment opportunities or training in research or transferable skills, as well as innovative and interdisciplinary elements of the proposed programme, will be positively taken into account during the evaluation.

Each researcher must be enrolled in a doctoral programme. Attention is paid to the quality of supervision and mentoring arrangements as well as career guidance. The selection procedure for doctoral candidates must be open, transparent and merit-based. The vacancy notice must include the minimum gross salary offered to the researcher, as set out in the proposal.

B. Fellowship programmes

Fellowship programmes fund individual research training and career development fellowships for experienced researchers. The programmes supported should have regular selection rounds following fixed deadlines or regular cut-off dates, allowing fair competition between the researchers applying. The selections should be based on open, widely advertised competition (the vacancy notice must include the minimum gross salary offered to the researcher, as set out in the proposal), with transparent international peer review and the selection of candidates on merit. Mobility types supported by fellowship programmes may be similar to the ones supported under Marie Skłodowska-Curie Individual Fellowships. On top of transnational mobility, applicants are encouraged to include elements of cross-sectoral mobility and interdisciplinarity into their programmes. Fellowship programmes should be based on individual-driven mobility, i.e., researchers should be able to freely choose a research topic and the appropriate organisation to host them, fitting their individual needs.

Given that the aim of the co-funded fellowship programmes is the support of individual fellows, research teams will not be funded.

Expected Impact:

At researcher level:

- Augment and diversify the set of skills, both research-related and transferable ones, that will lead to improved employability and career prospects both in and outside academia
- Forge new mind sets and approaches to research and innovation work through interdisciplinary and intersectoral experience
- Enhance networking and communication capacities with scientific peers, as well as with the general public, that will increase and broaden the research and innovation impact

At organisation level:

- Increasing the attractiveness of the participating organisation(s) towards talented researchers
- Boosting research and innovation output among participating organisations
- Strengthening of international, intersectoral and interdisciplinary collaborative networks that will reinforce the organisation's position and visibility at a global level, but also at a regional/national level by helping them become key actors and partners in the local socio-economic ecosystems

At system level:

- Aligning of practices and policies in the context of the EU Human Resources Strategy for Researchers (HRS4R), enhanced implementation of the Charter and Code and the EU Principles for Innovative Doctoral Training at regional, national or international level

- Supporting the practice of Open Science through targeted training activities
- Increase in international, interdisciplinary and intersectoral mobility of researchers in Europe
- Improvement in the working and employment conditions for researchers in Europe at all levels of their career, starting from the doctoral stage
- Strengthening of Europe's human capital base in research and innovation and structuring of a stronger European Research Area
- Increase in Europe's attractiveness as a leading destination for research and innovation
- Better quality research and innovation contributing to Europe's competitiveness and growth, including by supporting regional or national smart specialisation strategies when appropriate.

Type of Action: Doctoral programmes, Fellowship programmes

Budget: 30.00 million EUR (DP), 50.00 million (FP)

Opening: 12 April 2018

Deadline: 27 September 2018

3.1.3. FORSCHUNGSINFRASTRUKTUREN

INFRAEDI-02-2018: HPC PPP - Centres of Excellence on HPC

Specific Challenge: This topic covers two interrelated and synergic areas:

(a) *Supporting Centres of Excellence (CoE)* that promote the use of upcoming exascale and extreme performance computing capabilities in areas where user communities in collaboration with other HPC stakeholders can develop or scale up existing parallel codes towards exascale and extreme scaling performance, resulting into tangible benefits for addressing scientific, industrial or societal challenges.

(b) *Addressing the fragmentation of activities for excellence in HPC applications*, and fostering the widening of the use of HPC codes in the EU, by establishing a focal point for the consulting skills and training available from the CoE, and from other HPC centres or organisations, including PRACE.

Scope: A. Research and Innovation Actions

CoEs will be user-driven and inherently committed to co-design activities so as to ensure that future HPC architectures are well-suited for the applications and their users, providing them with a high performance and scalable application base. CoEs will federate capabilities around Europe, exploiting available competences, and ensuring multidisciplinarity (combining application domain and HPC system, software and algorithm expertise) and synergies with national/local programmes.

Proposals for CoEs should clearly identify one of the following areas as the main focus of their work and the challenges addressed:

- Engineering: aeronautics, automotive and/or new combustion engines;
- Environmental sciences: climate and weather simulation, natural hazards forecast and prevention;

- Biomolecular research: combined research in chemical, biological, physical and computational science;
- Health/medicine:, computational methods and simulation in the biomedical domain;
- Materials science and engineering: materials design, simulation and modelling;
- Energy: optimising energy consumption and supporting the transition to a reliable and low carbon and clean energy supply;
- Big Data and Global Challenges: Big Data analytics for strategic global issues;
- Performance optimisation: optimisation and productivity services for HPC academic and industrial code(s) (including support to selected Centres of Excellence)
- Other domains (with a focus not addressed by any of the areas above)

Proposals should address all the following points:

- Research in HPC applications towards highly scalable, optimised codes and the path to exascale performance (both computing and extreme data);
- The provision of services supporting different usage models for the community needs, and contributing to the potential convergence of HPC, High Throughput Computing (HTC), and HPDA (High-Performance Data Analytics). This includes developing, maintaining, optimising (if needed re-design) and scaling HPC application codes, addressing the full scientific/industrial workflow, particularly covering data aspects; testing and validating codes and quality assurance;
- Commitment to the co-design approach (hardware, software, codes), including the identification of suitable applications relevant to the development of HPC technologies towards exascale;
- In collaboration with PRACE, address the skills gap in computational science in the targeted domain by specialised training and capacity building measures to develop the human capital resources
- Widening the access to codes and fostering transfer of know-how to user communities, including specific and targeted measures for industry and SMEs;
- Business plans for long-term sustainability embracing a wide range of service models and funding options;
- In collaboration with the support action foreseen for CoEs (specific challenge (b) of this topic), addressing the fragmentation of HPC activities for excellence in applications, and fostering the widening of the use of HPC codes in the EU

Proposals should include clear KPIs allowing the assessment and monitoring of the progress towards the objectives, both in terms of outputs and ultimate impact.

The Commission considers that proposals requesting a contribution from the EU of between EUR 6 and 8 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

Proposals will address the following activities:

- Coordinate the services (including e.g. consultancy to other organisations), training and skills development, and outreach activities for the CoE projects and potentially other initiatives and HPC stakeholders (e.g. PRACE), ensuring that best practices are shared;
- Act as a clearing house for HPC training and consultancy, working with relevant stakeholders to ensure gaps are filled and overlaps avoided where possible;
- Promote outreach to industry and SMEs, especially targeting specific industrial sectors and their events, and in view of supporting the INFRAINNOV-01-2019 action for stimulating the innovation potential of SMEs as users of advanced HPC services.

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

Expected Impact:

A. R*esearch and Innovation Actions*

- European leadership in exascale and extreme-scale -oriented codes and innovative algorithms/solutions that address societal challenges or are important for key scientific and industrial applications;
- Improved access to computing applications and expertise that enables researchers and industry to be more productive, leading to scientific excellence and economic and social benefit;
- Improved competitiveness for European companies and SMEs through access to CoE expertise and services;
- Federating capabilities and integrating communities around computational science in Europe;
- A large number of scientists and engineers, in particular female and young ones, trained in the use of computational methods and optimisation of applications.

B. Coordination and Support Action

- Access to consultancy and services (including training) offered by CoEs for external potential users and learners;
- Maximise visibility and outreach of Centres of Excellence, in particular to industry;
- Promoting the use of HPC by identifying industrial and SMEs users in the different business areas, and matching their needs with the available expertise in the CoEs;
- Improved coordination and increased availability of training activities on HPC in Europe, in particular with PRACE.

Type of Action: Research and Innovation action, Coordination and support action

Budget: 72.00 million EUR (RIA), 2.00 million EUR (CSA)

Opening: 05 December 2017

Deadline: 22 March 2018

3.2. Säule II: Führende Rolle der Industrie

3.2.1. Grundlegende und industrielle Technologien

DT-FOF-01-2018: Skills needed for new Manufacturing jobs (CSA)

Specific Challenge: Breakthrough education and training paradigms for continuous training of the existing workforce are needed, that will enable the European industrial workforce to develop new skills and competences in a quick and efficient way. This should put workers, both women and men, at the forefront of innovation and drive industry towards a smooth transition to the use of increasingly sophisticated machines and new technologies.

Advanced Manufacturing, one of the six Key Enabling Technologies (KETs), is a highly innovative sector in Europe. In line with the New Skills Agenda for Europe, there is a need to strengthen human capital, employability and competitiveness for this KET. The Blueprint for Sectoral Cooperation on skills is one of the ten actions in this Agenda. This topic will support the implementation of the Blueprint beyond Additive Manufacturing within several areas from the Factories of the Future priorities.

Scope:

- Identify shortages and mismatches in technical and non-technical skills, knowledge and competences in Advanced Manufacturing (including digital capabilities);
- Map the most relevant existing national initiatives upskilling the existing workforce in order to develop an EU wide strategy;
- Put in place activities related to lifelong learning and granting of qualification for personnel in industrial settings. Develop real case scenarios providing efficient methodologies that can be applied in a variety of industrial areas;
- Innovative and hands-on approaches, including Social Sciences and Humanities (SSH) elements, in upskilling of the existing workforce and attracting more women to the field, through training activities (including training of trainers) and knowledge management with direct involvement of senior employees. On-site, modular and e-learning education should be offered free of charge for re-use;
- Exchange of information between industry, trade unions, educational centres, national employment agencies at European scale.

Proposals are also encouraged to seek synergies with national initiatives funded under the European Social Fund, projects from the Skills Alliances and, where relevant, other future initiatives launched at European level.

The Commission considers that proposals requesting a contribution from the EU 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:

- Real and measurable steps towards the reduction of identified skill gaps leading to the upskilling of the existing workforce in Europe and, as a consequence, increased innovation performance in the industry concerned;
- At least 15 new job profiles per industrial area analysed, leading to a longer work life for jobholders;
- Close and continuous engagement between relevant industry, trade union, academia, educational centres (including vocational schools) across Europe to stimulate networks in the European Research Area as a whole.

Type of Action: Coordination and support action

Budget: 2.00 million EUR

Opening: 31 October 2017

Deadline: 22 February 2018

CE-SPIRE-03-2018: Energy and resource flexibility in highly energy intensive industries

Specific Challenge: Energy intensive industries should adapt their production processes and unit operations to increasingly sustainable, but highly fluctuating energy supply. To this end, energy and resource flexibility in the European process industry can be improved through the development of novel processes utilising more efficiently energy streams, heat recovery and raw materials flows with variable properties (including new or modified materials as well as secondary raw materials and by-products).

The challenge is to establish synergistic integration at a regional level among different production sectors leading to optimisation of production system as a whole and logistics, especially in terms of the supply of energy and raw materials. This should reduce emissions and environmental impact, while maintaining competitiveness and job security.

Scope: Solutions are needed for value chain optimisation through energy efficiency considerations in the design phase of manufacturing equipment and processes, collective demand side strategies, and potential integration of the nearby renewable energy sources.

In particular, proposals are expected to develop:

- Innovative production technologies allowing flexibility in terms of raw material, including new, modified or secondary raw materials, and intermediate or final products are expected to be developed. They have, at the same time, to consider quality of the main products and by-products in view of their valorisation through re-use and recycle;
- Novel advanced energy systems, could include new combustion and gasification techniques applied to the highly resource and energy intensive industries have to be developed;

- New developments should clearly indicate how the use of sustainable electrical energy sources, or heat recovery, could enhance energy efficiency and cope with a fluctuating energy input. These actions have to bring a significant impact on the sustainability profile of the process and/or the final products.

Proposals need to consider the following elements:

- Treatment technologies and process integration solutions allowing a significant reduction as well as the valorisation, re-use and recycling of by-products and waste streams (solid, liquids and gaseous);

- System, process modelling and integration (up and down-stream) within the plant operation terms or symbiosis concepts, improving energy and raw materials efficiency and flexibility, and minimising the impact on the environment of the whole value chain. Taking also into consideration optimisation at a plant/system level. The activities have to be supported by a quantitative Life Cycle Assessment.

Proposals should include multiple demonstrators, including retrofitting of industrial installations, in a highly energy and resource intensive industry-relevant environment. The whole value chain should be considered, as well as relevant regulations which support the recycling of waste materials in Europe. Exploitation of structural and regional funds in connection with smart specialisation strategies is strongly encouraged.

Activities should start at TRL 5 and achieve TRL 7 at the end of the project.

The Commission considers that proposals requesting a contribution from the EU between EUR 8 and 12 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

As an exception from General Annex H, the funding rate for direct costs in grants awarded under this topic will be differentiated: 100% of the eligible costs for beneficiaries and linked third parties that are non-profit legal entities; and 50% of the eligible costs for beneficiaries and linked third parties that are for profit legal entities.

Expected Impact:

- Cost reduction of the process of at least 10% through the implementation of a flexible scheme in raw materials, including secondary raw materials, process and product quality specifications;

- Improved process efficiency through re-utilisation of energy and/or material process streams by at least 15%;

- CO2 emissions reduction by at least 5% and reduction of the environmental impact in terms of the main key performance indicators by at least 15%;

- Effective dissemination of major innovation outcomes to the current and next generation of employees, through the development, by education/training experts, of learning resources with flexible usability. These should be ready to be easily integrated in existing curricula and modules for undergraduate level and lifelong learning programmes.

Relevant indicators and metrics, with baseline values, should be clearly stated in the proposal.

Type of Action: Innovation action

Budget: 97.50 million EUR (all CE-SPIRE-XX-2018 calls!)

Opening: 31 October 2017

Deadline: 22 February 2018

ICT-11-2018-2019: HPC and Big Data enabled Large-scale Test-beds and Applications

Specific Challenge: The Internet of Things and the convergence of HPC, Big Data and Cloud computing technologies are enabling the emergence of a wide range of innovations. Building industrial large-scale application test-beds that integrate such technologies and that make best use of currently available HPC and data infrastructures will accelerate the pace of digitization and the innovation potential in Europe's key industry sectors (for example, healthcare, manufacturing, energy, finance & insurance, agri-food, space and security).

Scope: a) Innovation Actions (2018 call - deadline in April 2018) targeting the development of large-scale HPC-enabled industrial pilot test-beds supporting big data applications and services by combining and/or adapting existing relevant technologies (HPC / BD / cloud) in order to handle and optimize the specific features of processing very large data sets. The industrial pilot test-beds should handle massive amounts of diverse types of big data coming from a multitude of players and sources and clearly demonstrate how they will generate innovation and large value creation. The proposal shall describe the data assets available to the test-beds and, as appropriate, the standards it intends to use to enable interoperability. Pilot test-beds should also aim to provide, via the cloud, simple secure access and secure service provisioning of highly demanding data use cases for companies and especially SMEs.

b) Innovation Actions (2018 call - deadline in November 2018) targeting the development of large-scale IoT/Cloud-enabled industrial pilot test-beds for big data applications by combining and taking advantage of relevant technologies (Big Data, IoT, cloud and edge computing, etc.). The aim is to develop industrial pilot test-beds addressing data flows from a very large number of distributed sources (such as sensors or IoT applications/infrastructures and/or involving remote data storage/processing locations) and clearly demonstrate how they will generate innovation and large value creation from such data assets. The industrial pilot test-beds shall also address the relevant networking connectivity and large-scale data collection, management and interoperability issues. The data assets available to the test-beds should be described in the proposal. Pilot test-beds should also aim to provide, via the cloud, simple secure access and secure service provisioning of highly demanding data use cases for companies and especially SMEs.

a) is called in the 2018 call with a deadline in April 2018. b) is called in the 2018 call with a deadline in November 2018.

For all subtopics a), b) above:

Proposals should be led by and show strong industrial commitment. They should explain how the proposed activities will be industrialized and have impact on the competitiveness and leadership of European industry. They should target a wide participation and/or applicability and use of the targeted industrial pilot test-bed by industrial members/users from different countries and regions. They should also define quantifiable outputs and impact Key Performance Indicators, in particular related to the "Expected Impact" of the topic.

The Commission considers that proposals requesting a contribution from the EU between EUR 12 and 13 million for subtopic a), and EUR 15 and 18 million EUR for subtopic b) would allow these areas to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Proposals could seek synergies and co-financing from relevant national / regional research and innovation programmes, including European Structural and Investment Funds (ESIF) addressing pre-identified smart specialisation priorities at regional / national level. Proposals combining different sources of financing should include a concrete financial plan detailing the use of these funding sources for the different parts of their activities.

All grants under both subtopics will be subject to Article 30.3 of the grant agreement (Commission right to object to transfers or licensing).

Expected Impact: Proposals should address the following impact criteria, providing metrics to measure success where appropriate:

- Demonstrated increase of innovation and productivity in the main target sector of the Large Scale Pilot Action;
- Increase of market share of Big Data technology providers if implemented commercially within the main target sector of the Large Scale Pilot Action;
- Effective integration of HPC/BD/Cloud/IoT technologies in the main target sector(s) of the Large Scale Action, resulting into integrated value chains and efficient business processes of the participating organizations;
- Widening the use of and facilitating the access to advanced HPC, big data and cloud infrastructures stimulating the emergence of the data economy in Europe;
- Stimulating additional private and public target investments in HPC and Big Data technologies from industry, Member States and Associated Countries, and other sources, as referred to in the contractual arrangements of the HPC and/or the Big Data Value Public Private Partnerships.

Type of Action: Innovation action

Budget: 50.00 million EUR (2018), 40.00 million EUR (2019)

Opening: 31 October 2017, 26 July 2018

Deadline: 17 April 2018, 14 November 2018

ICT-14-2019: Co-designing Extreme Scale Demonstrators (EsD)

Specific Challenge: To demonstrate in operational environments the successful integration of technology building blocks developed in previous R&I actions into world-class Extreme Scale Demonstrators. The challenges of power efficiency, resiliency and scalability of these systems require a strong co-design approach driven by ambitious applications involving technology suppliers, system integrators, supercomputing infrastructure providers and user communities, as well as ambitious HPC and extreme-data application owners or providers.

Scope: Proposals are expected to address the research, co-design, integration, validation and experimentation of extreme scale computing systems driven by a set of ambitious extreme data and HPC applications. EsDs should have the potential of being commercialised, operating in mode close to service delivery to users, and should integrate to a large extent technologies developed in projects funded by FP7, Horizon 2020 or other R&D actions in Europe. In particular, proposals will demonstrate how the building blocks developed in the FETHPC projects and other relevant actions supported in Horizon 2020 (e.g. the LEIT-ICT low-power microprocessor technologies) are integrated and leveraged in the EsDs (e.g. architectural work, software and parallel programming environments, etc.). EsDs are expected to demonstrate scalability up to exascale-class levels with specific design points and performance/power targets (e.g., design point target of 500 Petaflops to 1 Exaflop).

Each proposal should follow a 2-phase approach: Phase A consisting of development, integration and testing of a HW/SW system with a sufficient size to enable evaluation and validation of the design and that is fully usable by the end of this phase; and Phase B dedicated to deployment, use for relevant applications and validation in operational environments for real users. It is critical that the EsDs achieve well specified performance/power targets in both phases using a representative set of ambitious applications. These

applications will address Big Data and extreme scale computing challenges combining fast response times, and advanced Big Data analytics and High-Performance Computing techniques.

The Commission considers that proposals requesting a contribution from the EU of between EUR 20 and 40 million would allow this area to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Wherever appropriate, actions should seek synergies and co-financing from relevant national / regional research and innovation programmes in line with already existing smart specialisation priorities.

All grants under this topic will be subject to Article 30.3 of the grant agreement (Commission right to object to transfers or licensing).

Expected Impact:

- Strengthening the competitiveness and leadership of European industry & science, in particular of the European technology supply
- Proof-of-principle for pre-exascale machines addressing strategic HPC and Big-Data applications
- New operational environments and capacity available for users with extreme-data application requirements
- Contribution to the realisation of the ETP4HPC Strategic Research Agenda
- Maximising the impact and leveraging the results of European R&D projects (in particular FETHPC and related LEIT-ICT actions) into operational extreme scale demonstrators

Type of Action: Research and Innovation action

Budget: 80.00 million EUR

Opening: 26 July 2018

Deadline: 14 November 2018

ICT-24-2018-2019: Next Generation Internet - An Open Internet Initiative

Specific Challenge: This initiative aims at developing a more human-centric Internet supporting values of openness, cooperation across borders, decentralisation, inclusiveness and protection of privacy; giving the control back to the users in order to increase trust in the Internet. It should provide more transparent services, more intelligence, greater involvement and participation, leading towards an Internet that is more open, robust and dependable, more interoperable and more supportive of social innovation.

Scope: Involving today's best Internet innovators to address technological opportunities arising from cross-links and advances in various research fields ranging from network infrastructures to platforms, from application domains to social innovation. Beyond research, the scope includes validation and testing of market traction with minimum viable products and services, of new economic, mobility and social models, and involves users and market actors at an early stage. Multi-disciplinary approaches are encouraged when relevant. Eventually this initiative should influence Internet governance and related policies.

A. Research and Innovation Actions

Each Research and Innovation Action (R&I Action) will focus on a given research domain supporting the objective of a human-centric Internet. It will build a European ecosystem of researchers, innovators and

technology developers by selecting and providing financial support to the best projects submitted by third parties in a competitive manner.

Through an agile and flexible process, 'R&I Actions' will focus their support on third party projects from outstanding academic research groups, hi-tech startups and SMEs, so that multiple third parties will be funded in parallel contributing to the same research area, using short research cycles targeting the most promising ideas. Each of the selected third parties projects will pursue its own objectives, while the 'R&I Action' will provide the programme logic and vision, the necessary technical support, as well as coaching and mentoring, in order that the collection of third party projects contributes towards a significant advancement and impact in the research domain. The focus will be on advanced research that is linked to relevant use cases and that can be brought quickly to the market; apps and services that innovate without a research component are not covered by this model.

Beneficiaries shall make explicit the intervention logic for their specific research domain, their capacity to attract top Internet talents, to deliver a solid value-adding services package to the third party projects, as well as their expertise and capacity in managing the full life-cycle of the open calls transparently. They should explore synergies with other research and innovation actions, supported at regional, national or European level, to increase the overall impact.

For grants awarded under this topic for Research and Innovation actions beneficiaries may provide support to third parties as described in part K of the General Annexes of the Work Programme. The support to third parties can only be provided in the form of grants. The respective options of Article 15.1 and Article 15.3 of the Model Grant Agreement will be applied.

For the call closing in 2018 'R&I Actions' in the following three sub-topics will be called for. Proposals should address only one of these sub-topics.

i) Privacy and trust enhancing technologies: as sensors, objects, devices, AI-based algorithms, etc., are incorporated in our digital environment, develop robust and easy to use technologies to help users increase trust and achieve greater control when sharing their personal data, attributes and information.

ii) Decentralized data governance: leveraging on distributed open hardware and software ecosystems based on blockchains, distributed ledger technology, open data and peer-to-peer technologies. Attention should be paid to ethical, legal and privacy issues, as well as to the concepts of autonomy, data sovereignty and ownership, values and regulations.

iii) Discovery and identification technologies: to search and access large heterogeneous data sources, services, objects and sensors, devices, multi-media content, etc. and which may include aspects of numbering; providing contextual querying, personalised information retrieval and increased quality of experience.

'R&I Actions' should encourage, when relevant, open source software and open hardware design, access to data, standardisation activities, access to testing and operational infrastructure as well as an IPR regime ensuring lasting impact and reusability of results.

The Commission considers that proposals requesting a contribution from the EU of EUR 7 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. As a reference, 80% of the EU funding should be allocated to financial support to the third parties, through projects typically in the EUR 50 000 to 200 00034 range with duration of 9 to 12 months. Each 'R&I Action' is expected to run several cycles of third party projects, which requires an overall duration of 24 to 36 months.

In the call closing in 2018, at least one proposal will be selected in each of the three sub-topics. Another three sub-topics will be identified for the forthcoming call closing 2019; the new sub-topics will be published by the European Commission in the update to the work programme 2019 that will be done before the call is published.

B. Coordination and Support Actions

Coordination and Support Actions are called for in the following three sub-topics. Proposals should address only one of these sub-topics. At least one proposal will be selected in each of the three sub-topics.

iv) 'Technology Strategy & Policy': will engage leading-edge Internet stakeholders and will identify emerging research trends and policy needs, through a continuous public online consultation, open stakeholder engagement, fora and debates, and data analysis. It should also use the most innovative approaches and technologies, and unconventional ways to maximise involvement of those stakeholders who are new to community programmes and who will actually drive the evolution of the Internet. It should map and cooperate with national/regional initiatives and global activities where relevant. Driven by actors with a solid background and standing in today's NGI community, it aims at sustainability right from the beginning. It will be the intellectual spearhead of the 'Next Generation Internet – An Open Internet Initiative' and will closely engage with the other actions supported in this topic.

These activities could partially be implemented through small prizes; the maximum budget the project can devote to prizes is Euro 300.000. For grants awarded under this sub-topic beneficiaries may provide support to third parties as described in part K of the General Annexes of the Work Programme. The support to third parties can only be provided in the form of prizes. The respective options of Article 15.2 and Article 15.3 of the Model Grant Agreement will be applied.

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

v) 'Technology Harvest & Transfer': will support 'R&I Actions' and their third parties in ensuring the best use of the outcomes created by delivering specific exploitation strategies, including follow-up investment opportunities, industry relations, IPR/knowledge transfers, tech-transfer services to digital innovation hubs, mentoring / coaching services and linkage to national IPR exploitation programmes, in a most innovative and effective way. It will also support impact assessment at the level of the 'Next Generation Internet – An Open Internet Initiative' topic.

The 'Technology Harvest & Transfer' action shall start no earlier than 6 months after the start of the first 'R&I Actions' in 2018. The Commission considers that proposals with a duration Part 5.i - Page 53 of 138

of three years and requesting a contribution from the EU of EUR 2 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other durations or amounts.

vi) 'Outreach Office': will execute the programme communication strategy, branding and marketing activities, including extensive online and social media presence and events, establishing a positive brand image among young researchers, innovators, policy makers and people at large. Centralised, more efficient and professional, it will lead communications towards the outside world but also coach all actions under this topic in effective communications and marketing.

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

Expected Impact:

Proposals should provide appropriate metrics for the claimed impacts.

- Shape a more human-centric evolution of the Internet.
- Create a European ecosystem of top researchers, hi-tech startups and SMEs with the capacity to set the course of Internet evolution.

- Generate new business opportunities and new Internet companies with maximum growth and impact chances.
- For sub-topics i, ii and iii: Integrating research and innovation communities; development of common visions and enhanced science – industry collaborations in each of the technology domains.
- For sub-topic iv: European research and innovation leaders driving the debate for a human-centric Internet research and policy strategy.
- For sub-topic v: New Internet applications / services, business models and innovation processes strengthening the position of European ICT industry in the Internet market.
- For sub-topic vi: global visibility in the media of the debate on a human-centric Internet; citizens' priorities influencing the evolution of the Internet.

Type of Action: Research and Innovation action, Coordination and support action

Budget 2018: 21.50 million EUR (RIA), 7.00 million EUR (CSA)

Budget 2019: 21.50 million EUR (RIA)

Opening: 31 October 2017, 26 July 2018

Deadline: 17 April 2018, 14 November 2018

ICT-33-2019: Startup Europe for Growth and Innovation Radar

Specific Challenge: The challenge is to scale up innovative businesses across the EU, detect high potential innovations and support innovators in going to market. Actions under this heading reinforce the Startup Europe and Innovation Radar initiatives and link to the activities of the European Innovation Council in a complementary way by targeting exclusively ICT innovators that are not supported by the EIC.

Scope: Actions should help startups and scaleups achieve market success and mature the innovation excellence of high potential innovators. Actions should support the creation of new jobs and high growth businesses and support their growth on a pan-European and international level. Innovators identified, promoted and supported by the Innovation Radar are expected to enrich and benefit from the Startup Europe ecosystem. Projects should demonstrate sustainability of proposed actions beyond the life of the project. Where appropriate, the projects should seek synergies with ESIF funds or ESIF supported actions in order to improve the synergies between H2020 and ESIF.

A. Innovation actions

Connecting local tech startup ecosystems and supporting cross-border activities: among the 4-5 startups ecosystems connected by each project, at least half of them will be located in less developed ecosystems. The project should develop a single online entry point to each one of the ecosystems and connect them to the Startup Europe one-stop-shop. Cross-border activities will include: connecting tech entrepreneurs with e.g. potential investors, business partners, accessing skills and services helping startups soft land in new international markets. Particular focus will be placed on stimulating partnerships between scaleups and corporates with a view to procurement, mergers or acquisitions. Similar attention will be placed to support SMEs, startups and scaleups, wherever situated in Europe, to access public procurement opportunities across borders.

B. Coordination and support actions

- Provide targeted and tailored support to SMEs, startups, scaleups, spinoffs and market-oriented researchers planning to launch a spin-off, who are supported by EU funded ICT projects and are delivering market-creating innovations that have scale-up potential.

- Insight and intelligence from the Innovation Radar is to be used to detect EU-funded innovators who face the biggest market opportunities (enhancement of Innovation Radar data by merging with relevant third party data sources is welcomed).

- Support is expected to include mentoring, coaching, investor readiness training, coaching on how to bid for public procurement sales opportunities, connecting innovators with potential customers, business partners and investors (Business Angels, Venture Capital, Crowdfunding and other relevant forms of financing).

Expected Impact: Proposals should address the following and provide appropriate metrics for measuring success with respect to a defined baseline:

A. Innovation actions

- Increased connectedness among members of tech startup ecosystems and their companies (startups and scaleups) and to the larger European business ecosystem seeking maximum synergies;

- Increased access to customers, private and public, better access to qualified employees, access to the right combination of finance and prospects for scaling up across border;

- Stimulate European investments in digital sectors through increasing the number of cross-border investments; Demonstrate sustainability of proposed actions beyond the life of the project.

B. Coordination and Support actions

- Increase the number of digital technology based spin-offs, startups and scale-ups or successfully transferred technology from EU funded projects;

- Enable innovative ICT based companies or technology to reach investment maturity and market introduction readiness, and/or winning for the first time public procurement contracts across the EU.

Type of Action: Innovation action, Coordination and support action

Budget: 10.00 million EUR (IA), 1.50 million EUR (CSA)

Opening: 16 October 2018

Deadline: 28 March 2019

Leadership in Enabling and Industrial Technologies: Framework Partnership Agreement in European low-power microprocessor technologies (Phase 1)

Within the Framework Partnership Agreement in European low-power microprocessor technologies awarded in 2017, the selected consortium will be invited to submit a Research and Innovation Action proposal for the design and development of European low-power processors and related technologies for extreme-scale, high-performance big-data and emerging applications, in the automotive sector for example, in accordance

with the research roadmap defined in the FPA. The designs should follow a modular approach that would allow a rapid scale-up or scale-down.

The grant will be subject to Article 30.3 of the grant agreement (Commission right to object to transfers or licensing).

In particular, the proposal is expected to cover both of the following topics

a) Low-power Processing System Units demonstrating the synergies between high performance computing at the exascale level and scalability to distributed collaborating systems in emerging computing applications, in the automotive sector for example, providing industry in Europe with a competitive edge in processor technology to be further exploited across a wide range of applications from engineering, science and bio-medical to automotive, manufacturing, finance and emerging big-data and smart objects fields.

Generate the functional and non-functional requirements for low-power Processing System Units (using representative HPC and big-data benchmarks, emerging applications specifications, in the automotive sector for example, and targeting maximum energy-efficiency and reliability); design the architecture of the Processing System Units; verify, tape-out, validate, test and bring up the Processing System Units; develop the required firmware and system software leveraging, as much as possible, on open source efforts and solutions. Sustainability and economic viability of the developed solutions are key aspects.

b) Low-power Processing Units for application acceleration

Generate the functional and non-functional requirements for low-power Processing Units (using relevant representative benchmarks/applications) and design the architecture of the Processing Units to accelerate specific applications such as connected and autonomous driving, cognitive computing, deep learning or other emerging applications. The applications must have high-volume potential. Processing Units may be realised as standalone components, distributed collaborating systems or IP-blocks. Where relevant, open-source hardware approaches may be employed. Work in this topic is required to interface with topic a) in order to achieve maximum interoperability (including IP-block interfacing) and roadmap synchronisation.

Wherever appropriate, the proposal, and in particular in addressing topic a), could seek synergies and co-financing from relevant national / regional research and innovation programmes, including structural funds addressing smart specialisation. Work combining different sources of financing should include a concrete financial plan detailing the use of these funding sources for the different parts of the activities.

The standard evaluation criteria, thresholds, weighting for award criteria and the maximum rate of co-financing for this type of action are provided in parts D and H of the General Annexes.

Expected impact:

- Demonstrating the synergies of the design for high performance computing at the exascale level and computing demanding emerging applications, in the automotive sector for example.
- Strengthening the competitiveness and leadership of European industry & science, in particular of the European technology supply in low-power microprocessor technologies for HPC, Big-Data and emerging applications based on on-site distributed collaborating systems such as connected and autonomous driving, cognitive computing, deep learning, etc.
- Availability of European processing units with drastically better performance/power ratios compared to current offerings for HPC, Big-Data and other emerging applications, such as connected and autonomous driving, cognitive computing, deep learning, etc.
- Covering important segments of the broader and/or emerging high-end computing markets.

Type of Action: Specific Grant Agreement

Indicative timetable: Q1 2018

Indicative budget: EUR 80.00 million from the 2018 budget

3.3. Säule III: Gesellschaftliche Herausforderungen

3.3.1. GESUNDHEIT, DEMOGRAFISCHER WANDEL UND WOHLERGEHEN

SC1-HCC-05-2018: Support to a Digital Health and Care Innovation initiative in the context of Digital Single Market strategy

Specific Challenge: The Communication on the mid-term review of the implementation of the Digital Single Market Strategy (COM(2017)228) identified three priorities on digital transformation of health and care (DTHC): citizens' access to their data; data infrastructure; interaction between citizens and healthcare providers for better health management. That document indicated that specific measures would be elaborated in a dedicated Communication to be adopted in the months to follow.

Progressing significantly at EU scale on the referred priorities requires aligning the efforts of many relevant players across Europe, namely their efforts on research and innovation, in line with activities supported by H2020, as well as efforts on deployment, political coordination, stakeholder awareness and mobilisation, etc. Such coordinated European action on is already supported through various frameworks including the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA), the eHealth network of Member State representatives, the eHealth stakeholders group, the health and care activities under the Digitising European Industry platform and other. It is also the focus of actions under European programs including H2020 (notably its societal challenge 1), the Active and Assisted Living Joint Programme, the IMI and ECSEL Joint Undertakings and the Knowledge and Innovation Community on Health from the European Institute of Technology.

Scope: The action should address the activities indicated below, in close coordination with European Commission services, while considering the coordination activities and programs mentioned above, relevant projects and actions supported by the EU, and other relevant initiatives.

1) Delivery on the third DTHC priority of the DSM (focusing on user-centred integrated care), which should represent approximately 75% of the total effort of the action. This will concentrate on supporting and extrapolating the lessons from practical experiences across Europe that are particularly impactful, successful and replicable. The focus will be on large scale deployment of digital solutions for chronic diseases and integrated care (that absorb the majority of healthcare budgets and where there is a big scope for improvement) and patient-centred care, considering a limited set of implementation scenarios which seem particularly impactful. The experiences to be considered may cover public and non-public initiatives, including from the reference sites and other participants of the EIP on AHA, as well as relevant European projects (finished or not) on integrated care. Three tasks will be undertaken:

1.1. Support the identified initiatives and projects, assessing their impact, analysing their strengths and weaknesses, and providing advice for further deployment, including on available funding from public (EU or other) and private sources as well as other types of assistance. In all cases, and notably for EU funding and assistance, the aim should be to maximise their leverage effect and demonstrable impact.

1.2. Replicate the lessons from the selected initiatives and projects, through a common framework for assessing impact (with particular consideration to the MAFEIP153), twinning activities, and collaboration actions between relevant initiatives and stakeholders. The later may include a variety of instruments

including pre-commercial and innovation procurement. Success and failure factors will be analysed and compared in view to assess their potential replicability. This work should build on the H2020 support action funded under SC1-HCO-17-2017154, and any other relevant efforts to link initiatives in the scope of the third DTHC priority of the DSM.

1.3. Scale up the deployment across Europe of DTHC solutions, analysing, elaborating on and promoting enabling factors and "building blocks", which may lead to European reference frameworks. These may relate e.g. to mHealth, smart homes, smart hospitals, legislation and practices on data management, recognition of professions and professional acts, reimbursement schemes, health technology assessment, incentive and penalty schemes, performance and outcome-based approaches, subsidy schemes, interoperability and standards, skills and literacy measures, etc. This work will build up on the scale-up strategy of the EIP on AHA and any other efforts to scale at European level initiatives in the scope of the third DTHC priority of the DSM.

2) Collaboration platforms on key aspects of the three DTHC priorities of the DSM, which should represent approximately 20% of the total effort of the action. This requires to identify relevant stakeholders and initiatives across Europe and engage them to collaborate, jointly analyse key challenges and solutions, elaborate common strategic agendas and commitments for action in three areas:

2.1. Citizens' access and management of data relevant to their health and wellbeing (first DTHC priority). This will address public and private initiatives allowing active citizen involvement with regard to data relevant to their health (access, manage, sharing, donating, etc). It will be important to reach out to relevant stakeholders, e.g. health authorities, patient and healthcare provider associations, data protection authorities, data platforms, etc. Account should be taken of schemes to share data, including across borders, such as the health Digital Service Infrastructure under the Connecting Europe Facility (CEF155), and other relevant ongoing projects and actions funded by the EU (e.g. topic SC1-DTH-08-2018).

2.2. Aggregated demand for infrastructure capacity to handle health data (capture, transfer, process, store, etc) by researchers, developers of products and services and other players involved in the secondary use of data (second DTHC priority). The focus will be on the interaction between the referred demand and the supply for generic data infrastructure capacity, considering in particular the initiatives on EuroHPC (high performance computing), European Open Science Cloud (EOSC) as well as future related activities supported by the H2020 and the (CEF) programs. Special attention should be paid to security, privacy and identification aspects. Account should be also taken of the most relevant ongoing projects and actions funded by the EU (under H2020, CEF, structural funds, etc) focusing on health data.

2.3. Interaction between citizens and healthcare providers (third DTHC priority), including feedback from patients and on health outcomes, exploitation of real world data, and other aspects meant to improve quality of care and health management in general. This will refer to various initiatives already existing in this area.

3) Vision of EU coordination and support on DTHC beyond 2020, which should represent approximately 5% of the total effort of the action. Considering inputs gathered through the implementation of the two other work packages and additional feedback from relevant stakeholders, advise on future EU support on DTHC goals, including possible financial support under the next Multi-annual Financial Framework (e.g. support for research and innovation, cohesion, strategic investment), as well as legislative, policy, or other types of intervention.

The proposal should include partners with demonstrated experience of delivering on the areas mentioned above, who are widely acknowledged for their expertise and results, while providing a broad representation of constituencies relevant to DTHC, as well as of regions across Europe. Beyond the profile and credentials of their partners, the proposal should demonstrate capacity to reach out to and effectively engage relevant stakeholders across Europe, influence their policies and practices as well as stimulate cooperation amongst them.

Moreover, the proposal should be able to credibly deliver on the expected impacts identified below. This will require relevant expertise on a variety of domains and an appropriate level of resources convincingly allocated to the action.

The Commission considers that proposals requesting a contribution from the EU up to 4 M€ over two years 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 provide appropriate indicators to measure its progress and specific impact in the following areas:

- Effective support to and engagement of stakeholders active on the third DTHC priority of the DSM, resulting in tangible impact from the beginning of the action and sustainably throughout its duration.
- Functional collaboration platforms on key aspects of the three DTHC priorities of the DSM and instrumental contribution to the implementation of EU policy on DTHC in the context of the DSM.
- Actionable strategic vision for EU policy on DTHC beyond 2020, including appropriate mobilisation of EU instruments.

Type of Action: Coordination and support action

Budget: 4.00 million EUR

Opening: 07 November 2017

Deadline: 24 April 2018

SC1-HCO-06-2018: Establishment of an International Network of Social Sciences Research Centres to help address governance and other challenges in the preparedness for and the response to infectious threats

Specific Challenge: Infectious diseases, in particular epidemics and antimicrobial resistance, pose significant threats to the social, economic and health security of communities and countries around the world. However, these diseases also transcend borders and require multi-sectoral and multi-jurisdictional co-operation and preparedness to ensure the world is safe from global threats.

Many global infectious disease outbreaks are enabled, accelerated and allowed to spread by shortcomings in governance at all levels (national, regional as well as global). This governance challenge has been recognised and many initiatives are beginning to work in this space. However, communities would be better prepared to respond to infectious threats (public health emergencies or antimicrobial resistance) if such efforts and structures that govern the overall prevention and response were informed by research evidence from the range of social sciences and humanities disciplines.

The Global Research Collaboration for Infectious Disease Preparedness (GloPID-R- https://www.glopid-r.org/) and the Joint Programming Initiative on Antimicrobial Resistance (JPI-AMR- http://www.jpiamr.eu/) have identified the need to establish an international Network of Social Sciences Research Expertise, to better address governance and other challenges in prevention and response to infectious threats, be it at local, national, regional or global levels.

Scope: The scope of this Coordination and Support Action (CSA) is to:

I. Initiate, in an organised and coordinated manner, the International Network of Social Sciences Research Expertise, addressing governance challenges, engage with stakeholders on behalf of network members, and

work with research funding agencies to grow the network to an effective, internationally representative scale. The proposed network would have the following main objectives:

1. Strengthen research capacity and catalyse social sciences researchers to generate and apply new knowledge about effective governance arrangements for infectious disease preparedness, combating antimicrobial resistance, and prevention and response efforts. This would include addressing the ethical, legal and social aspects (ELSA) as well as among others the issue of accessibility;

2. Foster cross-region and global research collaborations to better connect researchers currently working in isolation and to support bigger, more robust social science research on the governance aspects of infectious threat prevention and response;

3. Facilitate ongoing engagement between researchers and global policymakers to inform national and global decision-making on appropriate governance arrangements for effective prevention and response measures;

4. Inform and enable better preparedness and response efforts through the application of knowledge, sharing of lessons learned, and creation of improved governance arrangements. But also be a source of advice in case of a public health emergency, to inform priority setting and response from a social science perspective. In this respect flexibility will be expected from the consortium.

Activities supported by this CSA should include among others the following:

1. Identifying best practices and lessons for enabling, coordinating, and supporting prevention and response efforts by international institutions and regional agencies across borders, while also taking into account research-constrained settings and systems;

2. Identifying strategies to strengthen the discovery, development, and take-up of existing and new innovative interventions and other measures across multiple sectors including examining their impact on health systems. This would include identifying the barriers and motivations that influence the wider use and uptake of these innovations such as vaccines;

3. Developing proposals for more effective raising of public awareness about infectious threats in general and AMR in particular, and inducing behaviour change;

4. Conducting socio-economic and cultural analyses to better understand the societal cost/benefit of different strategies to prepare for and prevent AMR and epidemics.

II. Establish the central coordinating hub for the network under development, focusing on maximising opportunities for collaboration, learning and data sharing in order to scale-up evidence.

The consortium is expected to collaborate with GloPID-R members and JPI AMR and their various initiatives in this domain, as well as other relevant initiatives already existing or under development at national, regional, and international level, in order to maximise synergy and complementarity. Specific propositions on how this can be achieved should be included in the proposal. It is expected that, at a minimum, the network hub will host an annual meeting for the network, and additional thematic workshops as appropriate.

The Commission considers that a proposal requesting an EU contribution between EUR 2 to 3 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amount.

Expected Impact:

- Effective cross-region and global research collaborations that better connect multidisciplinary researchers currently working in isolation.
- Strengthened capacity to address the socio-economic and governance dimensions of an effective research preparedness and response to infectious threats.
- Robust evidence to guide policy makers on global infectious disease governance.
- Built in-country capacity in low and middle income countries to better support global efforts.
- Contribution to the implementation of the 'European One-health action plan against AMR and the WHO Global Action Plan on AMR'.
- Contribution to the achievement of SDG 3, and in particular the targets 3 on combatting communicable diseases, B on supporting the research and development of vaccines and medicines for diseases that primarily affect developing countries, and D on strengthening capacity on early warning and management of global health risks.

Type of Action: Coordination and support action

Budget: 3.00 million EUR

Opening: 07 November 2017

Deadline: 18 April 2018

3.3.2. Ernährungs- und Lebensmittelsicherheit, nachhaltige Land- und Forstwirtschaft, marine, maritime und limnologische Forschung und Biowirtschaft

SFS-31-2019: ERANETs in agri-food

Specific Challenge: The agri-food sector is subject to multiple external pressures, such as rising demand for food, competition for land and other natural resources with other biomass uses, globalisation, threats from animal or plant diseases, environmental changes and public health considerations. This implies the need to become more efficient and sustainable; improve its impact on consumer health; take advantage of new technological developments; and become more transparent and responsive to consumer demands, within a food-system approach.

Scope: Proposals should address one or more of the following sub-topics (A) to (C) and should clearly indicate to which one they refer.

A. [2019] ICT-enabled agri-food systems

Today, despite increased information demand from consumers and food chain players alike, Europe's food businesses and farmers are slow at adopting digital technologies. This is due in part to the inherent complexities of relevant products and processes, and in part to the dynamically changing open network organisation of the food sector with its multitude of SMEs, its cultural diversity, its differences in expectations and in the ability to serve transparency needs. The agri-food sector needs to take more advantage of the potential of digital technologies. Relevant technologies may include Internet of Things, Artificial Intelligence, Big Data technologies, remote and localised sensing. This sub-topic will engage the

agri-food community in supporting the development of solutions to remove the barriers to adoption of digital technologies, taking a multi-actor approach across different supply chains (conventional and organic) from farm to fork. These solutions will be targeted to supporting third party development of a variety of digital technologies which can take advantage of, integrate with, and complement the standardisation efforts and platform developments in other Horizon 2020, European Structural and Investment Funds (ESIF) and regionally/nationally-funded projects. In addition, this sub-topic will support the development of new data-driven ICT platforms and solutions which derive value for multiple actors from the data collected throughout the food chain, thereby enabling new business models which will increase the affordability and adoption of such solutions, reduce the environmental footprint, increase system resilience, and empower consumers. Interregional and international cooperation will be encouraged and complementarity with other ERA-NETs will be ensured throughout the project development stages by means of active collaboration and communication. When relevant, projects should consider synergies with the Thematic Smart Specialisation Platform on Agri-food (TSSP-AF) and related interregional partnerships under the Research and Innovation Strategies for Smart Specialisation (RIS3).

Expected Impact:

- Improve coordination between national and EU funding and ensure better use of resources in the priority research areas above [A, B, C];
- Reduce the environmental footprint of the sector by reducing inputs and waste [A, B].
- Realise the potential of ICT and digital technologies to share data throughout the food value chain, thereby driving greater sustainability, offering new business models and helping to empower consumers to make smarter, more sustainable, healthier and more personal food and dietary choices, taking into account data regarding environmental impact, origin, nutrition, safety, integrity, etc., underpinned by the concept of transparency [A];
- Integrate effectively with major digital platforms from food actors, ICT solution providers and consumers [A];
- Develop innovative solutions to cope with the multiple risks and challenges to the food systems posed by global environmental changes [B];
- Provide new generic tools and systems to design and develop new or improved vaccines, including better preparedness to react to emerging diseases [C];
- Improve control of specific infectious diseases, including highly pathogenic avian influenza viruses, by translating key knowledge on host and pathogen interaction into pathways for new/improved vaccines [C];
- Improve collaboration with international initiatives to promote coherence and the applicability of research to preventive tools in order to control animal diseases [C].

Type of Action: ERA-NET Cofund

Budget: 21.00 million EUR (strands A/B/C)

Opening: 16 October 2018

Deadline: 23 January 2019

BG-01-2018: Towards a Baltic and North Sea research and innovation programme

Specific Challenge: The northern seas of Europe - the Baltic Sea and the North Sea - are at the forefront of the global surge to enhance and realise marine and maritime potential. This enormous economy is directly and critically dependent on the quality and extent of the ecosystem services provided by the two regional seas and their coasts. In order to foster understanding of these coastal seas and the sustainable use of their goods and services (within the context of the EU Blue Growth Strategy, related policies and environmental legislation) challenges need to be addressed such as: fragmentation among nations and sectors, gaps in interdisciplinary knowledge, inadequate information on potential synergies and trade-offs between different sectors and the environment (including climate change issues), insufficient exchange of knowledge among scientists, industries and policy makers, and a need to increase attention to the societal inclusiveness and human well-being. To address these challenges, it is recognised that a significant and well-coordinated research effort between these two regional seas is necessary. BONUS, the Joint Baltic Sea Research and Development Programme, implemented under Article 185 of the TFEU, has already progressed towards consolidating such efforts among the Baltic Sea Member States. There is now an expressed interest and willingness to prepare conditions for launching a broader European North Sea and Baltic Sea Research and Innovation Programme.

Scope: Activities shall focus on creating the necessary conditions for coordinated research and innovation efforts in the North Sea and Baltic Sea region in cooperation with BONUS by bringing together the main national funding agencies (programme owners and/or managers). They shall map and engage with relevant stakeholders in the region and especially further strengthen a possible new/successor programme with a sound North Sea component. Taking into account of existing commitments in relevant fora the activity shall focus on the preparation and delivery of a Joint Baltic-North Sea Strategic Research and Innovation Agenda, the creation of conditions (governance, management, financial, legal aspects and administration) and the development of an effective mechanism for its implementation, showing a strong commitment to achieve a sound level of integration (scientific, management and financial). Furthermore, they shall ensure visibility and broad involvement of the scientific community, public authorities, decision makers, and other stakeholders (including industry) in the region. The action shall facilitate consultation, awareness and commitment by all parties involved. The action shall also prepare and launch a long-term partnership ensuring appropriate funding from all the relevant participating states and a high leveraging effect. Finally, the action shall demonstrate the rationale of the initiative, EU added value, clearly identifying the problems that it proposes to tackle, likely impacts (scientific and technological, economic, social, environmental including climate-change, administrative, impacts on SMEs and on competitiveness and innovation) and main drivers. Synergies and harmonisation should be sought with other relevant ongoing national, regional, EU and international initiatives and institutions such as the Joint Programming Initiative 'Healthy and Productive Seas and Oceans', the International Council for the Exploration of the Seas (ICES), the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention), the Baltic Marine Environment Protection Commission (HELCOM), etc. In agreement with the Commission services, projects should ensure appropriate flexibility so as to respond in real time to potentially fast-changing policy scenarios.

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

Expected Impact: In order to contribute to the implementation of the EU Integrated Maritime Policy, the EU Blue Growth Strategy, the EU Marine Strategy Framework Directive, the EU Maritime Spatial Planning Directive, the EU International Ocean Governance Communication, the EU Communication for a Sustainable European Future and other EU initiatives such as the Blue Growth Agenda for the Baltic Sea Region, Blue Growth and North Sea related activities, the EU Strategy for the Baltic Sea Region (EUSBSR) and the UN SDGs, activities shall contribute to the following:

In the short term:

- Overcome fragmentation in research and innovation by developing a joint Baltic-North Sea Marine and Maritime Strategic Research and Innovation Agenda by the Baltic Sea and the North Sea countries.
- Create lasting marine and maritime stakeholder platforms and integration mechanisms in the area, and establishing appropriate stakeholder collaboration mechanisms between the North Sea and Baltic Sea regions.

In the medium term:

- Create a framework and deliver the necessary mechanisms, based on experience gained by the current BONUS and other equivalent initiatives, for developing a European Baltic-North Sea Research and Innovation Programme.
- Contribute to improve the professional skills and competences of those working and being trained to work within the blue economy.
- Contribute to policymaking in research, innovation and technology.

Type of Action: Coordination and support action

Budget: 2.50 million EUR

Opening: 31 October 2017

Deadline: 13 February 2018

BG-02-2018: Blue Bioeconomy Public-Public Partnership

Specific Challenge: Aquatic biomass from the seas and oceans, rivers and lakes has a large potential to ensure future food and nutrition security and to supply raw materials for other high added value chains and products, such as bioenergy, pharmaceuticals and cosmetics while factoring in environment and climate change risks. These so-called provisioning ecosystem services could ensure private and public benefits, while demonstrating synergies or trade-offs with a broader range of ecosystem services. However, this potential is currently underutilised due to a lack of synergies between sectors and of adequate investments. Consequently, EU intervention is needed to create the conditions to mobilise investments by aligning national and regional innovation research agendas across different blue bioeconomy sectors.

Scope: Activities shall pool the necessary financial resources from the participating national and/or regional research programmes with a view to implementing a joint call for proposals with EU co-funding resulting in grants to third parties. Proposers are requested to implement other joint activities, including additional joint calls without EU co-funding. Activities shall address innovative, sustainable and climate-friendly possibilities to produce, harvest and exploit aquatic biomass from different trophic levels for use in food and other value chains. The technical and economic feasibility of these possibilities should be clearly demonstrated by including in the projects industry partners that contribute a concrete and feasible business perspective. The ERA-NET Cofund shall address research and innovation gaps such as achieving zero waste by optimising the use of underutilised and waste material from fisheries and aquaculture and apply biotechnology and ICT in the blue bioeconomy to develop smart, efficient, traceable food systems and other biomaterials and create synergies between aquaculture and fisheries (e.g. through genetic assessment); to unlock the potential of microbiomes in aquaculture, fisheries, food processing and biotechnology; to create predictive tools to

improve the identification, targeting and conservation of biodiversity "hot-spots" in the oceans (e.g. through omics-based technologies); explore synergies with land-based production in areas such as food and feed processing, biorefining, bioenergy, biomaterials, chemicals and nutrients, and include waste streams from aquatic to terrestrial value chains; to improve aquaculture and fisheries by using a combination of methods, processes and technologies such as biotechnology to create innovative feeds, improve brood stock, introduce new species, improve biosecurity, define stock baselines, and assess stocks. Activities shall also build on developments derived from relevant Framework Programme projects. Activities shall also aim to implement other joint activities without EU co-funding, on issues related to fisheries, aquaculture, seafood processing and aquatic biotechnology in line with the Strategic Research and Innovation Agenda of the Joint Programming Initiative "Healthy and Productive Seas and Oceans", the COFASP Strategic Research Agenda, and the Marine Biotech Strategic Research and Innovation Roadmap. Inclusion of societal actors and stakeholders at large during the whole research and innovation process shall allow to better align both the process and its outcomes with the values, needs and expectations of society while facilitating the creation of new value chains in the market. The interdisciplinary and cross-sectorial nature of the project should also apply to training activities improving the professional skills and competencies and supporting the creation of new jobs in the blue economy. Proposers have to demonstrate that the topic for the cofunded call excludes duplication with calls launched or planned under Horizon 2020.

Participation of legal entities from international partner countries will be encouraged in the joint call as well as in other joint activities including additional joint calls without EU co-funding. Participants from countries which are not automatically eligible for funding may request a EU contribution (on the basis of the ERA-NET unit cost) for the coordination costs of additional activities.

The Commission considers that proposals requesting a contribution from the EU in the range of EUR 8 million would allow this specific challenge to be adequately addressed. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Expected Impact: Contributing to ongoing implementation at EU and national level of EU policies such as the Bioeconomy Strategy, the Circular Economy Strategy, the Blue Growth Strategy, the Common Fisheries Policy, the Marine Strategy Framework Directive, the Maritime Spatial Planning Directive, the BLUEMED Initiative and notably common priorities with the WestMED Initiative and the EUSAIR, as well as the priorities defined in the European Commission Staff Working Document FOOD 2030 and international initiatives such as the Atlantic Ocean Research Alliance, this ERA-NET Cofund shall:

In the short term:

- Create, test, upscale and bring to the market new knowledge-intensive products and services derived from aquatic biomass, fostering job creation and economic growth in Europe.
- Provide consumers with the knowledge needed to make informed decisions about safe, healthy and sustainable food and policy makers with robust scientific advice.

In the medium term:

- Increase the efficient and sustainable use of by-products generated from blue bioeconomy sectors.
- Contribute to the UN SDG 2 target to ensure sustainable food production systems and the UN SDG 14 target to effectively regulate harvesting and end overfishing.
- Contribute to improve the professional skills and competences of those working and being trained to work within the blue economy.
- Contribute to policymaking in research, innovation and technology.

Type of Action: ERA-NET Cofund

Budget: 8.00 million Euro

Opening: 31 October 2017

Deadline: 13 February 2018

RUR-09-2018: Realising the potential of regional and local bio-based economies

Specific Challenge: Bioeconomy is a major opportunity for regional and local communities. Despite broad political agreement, the potential of many European regions to develop a thriving circular bio-based economy using their own resources remains largely untapped.

Many factors contribute to this situation, including lack of awareness and practical knowledge among regional/local authorities and stakeholders, low degree of cooperation and networking at all levels, insufficient involvement of local/regional stakeholders in drawing up bioeconomy strategies, or inadequate technology transfer and exploitation of innovation.

New, sustainable technology options or business models suitable for local deployment are needed, as current integrated biorefinery models are predominantly based on complex technologies and are difficult to finance, so remain inaccessible to many players.

Scope: Proposals shall foster cooperation and networking between relevant actors at all levels, so that regional bio-based economies can take off, promote open innovation approaches, and ensure adequate knowledge exchange within and among regions. Emphasis shall be put on increasing the capacities of regional/local authorities and stakeholders, especially in regions with high potential (e.g. underused biomass streams, human capacities), but that have a low number of established biorefineries. Proposals shall ensure proper support and guidance in developing regional strategies and roadmaps through participative approaches, adapted to the local conditions and biomass sources. These shall also include avenues to address the education and information gap on key issues related to sustainability, to increase R&I capacities and to improve the generation of innovation, making best use of the various funding streams available and establishing synergies with relevant policies and programmes, notably those related to rural and regional development, and related Smart Specialisation Strategy implementing bodies.

Proposals shall address the different bio-based business models available for stakeholders and policy-makers, with a specific attention paid to models that could be deployed at a smaller scale in rural areas. Their economic (growth and jobs), social and environmental potential, as well as their advantages and disadvantages compared to larger and more complex models, shall be established.

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

Expected Impact: In the framework of the EU Bioeconomy Strategy, the impact of the proposals will be assessed on the basis of:

- Increased capacity of regional/local policy makers and stakeholders to structure their bioeconomy and to support the emergence of a thriving bio-based sector. Adequate knowledge and best practice exchange and networking within and among regions, across the EU;

- Improved capacity of policy makers and stakeholders to make informed decisions, based on a thorough knowledge of the different business models, their respective advantages and disadvantages, and the best approaches to promote them;

- Ambitious regional strategies and roadmaps leading to regional bio-based sectors that are sustainable, inclusive and adapted to local assets and conditions;
- Enhanced research and innovation capacities, and appropriate transfer of research results to regional/local stakeholders.

Type of Action: Coordination and support action

Budget: 3.00 million EUR

Opening: 31 October 2017

Deadline: 13 February 2018

CE-RUR-10-2019: Circular bio-based business models for rural communities

Specific Challenge: To boost the development of a bio-based economy in Europe, there is a need for business models that can be replicated easily in a variety of locations and contexts, with relatively low levels of investment, risk and technical sophistication. A wider range of rural entrepreneurs needs to get involved in the emerging bio-based business sector, including farmers, forest owners, their associations, and small rural business. This will help to diversify and revitalise the economy and create quality jobs in rural areas. Local and regional authorities need to do more to support the bio-economy in their respective territories. They should therefore have a range of options to choose from and be able to select the approach that best suits local needs and assets. As a key part of a circular economy, the bioeconomy needs to close loops to make the most efficient possible use of biomass under market and logistical constraints, and to ensure the sustainability of business models.

Scope: Based on an established agro-food system, proposals shall consider a variety of additional bio-based processes and end products that could be integrated into the system, and that are viable on a small scale (farm to rural community level). The TRL of the technologies considered can vary at the start. The project shall test and demonstrate the combination of these in a circular configuration. The integrated system shall achieve a TRL 6-7.

Proposals can target any combination of non-food bio-based outputs, but projects focussing mainly on bio-fuels or bio-energy are not eligible. The choice of feedstock sources shall avoid negative effects on food security. Proposals shall focus on a single agro-food system that should be common in Europe and offer high replication potential, and can be combined with sustainable management of natural areas and/or use of marginal lands. A complete assessment (economic, environmental and social) of the integrated system shall be carried out. The project shall include a business plan, and a set of policy options and recommendations.

Proposals shall fall under the concept of the 'multi-actor approach' ensuring solid collaboration between relevant actors such as farmers or farmers associations, agro-food industry (including small businesses), technology providers, research centres or public authorities. Proposals should include a task to cluster with other projects financed under this topic, under topic SFS-35-2020 and – if possible – with other relevant projects in the field that are funded by Horizon 2020 (including under the BBI JU).

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 submission and selection of proposals requesting other amounts.

Expected Impact: Proposed activities will expand the range of business models available to entrepreneurs and local authorities by developing circular and sustainable business models with large potential for replication in areas with unexploited resources, at a relatively low cost, risk and with low levels of technical complexity. This will help to:

- expand and diversify the sector by mobilising a wider range of players in the bio-based economy, including small businesses, farmers, forest owners and their associations;
- develop regional and local bio-based models adapted to the wide variety of contexts found in the EU, including rural and remote areas and outermost regions;
- ensure adequate recovery of nutrients and organic matter, and their reuse in agriculture.

In the longer term results consolidate a diversified, circular and climate-friendly bio-based sector that harnesses regional assets, provides quality jobs and opportunities in rural areas and revitalises rural economies.

Type of Action: Innovation action

Budget: 20.00 million EUR

Opening: 16 October 2018

Deadline: 23 January 2019

DT-RUR-12-2018: ICT Innovation for agriculture – Digital Innovation Hubs for Agriculture

Specific Challenge: European agriculture could gain a decisive competitive advantage if the ICT sector and the farming community could work together to generate a wave of bottom-up ICT innovations across Europe designed to create more productive and sustainable agricultural systems. The topic will facilitate the adoption and widespread transfer of ICT-based solutions for agriculture.

The Digitising European Industry Strategy aims to ensure that every business in Europe has access to a Digital Innovation Hub at 'a working distance'. A Digital Innovation Hub (DIH) helps companies become more competitive by improving their business/production processes, products and services through the use of digital technologies. DIHs offer services to test and experiment with advanced technologies and produce innovative products/solutions. They should also act as a broker between user companies and technology suppliers.

Many components of Digital Innovation Hubs already exist at European, national and regional level. Through this topic, the European Commission is adding value to these existing investments by supporting highly innovative experimentation on a pan-European scale.

Scope: The topic calls for promoting Digital Innovation Hubs in agriculture. It should address the adoption of ICT-based solutions for more productive and sustainable agriculture systems. The focus is on innovative technologies that need to be customized, integrated, tested and validated not only by technology developers but also the farming community before they are placed on the market. Special emphasis is on the strengthening of European start-ups and SMEs by adopting new concepts linked to innovative agri-business and/or service models, and connecting them with actors that can provide access to finance, advanced training skills, knowledge and needs of the farming community.

Hence, the following is requested for this topic:

1. Organisations participating in the call should demonstrate that they are deeply rooted in a digital innovation hub that offers digital transformation services to companies in its proximity. They should provide a clear analysis of how the proposed project will add value to the existing service offer, and how it is aligned with the national or regional digitisation initiative. Every project should support a critical mass of dedicated pan-European innovation experiments that bring together technology suppliers and the farming sector. At least 50% of the budget should directly benefit SMEs. The action may involve financial support to third

parties. The proposal will define the process of selecting entities for which financial support will be granted, typically in the order of 40.000 – 100.000 per party;

2. Activities proposed should be sustainable in the long term and must include a business plan for the Digital Innovation Hubs, a plan to attract investors, to address needs of the farming sector and dissemination activities. The use of established networks for SMEs such as the Enterprise Europe network is encouraged;

3. The project should create a network and help achieve a broad coverage in terms of technological aspects, application, innovation and geography. It should also link up with regional/national innovation initiatives and other DIHs. This shall include maintaining a single innovation portal, sharing of best practice, dissemination, brokerage between ICT suppliers and farming users, leveraging investment and training;

4. Selected projects are expected to collaborate on building a network of Digital Innovation Hubs, covering most regions in Europe.

Proposals should fall under the concept of the multi-actor approach.

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

Expected Impact: Proposals must promote the creation of a self-sustaining innovation ecosystem of competence centres, farming users and suppliers supported by services available through a marketplace, covering a large number of regions. Through the creation of a sustainable network of Digital Innovation Hubs, proposals will provide European added value to investments made at national and regional level in DIH. It should have a high leveraging effect on other sources of funding, in particular regional and national funding.

In the short to medium term work will:

- Attract a significant number of new users of ICT in the agricultural sector;
- Attract a significant number of innovative and competitive technology suppliers (start-ups and SMEs) able to supply the farming community with new solutions for improving farming operations;
- Create a critical mass of pan-European experiments that explore new application areas for ICT in agriculture in general;
- Increase deployment of technologies in the agriculture sector.

In the longer term funded activities will create sustainable production systems and increase the competitiveness of the farming sector.

Type of Action: Innovation action

Budget: 20.00 million EUR

Opening: 31 October 2017

Deadline: 13 February 2018

RUR-15-2018-2019-2020: Thematic networks compiling knowledge ready for practice

Specific Challenge: Despite the continued funding of scientific projects, innovative ideas and methods from practice are not captured and spread, while also research findings are often not integrated into agricultural and forestry practice. It is essential to close the research and innovation divide and to act at EU level.

National and sectoral agricultural knowledge and innovation systems (AKISs) are insufficiently connected to fully meet this challenge. More intense cooperation is needed between researchers, advisors and farmers/foresters to stimulate the exchange of knowledge in view of fostering economically viable and sustainable agriculture and forestry.

Scope: The activities of thematic networks focus on summarising, sharing and presenting, - in a language that is easy to understand and is targeted to farmers and foresters - existing best practices and research findings that are near close to being put into practice, but not sufficiently known or used by practitioners. The specific themes of the networks can be chosen in a 'bottom-up' way and must focus on the most urgent needs of farmers and foresters. If appropriate, they can cover important or promising cross-sectoral issues. They should pay attention to the cost/benefit aspects of the new practices. A comprehensive description of the state of the art on the chosen theme should explain the added value of the proposal, the relevance of the theme and how it avoids duplication with ongoing or completed projects and networks. If duly substantiated, proposals may focus on the widening of an existing thematic network. 'Widening' could apply to content and/or geographic coverage (e.g. through twinning or cross-border exchange visits). In order to better reach and capture knowledge from the targeted farmers/foresters, the networks may organise 'cross-fertilisation' through sub-networks covering, for example, a region, a language or a production system.

The result of the project should be an extensive range of appealing end-user material. This information should be easily to access and understand, and feed into the existing dissemination channels most consulted by end-users in countries. It should also be provided to the European Innovation Partnership (EIP) 'Agricultural Productivity and Sustainability'. Proposals should fall under the concept of the 'multi-actor approach', with a consortium based on a balanced mix of actors with complementary knowledge involving farmers/foresters, farmers' groups and advisors. Wherever possible and relevant to the chosen theme, synergies and complementarity with EIP Operational Groups and interactive innovation groups operating in the context of the EIP-AGRI are encouraged, and, if useful, with other European Structural and Investment Fund projects. In the exceptional event that minor testing of specific solutions would be needed, a maximum of 20% of the project budget may be used for this purpose.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 2 million per project 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: Activities must contribute to the collection and distribution of easily accessible practice-oriented knowledge on the thematic area chosen, including delivering as many as possible "practice abstracts" in the common EIP-AGRI format and as much audio-visual material as possible. The aim is to:

- conserve the practical knowledge for the long term - beyond the project period - using the main trusted dissemination channels which farmers/foresters consult most often, and also serve education and training purposes;
- increase the flow of practical information between farmers/foresters in Europe in a geographically balanced way, creating spill-overs and taking account of the differences between territories;
- achieve greater user acceptance of collected solutions and a more intensive dissemination of existing knowledge.

Type of Action: Coordination and support action

Budget: 12.43 million EUR

Opening: 31 October 2017

Deadline: 13 February 2018

RUR-16-2019: Fuelling the potential of advisors for innovation

Specific Challenge: Despite the continued generation of scientific knowledge, its impact and application in practical farming and forestry is disappointing and its innovative impact poor. Although there are some good examples, the EIP-AGRI evaluation study recommends that more advisors need to be involved in interactive innovation projects to fuel cross-fertilisation and implementation of results. Advisors indeed have clear impact on farmers' and foresters' decisions and should play a key role in linking science and practice. Whereas the term 'advice' until recently merely referred to a given recommendation in the context of linear knowledge 'transfer', advisors should now also develop the skills to be able to take on a more interactive role in projects. These new forms of interaction and 'knowledge exchange' among advisors, farmers, private forest owners, scientists and other actors are unfamiliar to most. There is a need to network advisors to promote this approach and to boost advisors' innovation potential in order to ultimately improve knowledge flows in national and regional agricultural knowledge and innovation systems (AKISs).

Scope: Activities shall aim at networking advisors to for learning and exchanging interactive innovation techniques that support the transition to a more productive, sustainable and climate-smart agriculture and a higher level of development in rural areas. Projects shall identify and showcase best practices from a broad series of practical cases of advisory services across the EU, with a view to support advisors on how to capture grass-roots innovative ideas from farmers and foresters and further develop them into innovation projects. The activities shall create peer-to-peer learning for active and future advisors as well as training opportunities, e.g. through exchanges and cross-visits abroad. They shall teach advisors the skills for managing and participating in interactive innovation projects and how to intermediate in farmer-to-farmer learning processes. Projects shall identify best practices from a broad series of practical cases of advisory services across the EU. Proposals must expand and update the inventory of advisors in the EU by the PRO-AKIS project, with a particular focus on including all private and public advisors and ensuring an EU wide coverage. Based on this, projects shall collect best practices for well-organised, well-connected and effective advisory services supporting innovation and facilitating complementary partners to work together in innovative projects. Proposers are encouraged to establish links between their activities and existing activities, services and networks, such as those related to the farm demonstration networks, research organisations etc. and seek synergies with national or regional EIP networks and EIP Operational Groups. Projects should provide input to and coordinate their strategy with the SCAR-AKIS Strategic Working Group. Special attention should be given to the CEE countries where knowledge sharing attitudes and interconnectivity within the AKISs are still limited.

In order to achieve the objectives of the call, projects should have a minimum duration of four years and shall fall under the concept of the multi-actor approach. To network all public and private advisors across the EU, consortia shall include as many key actors – private and public – in the EU with practical advisory experience as possible. They should be engaged in a broad range of technical advisory subjects for a more sustainable and competitive agriculture and forestry.

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: Activities shall contribute to better interconnected advisors with a focus on innovation at national/regional level, able to support EIP-AGRI Operational Groups and Horizon 2020 multi-actor projects, by:

- improving networking and peer-to-peer learning of advisors, stimulating the interactive role of advisors to boost innovation and providing a set of best practices for advisors, thereby building an advisory network covering the EU in a balanced and comprehensive way;

- enhancing the impact of advisors on the strengthening of knowledge flows between scientific research and practical implementation for more productive and sustainable agricultural practices and rural development;

- improving education by developing efficient material and dedicated training systems for advisors that help to preserve practical knowledge in the long-term, and by delivering a substantial number of "practice abstracts" in the common EIP-AGRI format, including audio-visual material.

Type of Action: Coordination and support action

Budget: 5.00 million Euro

Opening: 16 October 2018

Deadline: 23 January 2019

3.3.3. SICHERE, SAUBERE UND EFFIZIENTE ENERGIE

LC-SC3-EE-16-2018-2019-2020: Supporting public authorities to implement the Energy Union

Specific Challenge: The delivery of the Energy Union targets requires the full engagement of the public sector at all governance levels.

Local and regional public authorities have a crucial role in setting ambitious energy efficiency strategies, for instance in the framework of the Covenant of Mayors for Climate & Energy and Smart Cities & Communities or the Clean Energy for All islands initiative. The political commitment at local level should be enhanced and the focus should turn to implementation and effective monitoring of concrete energy efficiency solutions and actions, which can contribute to modernise and decarbonise the European economy. Synergies should be sought, whenever possible, with local and regional air quality plans and air pollution control programmes to reduce costs since these plans rely to a large extent on similar measures and actions.

Support should continue and be reinforced in building capacity of public authorities and empowering them to take up their role of energy transition leaders at regional and local level, by permanently improving their skills as public entrepreneurs and supporters of market transformation towards more efficient energy systems.

At national level, the Energy Efficiency Directive has triggered numerous positive developments in the Member States by setting targets to incentivise and enable investment in energy efficiency programmes across all sectors. However, Member States have yet to fully implement the Directive and additional support in building capacity and know-how is needed.

Scope: A. *Support to local and regional public authorities*

Proposers should aim to focus their proposed action on one of the following points:

- Deliver higher quality and consistency of energy efficiency measures implemented through enhanced coordination of different administrative levels. Actions should lead to politically approved and jointly applied monitoring and verification schemes of energy efficiency measures across local and regional authorities, enhanced and better coordination of the energy efficiency measures implemented and more efficient use of public spending in energy efficiency;

- Support public authorities in the development of transition roadmaps that clearly outline the path to the European long-term 2050 targets and inform the ongoing implementation of SEAPs/SECAPs or

similar plans and the development of future plans/targets for 2030 and beyond. Actions should link closely to the Covenant of Mayors and/or Smart Cities and Communities initiatives;

- Innovative ways to enable public engagement in the energy transition, developing interface capacities within public authorities to engage with civil society;

- Deliver large-scale and action-oriented peer-to-peer learning programmes targeting cities and/or regions, with a strong replication potential European-wide. Proposals should develop transparent, effective and compelling programmes, building on existing initiatives and real needs and ensure embedded conditionalities such as institutionalisation of the skill base and impact monitoring. Programmes should deliver public entrepreneurs able to drive the sustainable energy transition in their respective territories within the Covenant Mayors and beyond.

B- Supporting the delivery of the Energy Efficiency Directive

Support will be provided to actions that are assisting Member States to fulfil their obligations under the Energy Efficiency Directive and help with its efficient implementation taking into account existing effective practices and experiences from across Europe. Actions may address, for example, the harmonisation of energy savings calculations under Article 3, implementing Energy Efficiency Obligation Schemes or alternative measures and setting up effective and consistent monitoring and verification systems under Article 7 or the removal of barriers to higher efficiency of the generation, transmission, distribution systems including demand response under Article 15.

Proposals should link into existing, relevant initiatives such as ManagEnergy and target a specific sector with high energy saving potential such as buildings, transport mobility, heating and cooling, or water infrastructure operation etc., as seen relevant by applicants.

The Commission considers that proposals requesting a contribution from the EU of between EUR 1 and 1.5 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: Proposals are expected to demonstrate, depending on the scope addressed, the impacts listed below, using quantified indicators and targets wherever possible:

- Primary energy savings, renewable energy production and investments in sustainable energy triggered in the territory of participating parties by the project (respectively in GWh/year and in million Euro);

- Number of public officers with improved capacity/skills;

- Number of policies influenced through the action;

- Number of Member States with improved implementation of Art 7. (Energy Efficiency Obligation schemes or alternative measures) / Energy savings achieved through successfully implemented Energy Efficiency Obligation schemes or alternative policy measures;

- Number of Members States with improved and consistent monitoring and verification systems for energy savings across governance levels.

Type of Action: Coordination and support action

Budget: 8.00 million EUR (2018), 10.00 million EUR (2019),

Openings: 25 January 2018, 24 January 2019

Deadlines: 04 September 2018, 03 September 2019

LC-SC3-ES-7-2018: Pan-European Forum for R&I on Smart Grids, Flexibility and Local Energy Networks

Specific Challenge: According to the JRC Smart Grid Projects Outlook 2014, the majority of cooperation takes place between organisations from a limited number of Member States while 15 analysed countries (NO, CH, IE, PL, HU, SK, LT, RO, LV, HR, BG, LU, CY, EE, MT) account for less than 5 % of the R&I funds altogether.

Scope: The action should set-up a European Forum composed of R&I policy makers, R&I actors and experts ('community') in the field of smart grids / storage and local energy systems that is representative of the EU-28 energy system. The goal is to evolve towards a truly integrated pan-European R&I community with a high level of synergies, spread and representativity over a recommended duration of 4 years.

Actions should be proposed to establish and spread the state of the R&I in the field in Europe. A number of regional workshops where exchanges of experience and capacities between members of R&I community that are not used to collaborate will be organised where the key R&I challenges will be identified, discussed and structured. Advantage should be taken of other events and conferences, preferably well-known and occurring on a regular basis, to organise such workshops.

Beyond workshops, a methodology should be put in place that will allow developing the elements stated in the paragraph above on a long term perspective relying on diversified but combined means (virtual meeting, use of social media, setting up discussion groups, establishing collaborative working spaces). These new links, new knowledge and potential future collaboration should materialise through the delivery of reports (e.g. at regional and EU level).

The European Technology and Innovation Platform Smart Networks for Energy Transition (ETIP SNET), ongoing Horizon 2020 projects (e.g. the BRIDGE project) in the field, and existing associations with a true pan-European dimension will have an important role to play. This action should also contribute to widen the representativity of European associations in the field which have weaknesses in their EU coverage.

The consortium should be composed of a limited number of relevant beneficiaries offering the possibility to invite ad-hoc R&I policy makers, actors and experts when needed. The consortium should achieve a well-balanced representation at EU level.

The Commission considers that proposals requesting a contribution from the EU of between EUR 3 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 supported project is expected to contribute to:

- Building a true pan-European R&I community in the field of smart grids & associated flexibility measures / energy systems;
- Establish new collaboration on a long-term perspective which has a potential to develop into industrial collaborations;
- Building, in the long-term, solidarity and trust for a well-functioning and resilient pan-European energy system (e.g. contributing to risk preparedness).

Type of Action: Coordination and support action

Budget: 3.00 million EUR

Opening: 05 December 2017

Deadline: 05 April 2018

LC-SC3-JA-1-2018: Joint programming actions to foster innovative energy solutions

Specific Challenge: The EU needs to accelerate the transformation of its energy system by bridging the gap between research and commercial deployment with innovative solutions. Bridging this gap often requires substantial volumes of investment which cannot be allocated by individual countries or by the European Commission on their own. Mobilising the necessary investment can only be achieved by pooling together financial resources from multiple countries, the Commission, and the private sector. This is a challenge because the funding landscape is complex.

One of the objectives of the SET Plan is to create funding synergies on such a big scale by organising joint programming actions between the entities responsible for public funding programmes and the Commission. ERA-NETs are a key instrument for joint programming actions within the SET Plan, and they also contribute to achieving the objectives of the European Research Area (ERA). In addition, they can play a key role in achieving the goal of the Energy Union of moving away from a fragmented system characterised by uncoordinated national policies and towards an integrated European R&I approach which accelerates the transformation of the energy system.

Areas suitable for ERA-NETs will be identified by Member States' / Associated Countries' representatives in the SET Plan governance bodies (in particular the Joint Actions Working Group). They will then be developed from the early stages in close collaboration with the European Commission and with input from the Programme Committee as needed. This collaboration will ensure that proposed ERA-NETs are in line with energy R&I and SET Plan policy objectives.

Scope: Actions should aim at coordinating the efforts of participating Member States, Associated Countries and Regions towards achieving SET Plan objectives and, where they exist, executing the Implementation Plans jointly developed by SET Plan countries' representatives, industry and research organisations within the SET Plan priority areas numbers 1 to 9. In establishing their thematic scope, proposals will also take into due consideration support already provided through other topics in this work programme part. As for their technology development scope, proposals can support projects addressing any stage of the innovation chain through joint calls.

Proposals should pool the necessary financial resources from participating national or regional research programmes with a view to implementing a joint call for proposals resulting in grants to third parties with EU co-funding. Proposers are requested to also implement other joint activities, including additional joint calls without EU co-funding.

Proposals shall include provision for at least one joint call without EU funding on top of the compulsory co-funded joint call.

Proposals shall specify which additional activities will be carried out as part of the action in accordance with the definition given in General Annex D.

It is expected that actions funded through this topic will bring together national and regional programme owners and programme managers who represent diverse conditions and approaches from the EU.

Participation of legal entities from third countries is also encouraged in the joint calls and in additional joint activities, on the basis of common interest and mutual benefit. Participants from these countries may

request a Union contribution (on the basis of the ERA-NET unit cost) for the coordination costs of additional activities.

Expected Impact: It is expected that actions will help to:

- Establish long-lasting joint programming research efforts between Member States/Associated Countries/Regions in areas of common interest;
- Accelerate the time to commercial deployment of affordable, cost-effective and resource-efficient technology solutions which decarbonise the energy system in a sustainable way;
- Reduce the environmental impact of the energy system;
- Make a measurable contribution to the objectives of the Energy Union, the SET Plan, and the European Research Area;
- Achieve a funding leverage effect of at least 5:1 between national, regional and private sector contributions, on the one hand, and EU contributions on the other.

Type of Action: ERA-NET Cofund

Budget: 10.00 million Euro

Opening: 15 May 2018

Deadline: 11 September 2018

LC-SC3-CC-4-2018: Support to sectorial fora

Specific Challenge: The transition to a low-carbon energy system poses a unique set of policy, technological and scientific challenges, changes the fundamental nature of the interrelations between all actors in our societies (from energy incumbents to regulators and citizens), and requires the engagement of all stakeholders. Not only is there a need to find novel approaches to the development and application of technological or social processes as they relate to the energy transition, but also to a better understanding of how these changes impact people's behaviour, pervasive values, cultures of practice and modes of communication. It also entails the need to engage all stakeholders, foster cooperation between them, align their actions to the achievement of commonly agreed goals.

Scope: Proposals will have to support sector-specific stakeholder fora along the following lines:

1. Support the coordination of stakeholders' activities in the context of the *SET-Plan European Technology Innovation Platforms* (especially towards the progress of the strategic R&I Implementation Plans identified in the different technological areas in the context of the SET-Plan Key Actions*)*, in particular in the area of

a. PV;

b. Ocean energy;

c. Wind energy;

d. Renewable Fuels and Bioenergy;

e. Renewable Heating and Cooling (RHC); and

f. Zero emission fossil fuel power plants and energy intensive industry.

2. All relevant stakeholders of the *hydropower sector* will be brought together in a forum including workshops and online discussion groups in order to identify research and innovation needs and priorities, to share knowledge at the European level between basic science, the research and industrial value chain, civil society and European and national authorities, to support the discussion with up-to-date information. The forum will produce a synthesis of expected research developments and research needs for the coming decades in a technology roadmap and research and innovation agenda in the hydropower sector, targeting an energy system with high flexibility and renewable share.

3. Building on the platform for *energy-related SSH research* that was set up during the pilot phase, the dialogue among different SSH stakeholders - as well as with other energy-research communities, fostering interdisciplinarity as well as knowledge and information sharing – should be continued and enhanced. This includes promoting the generation of novel, evidence-based research designed to inform and influence relevant policy processes, particularly in the context of the Energy Union and the transition to a low-carbon energy system. The platform will be sought after by European policymakers as a source of specific expertise and advice on how best to integrate SSH aspects in energy-related policymaking.

4. Taking into account that private investment is the most important contributor to the Energy Union's Research and Innovation priorities, this action will support the coordination of the industrial participation in the SET Plan. It will in particular focus on the execution of the implementation plans of the SET Plan nine non-nuclear priority actions to reach the strategic targets agreed by the SET Plan Steering Group to enhance European competitiveness in clean energy innovation. In order to reach this goal, the action will promote collaboration and the development of cross thematic synergies among actors who are interested in bringing new clean energy innovations to the market, in particular from the European industry-driven associations and initiatives such as the European Technology and Innovation platforms (ETIPs), European Joint Technology Initiatives or other relevant public-private partnerships, and importantly the industrial actors identified in the 13 non–nuclear SET plan implementation plans. A key task of this action will be to help further define adequate financial strategies to mobilise investments from different sources to fulfil the implementation plans. In line with the SET Plan principles, financial resources will come mainly from industry and national public funds. The use of complementary European funds will be promoted whenever relevant (e.g. from ESIF and the risk sharing facility InnovFin EDP recently significantly enlarged in terms of funding and scope to channel undisbursed funds from NER300 and to prepare the future Innovation Fund). The focus of the action will be European, establishing links with the corresponding sectorial fora in Europe and with other international initiatives in the clean energy domain, such as Mission Innovation.

The Commission considers that proposals requesting a contribution from the EU of up to 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.

Expected Impact: Coordinated stakeholders' activities in the different sectors, providing specific and extensive advice to EU policymakers on energy-related research policy-making, continuing to foster social innovation and social dialogue in the energy field at European level, contributing towards the progress of the strategic research and innovation Implementation Plans identified in the context of the SET-Plan.

Type of Action: Coordination and support action

Budget: 8.50 million EUR

Opening: 05 December 2017

Deadline: 19 April 2018

LC-SC3-CC-6-2018: Transition in coal intensive regions

Specific Challenge: The implementation of the EU Energy Union transition towards a low-carbon economy poses significant technological, economic and social challenges, in particular for coal-intensive regions that have to prepare for the reduction or phasing-out of coal production, both due to market-driven trends and environmental policies. These regions need an effective roadmap to make the necessary transition to a more diversified economic base and a more sustainable energy system, while safeguarding the social cohesion for communities and regions dependent on coal production.

Smart Specialisation strategies, which are also a precondition for benefiting from European Structural and Investment Funds, are expected to help organise the structural changes. The involvement of the private sector, researchers and local governments in the process of 'entrepreneurial discovery' is a key challenge in itself. Developing joint strategies, built on complementarities and respective strengths, can be valuable for better realising the individual and combined potential of coal-intensive regions.

Scope: The objective is to support European coal-intensive regions to design research and innovation strategies to facilitate their transition towards a sustainable energy system. The proposed action will assist policy makers to develop, implement and review their strategies by providing information, developing methodologies, expertise and advice. Main deliverables are a set of blueprints and tools for Member States, Associated Countries and regions. Special consideration will be given to the Implementation Plans jointly developed by European countries, as part of the EU's Strategic Energy Technology Plan (SET Plan).

Specific issues to be addressed include:

Assist regional actors in developing Research and Innovation strategies for smart specialisation, including the development of public R&I capacities, consistent with the SET Plan;

Investigate relevant social challenges including the re-skilling needs of the workforce;

Identification and exchange of best practices, including industrial roadmaps from coal towards new technologies and transformation strategies for coal based combined heat and power production to low carbon electricity and district heating generation;

Guidance to regional actors for the access to available European funds and programmes, such as; (a combination of) the European Fund for Strategic Investments (EFSI), Cohesion Policy funds and Horizon 2020, and leveraging additional national public and private co-financing.

The project should develop synergies and complementarities to the European Commission's Smart Specialisation Platform on Energy (S3PEnergy).

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: The proposed action should lead to new and deepened cooperation in R&I between coal intensive regions that will facilitate their transition to a more sustainable energy system. This cooperation should in the short to medium term contribute to reach the targets set in the SET Plan and stimulate investment in the low-carbon energy sector, with the long term aim to boost innovation-driven growth and industrial competitiveness, create opportunities for employment, meet the COP21 targets and safeguard environmental protection.

Type of Action: Coordination and support action

Budget: 2.00 million Euro

Opening: 15 May 2018

Deadline: 06 September 2018

LC-SC3-EE-17-2019: European City facility - European Cities as key innovation hubs to unlock finance for energy efficiency

Specific Challenge: Mobilising investment in energy efficiency and renewables is key for Europe's energy transition. The European Commission proposed the Smart Finance for Smart Building (SFSB) initiative in the recently published Clean Energy for All Europeans winter package.

For the SFSB to succeed it is essential to boost project aggregation and build a substantial pipeline of energy efficiency investment projects across Europe. Cities and communities are the place where economic, social and environmental transformation actually happens. Cities and communities play a key role in aggregating smaller projects into sizable packages and in mobilising the significant amount of finance needed for the energy transition.

However, despite a tremendous potential, too few cities and communities in Europe succeed in developing and scaling up investment packages. A high degree of organisational, technical and financial innovation is needed to reach significant scale. A key gap is the lack of capacity of public authorities, especially of small and medium-sized municipalities to transform their overall long-term strategies e.g. Sustainable Action Plan or similar into credible investment concepts. Public authorities have limited resources, in particular, to access financial and legal expertise needed to collect additional data, develop an investment programme of scale i.e. pooling projects and/or bundling with neighbouring constituencies and to develop finance strategies with demonstrate sufficient maturity to enable access to different finance routes, i.e. to develop their 'investment concept'.

These concepts would allow a large number of cities and communities to start the process for mobilising the investments in sustainable energy. When relevant these concepts could be combined with other EU financing streams and services to trigger the expected investment (EFSI, ESIF, PDA, National Investment Platforms).

Scope: Proposals are expected to set up and run a 'European City Facility' which offers financial support and services to cities and municipalities or their groupings:

- The City Facility should offer financial support to develop innovative investment concepts within a limited period of time, covering, inter-alia: a clear identification of the potential project pipeline, legal analysis, governance analysis, a description of how the investments will be financed and a design of the process to launch the investments.

- Proposals should foresee to provide support to third parties ('support scheme') as described in part K of the General Annexes of the Work Programme. At least 80% of the budget should directly benefit cities, municipalities or their groupings.

- Proposals should demonstrate the ability to run a support scheme at large scale in accordance with H2020 standards and that they are able to select the most cost-efficient and appropriate city and community applications.

- Proposers should be deeply rooted in the ecosystems of municipal sustainable energy planning and the challenge of finance of energy efficiency. Proposals should demonstrate that they are able to mobilise a critical mass of cities or their groupings and have a sound and inclusive outreach strategy to cities and communities across Europe.

- Proposals should foresee services to underpin European added value and earmark appropriate resources (10% of the requested EU contribution) for common actions that will underpin European added value.

- In order to qualify for support through the City Facility, cities and communities should demonstrate proof of political commitment, demonstrate additionally to existing planning processes and resources, a minimum population covered of 100.000 inhabitants (single or in groupings of municipalities), ambitious scale of potential investment and level of energy savings based on a politically approved SEAP, SECAP or plan of similar ambition, investment sector targeted and type of financial solution envisaged, governance to develop the investment concept, a plan for long-term capacity building within the public administration, a plan on how they will engage with representatives of the key segments and citizens and commitment for monitoring for 2 years.

The Commission considers that proposals requesting a contribution from the EU of around EUR 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: Proposals are expected to demonstrate, the impacts listed below, using quantified indicators and targets wherever possible:

- Demonstration and documentation of increased leveraging of finance into energy efficiency investments by public authorities;
- Overall, the action should trigger for every million Euro of Horizon 2020 support energy efficiency investments worth at least EUR 20 million;
- Number of investment concepts delivered, and number of concepts that turned into tangible investments after the provided support;
- Number of public authority staff with increased capacity for developing investible energy efficiency projects;
- Innovation uptake by potential replicators;
- Primary energy savings, renewable energy production and investments in sustainable energy triggered by participating public authorities after the support of the action (respectively in GWh/year and in million Euro of investments).

Additional positive effects can be quantified and reported when relevant and wherever possible:

- Reduction of greenhouse gases emissions (in tCO2-eq/year) and/or air pollutants (in kg/year) triggered by the project.

Type of Action: Coordination and support action

Budget: 11.00 million EUR

Opening: 01 August 2018

Deadline: 05 February 2019

LC-SC3-ES-8-2019: European Islands Facility - Unlock financing for energy transitions and supporting islands to develop investment concepts

Specific Challenge: Mobilising investment in energy efficiency and renewables is key for Europe's energy transition. In 2017 the European Commission and 14 EU Member States signed a political declaration to launch the new 'Clean Energy for EU Islands' initiative. Its aim is to help islands reduce their dependency on

energy imports by making better use of their own renewable energy sources and embracing more modern, socially inclusive and innovative energy systems.

Europe's more than 2200 inhabited islands can be considered living-labs which can deliver a pipeline of energy investment projects across Europe. Energy transitions on islands often benefit from low opportunity costs due to the existing high prices of conventional liquid fuels in contrast to the variety of renewable sources they may have available.

However, despite tremendous potential, too few islands in Europe succeed in developing and scaling up investment packages. A high degree of organisational, technical and financial innovation is needed to reach significant scale. A key gap is the lack of capacity for islands to transform their overall long-term ambitions into a credible set of plan(s) and project outlines, i.e. investment concepts, that serve as the basis for concrete projects. In particular, local initiatives and/or public authorities on islands have limited resources to access the analytic, financial and legal expertise needed to collect additional data and develop an investment programme of scale i.e. pooling projects and/or developing financing strategies which demonstrate sufficient maturity to enable access to different sources of finance often mobilised locally on the island.

In order for islands to be microcosms of economic, social and environmental transformations they may often require assistance in designing coherent set of projects and selecting the most cost-effective option from the life-cycle perspective, aggregating smaller projects into island-size packages and in mobilising the significant amount of finance needed for a full energy transition. This may also include communication and engagement actions among island inhabitants to identify acceptable projects, which also can lead to projects co-ownership and mobilisation of local financing.

The investment concepts would allow a large number of islands and regions to access the various innovative financing streams which are being structured (e.g. PDA, ESIF Financial Instruments, National Investment Platforms), to increase the absorption rates of EFSI and to access private finance.

Scope: Proposals are expected to set up and run a 'European Islands Facility' which offers expertise and/or financial support and services to islands:

- The Islands Facility should offer expertise and/or financial support to develop, within a limited period of time, innovative cost-effective investment concepts based on (or the development of – if they do not yet exist) a transition plan and a coherent set of projects that will lead to a decarbonised, efficient and resilient island energy system using local energy flows and resources;

- The Islands Facility should be able to provide, inter-alia: translation of ambitions into a holistic energy transition plan, assistance in modelling of the energy transition on the island(s), a clear identification of the individual potential project pipeline(s), legal analysis and support, a description of how the investments will be financed and, if relevant, how the financing will be mobilised locally, advice on available funds and a design of the process to launch the investments. It can also cover the support for information and engagement actions among the islands inhabitants in the view of ensuring their acceptance, projects participation and co-ownership, also mobilising local financing;

- The Islands Facility should develop in-house expertise to coordinate, support the implementation and critically evaluate the outcomes on the above-mentioned issues, i.e. preparation of energy transition plans, modelling of the energy transition on the islands, identification and financing of project pipelines, legal analysis, so that it will create synergies between requests for assistance from different islands;

- Besides the technical assistance, the Islands Facility will maintain a public, searchable portal with the energy transition plans and project proposals that it has supported and developed, share and spread

knowledge and best practices based on a sound and inclusive outreach strategy, with the aim to engage as many islands as possible in the energy transition;

- Proposals should foresee to provide support to third parties ('support scheme') as described in part K of the General Annexes of the Work Programme. At least 30% of the budget should be directly allocated for spending to island cities, municipalities or their groupings;

- Proposals should demonstrate that they are deeply rooted in the ecosystem of island communities, of sustainable energy planners and project initiators, and of the financing community of energy efficiency and energy system transformations;

- Proposals should include a strategy to include contributions from 3rd parties to its funding such as local, regional or national authorities (while maintaining autonomy in its activities), and a strategy to continue its work after the granted budget is finished;

- Proposals should demonstrate that they are able to mobilise a critical mass of islands and set up the support scheme of the Islands Facility in accordance with H2020 standards;

- Proposals have to foresee services to underpin European added value and earmark appropriate resources (+/- 50% of the requested EU contribution) for common actions based on in-house expertise, in particular in relation to (coordination of and advise on) energy transition plans and modelling, that will underpin European added value;

- Proposals should demonstrate how they are able to select and prioritise islands for support under this facility, based on the following requirements: in order to qualify for support through the Islands Facility, islands must demonstrate proof of political commitment, an ambitious scale of potential investment and level of energy savings relevant to the island, investment sector targeted and type of financial solution envisaged, governance to develop the investment concept, a plan for long-term capacity building within the public administration, a plan on how they will include citizens and other stakeholders, and a commitment for monitoring for 2 years;

- Proposals should include a task to establish links and synergies with R&I projects selected under LC-SC3-ES-4-2018-2020: Decarbonising energy systems of geographical Islands under the BRIDGE initiative.

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

Expected Impact: Proposals are expected to demonstrate the impacts listed below using quantified indicators and targets wherever possible:

- Demonstration and documentation of increased leveraging of finance into energy transition investments by public authorities;

- Overall, for every million Euro of Horizon 2020 support the action should trigger energy transition investments worth at least EUR 10 million;

- Number of investment concepts delivered, and number of concepts that turned into tangible investments after the provided support;

- Number of public authority staff with increased capacity for developing investible energy transition projects;
- Innovation uptake by potential replicators;
- Primary energy savings, GHG reductions, renewable energy production and investments in sustainable energy triggered by participating public authorities after the support of the action (respectively in GWh/year and in million EUR of investments).

Type of Action: Coordination and support action

Budget: 10.00 million EUR

Opening: 05 September 2018

Deadline: 05 February 2019

3.3.4. INTELLIGENTER, UMWELTFREUNDLICHER UND INTEGRIERTER VERKEHR

MG-2-6-2019: Moving freight by Water: Sustainable Infrastructure and Innovative Vessels

Specific Challenge: Although it is a means of transport that can reduce transport CO2 and air polluting emissions and significantly contribute to reducing congestion on European roads waterborne transport around European coasts and on its inland waterways remains under-utilised and is not fully integrated in the multimodal European Transport system. Both technical and administrative requirements hinder the take up of Intra-European waterborne transport. Improvements are needed concerning: efficient and seamless integration between transport modes and last mile connection, inland waterway bottlenecks, capacity of small ports, loading times, efficiency of transferring cargo between modes, cost effectiveness of partial cargo loads, environmental impacts and the feasibility of mixed passenger/freight services. There is a need to stimulate the modernization of intra-European waterborne transport as well as waterborne transport with neighbouring countries, particularly in the case of the outermost regions by fostering automation and digitisation so as to enable their more efficient and reliable participation in the whole supply chain, to reduce environmental impacts such as noise and to respond to changing freight flows and supporting full implementation of synchromodality within inland waterways.

Scope: Proposals should focus on either area a) inland waterways or area b) maritime transport. To address this challenge, proposals should address the first bullet (for Maritime transport), or the fourth bullet (for Inland Waterway Transport), and at least four others of the following aspects. Proposals should clearly indicate which area they are addressing:

- With a focus on the TEN-T network, develop to at least TRL5 one or more innovative inland waterway or short sea transport solutions incorporating innovative vessels which can operate more effectively within intermodal logistic chains with limited and affordable improvements to existing infrastructure. For example, solutions may combine freight with passenger services or ship to ship transfers so as to improve the cost effective feeding of freight from large to small inland ports. The role of smaller coastal ports, inland waterways and their urban waterfront, including those located in the outermost regions, should not be neglected as a means to exploit their high potential to contribute to innovative mobility solutions and last mile freight delivery.
- Solutions should address the entire business model including connectivity IT infrastructure and integration with other transport modes.

- Automated and connected inland waterway and/or port infrastructure should be addressed to enable more efficient operations. As appropriate, smart systems and automation should consider the automation of bridges, locks and dams, cargo handling and units, docking systems and shore side power. Digitisation, for example, EGNOS/Galileo services should facilitate efficient cross-border traffic and cargo information and ensure multi-modal interconnectivity and integration. The High Precision and Authenticated Positioning services of Galileo should be taken into account in optimizing the port operations.

- Proposals addressing inland waterways, should address solutions for infrastructure maintenance and operation that increase the network resilience as well as long-term reliable navigability forecast, and should ensure compatibility with existing and emerging harmonised cross border and intermodal traffic management systems.

- Environmental performance must be significantly improved compared to the current state of the art with regard to local air quality, noise, energy efficiency and risk of pollution. An environmental impact assessment and safety assessment of the developed solution in comparison to alternative forms of transport should be undertaken.

- Concepts should be proven, a cost-benefit analysis undertaken and experimental validation and demonstration should be undertaken where feasible.

- Dissemination, engagement and cooperation with logistics, shippers and intermodal transport operators are encouraged.

- Business cases should be developed for key routes including comparison with existing transport solutions.

- Recommendations should be made for optimising the conditions for intermodal solutions incorporating waterborne freight transport, including over shorter distances.

- Outcomes should be developed to a level which would be potentially suitable for deployment possibly with the support of CEF TEN-T, EIB loan, ESIF or other programme.

The Commission considers that proposals requesting a contribution from the EU between EUR 5 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: Decongest road and/or city infrastructure. Reduce the CO2 and air pollutant emissions of intra-European freight transport. Enhance the performance of the CEF TEN-T network. Substantially increase the amount of freight fed from intercontinental European ports using waterborne transport. Modernise, increase the reliability and competitiveness of Intra European Waterborne transport. Proposal should demonstrate that the deployment of solutions can increase the quantity of freight moved by Inland Waterways or Short Sea Shipping by at least 10% by 2030 compared to 2010 baseline data.

Type of Action: Research and Innovation action

Budget: 30.00 million EUR

Opening: 05 September 2018

Deadline: 16 January 2019 (First Stage), 12 September 2019 (Second Stage)

3.3.5. KLIMASCHUTZ, UMWELT, RESSOURCENEFFIZIENT UND ROHSTOFFE

CE-SC5-05-2018: Coordinated approaches to funding and promotion of research and innovation for the circular economy

Specific Challenge: Authorities throughout the EU continue to fund research and innovation in the field of circular economy at a national or regional level. Programme owners do so on the basis of their own mandates, though doubtlessly to a large extent in accordance with national and European priorities. Nevertheless, fragmentation of scarce resources, difficulties in implementing international synergies without a joint platform and lack of institutionalized outreach throughout Europe all hamper progress towards achieving common EU objectives. Moreover, the progress made in research and innovation underpinning circular economy varies throughout the EU.

This calls for a strategic approach to the coordination of objectives and programming of the regional, national and European funding programmes throughout the area of research and innovation for a circular economy. A strategic approach would help build international synergies among programme owners (in order to overcome and avoid fragmentation), and strengthen dissemination of lessons learned and new solutions for the circular economy resulting from currently isolated national programmes and funding.

Scope: The action should establish a joint platform which will formulate, based on a thorough understanding of the state-of-the-art, the research and innovation needs and priorities for circular economy development in the EU. To this end, this action should bring together national and regional programme owners which will adequately represent the diversity of conditions and approaches from around the EU. The action should encompass joint development of objectives, priority setting, impact assessment, and programme and project organisation. It should produce a Strategic Research and Innovation Agenda, summarising recommendations for research priorities and coordinated programming and funding mechanisms. Innovation involving SMEs should be explicitly addressed. The action should disseminate best practices and promote multinational research and innovation actions within national and regional programmes. It should also include a mechanism whereby it could draw from the expertise and experience of leading research organisations as well as industry and civil society organisations. It should seek cooperation and synergies with relevant initiatives addressing the circular economy, including those funded by the EU.

The Commission considers that proposals requesting a contribution from the EU of up to 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: The project results are expected to contribute to:

- alignment and coordination of regional, national and European programming of R&I in the area of the circular economy and associated environmental impacts;
- effective regional, national and European R&I funding in the field of the circular economy, with special attention to SMEs;
- accelerated diffusion of state-of-the-art circular economy solutions and best practices in circular economy R&I throughout Europe;
- implementation of national and EU-level action plans including the Circular Economy Action Plan, the Green Action Plan for SMEs, and Eco-Innovation Action Plan.

Type of Action: Coordination and support action

Budget: 2.00 million Euro

Opening: 07 November 2017

Deadline: 27 February 2018

SC5-21-2019-2020: ERA-NET Cofund action(s) for climate action, environment, resource efficiency and raw materials

Specific Challenge: While Europe is making progress in reducing environmental pressures and addressing climate change challenges, current environmental policies and technology efficiency gains are not likely to be sufficient to address the substantial challenges it faces in protecting its natural capital, stimulating resource-efficient, low-carbon and climate-resilient economic and social development and safeguarding its population from environmental health risks. The challenge of underpinning and accelerating the transformation of our economy and society to achieve more sustainable development paths has a planetary scale. The UN's 2030 Agenda for Sustainable Development and the Paris Agreement on climate change have given new impetus to tackling these challenges at a global level.

Operating a systemic transformation for sustainable development requires the mobilisation of all relevant actors: public authorities at various levels, manufacturing industry and business at large, academia, research institutes, finance and insurance, non-governmental organisations and civil society. A properly aligned European Research Area, which is also open to the world, can make an essential difference in enabling a transformative sustainability agenda to take shape. The alignment of research and innovation agendas is therefore crucial in bringing about the necessary transformations.

Scope: Proposals should pool the necessary financial resources from the participating national (or regional) research programmes with a view to implementing a joint call for proposals resulting in grants to third parties with EU co-funding in this area. Proposers are requested to include additional joint calls without EU co-funding as well as other activities such as the establishment or consolidation of a pan-European network of funding agencies and other key players in Europe, building on previous experience and avoiding overlaps with other initiatives, support to mutual learning and training, exchange of good practice, researcher mobility and equal opportunities (e.g. through EURAXESS) and better careers in the field. Wherever relevant, actions should involve social sciences and humanities.

Actions should focus on one of the following issues: emerging pollutants; international cooperation on disaster risk reduction and multi-hazard risk management, with emphasis on environmental change; health, environment and climate change; conservation and protection of cultural heritage; biodiversity and climate change; conservation and restoration of degraded ecosystems and their biodiversity, including a focus on aquatic systems; enhancing urban transformation capacities/circular cities; sustainable supply of raw materials; next generation of climate science in Europe.

Synergies should be ensured with relevant public-public partnerships such as the JPI Water, JPI Climate, JPI Cultural Heritage and/or the BiodivERsA ERA-NET, as well as with international programmes such as the Belmont Forum, as appropriate. Participation of legal entities from international partner countries and/or regions is encouraged in the joint call as well as in other joint activities including additional joint calls without EU co-funding. Participants from this/these country/ies may request a Union contribution (on the basis of the ERA-NET unit cost) for the coordination costs of additional activities.

Expected Impact: The project results are expected to contribute to:

- effective trans-national, pan-European research networking and synergies among national/regional and EU research programmes in the areas addressed;
- new knowledge-intensive products and services;
- improved evidence-based policy through the interdisciplinary and trans-disciplinary science-policy interface and links with international efforts and fora on the areas addressed.

Type of Action: ERA-NET Cofund
Budget: 10.00 million Euro
Opening: 14 November 2018
Deadline: 19 February 2019

3.3.6. Europa in einer sich verändernden Welt: integrative, innovative und reflektierende Gesellschaften

TRANSFORMATIONS-03-2018-2019: Innovative solutions for inclusive and sustainable urban environments

Specific Challenge: The increasing percentage of people living in urban areas and the impact of digital technologies on public services make good governance, inclusive policies, smart planning and social and environmental sustainability ever more important for ensuring the quality of human life. Urban environments and agglomeration effects provide an ecosystem for economic growth and innovation. While the impact of the recent financial crisis on European urban areas is by no means uniform, it has led in many instances to rising socio- economic inequalities that are affecting social cohesion and resilience. The challenge is to identify the main drivers of inequalities in different urban and peri-urban contexts and to identify best practices and initiatives, including digital solutions and alternative participatory growth models, with potential for upscaling that can promote upward social mobility, social inclusion and cohesion, resilience and sustainable development.

Scope: A. Coordination and Support Action (2018)

The Urban Research Platform should bring together researchers, policy-makers and other experts on equitable, inclusive and sustainable urban development. It should map, assess, distil and communicate findings and recommendations from the many relevant projects on these issues funded under FP7 and H2020 and translate these into clear and applicable policy recommendations. It should facilitate knowledge sharing and connectivity between researchers, policy makers and practitioners.

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. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

B. Research and Innovation action (2019)

Proposals should assess the scale, dimensions and drivers of socio-economic inequalities in urban and peri-urban settings across different city typologies, across Europe and across demographic diversities, paying particular attention to gender differences. They should assess the effectiveness at local level of relevant policies, strategies, planning practices and other interventions aimed at promoting social inclusion, cohesion and resilience in urban environments, including new and participatory models of growth that foster

sustainable and equitable prosperity. Findings should be communicated also in the form of clearly formulated policy recommendations.

The Commission considers that proposals requesting a contribution from the EU in the order of 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.

Expected Impact: By linking research, innovation and policy, the action will support urban strategies, policies and planning practices to promote equitable, inclusive and sustainable growth, including the uptake of new, participatory and alternative growth models. It will contribute to the advancement of the EU Urban Agenda and the Sustainable Development Goal dedicated to making cities inclusive, safe, resilient and sustainable. It will also inform the continuous development and implementation of Smart Specialisation as well as the urban dimension of cohesion policy.

Type of Action: Coordination and support action, Research and Innovation action

Budget: 1.50 million Euro (2018/CSA), 6.00 million Euro (2019/RIA)

Openings: 07 November 2017, 06 November 2018

Deadlines: 13 March 2018, 14 March 2019

TRANSFORMATIONS-04-2019-2020: Innovative approaches to urban and regional development through cultural tourism

Specific Challenge: The various forms of cultural tourism in Europe are important drivers of growth, jobs and economic development of European regions and urban areas. They also contribute, by driving intercultural understanding and social development in Europe through discovering various types of cultural heritage, to the understanding of other peoples' identities and values. However, although cultural tourism by its nature invites cross border regional and local cooperation, its full innovation potential in this respect is not yet fully explored and exploited. The level of development of cultural tourism between certain regions and sites is still unbalanced, with deprived remote, peripheral or deindustrialised areas lagging behind whereas high demand areas being overexploited in an unsustainable manner. There is also a significant knowledge gap in terms of availability of both quantitative and qualitative data on the phenomenon of cultural heritage tourism and on understanding its contribution towards cultural Europeanisation and economic and social development in Europe.

Scope: A. Research and Innovation action (2019)

Proposals should comparatively assess how the presence, development, decline or absence of cultural tourism has affected the development of European regions and urban areas. They should investigate motives for cultural tourism and assess the effectiveness and sustainability of multilevel strategies, policies, trends and practices in attracting, managing and diversifying cultural tourism in Europe in view of identifying best practices that should be communicated to policymakers and practitioners. This should include considerations of specific strategies to promote cultural tourism at a regional, national and European level, including use of structural investment funds where appropriate. Minority cultures and regions as well as urban areas currently less attractive to cultural tourism should receive special attention. Historical perspectives, as well as comparison with lessons learned at international level on the emergence of particular forms of cultural tourism or reasons for cultural tourism in particular areas should also be investigated. Innovative methods and techniques, including statistical tools and indicators, for measuring and assessing various practices and impacts of cultural tourism should be developed and tested. Proposals should also deploy place-based and participatory approaches to investigate the relation between intra-European cultural tourism and Europeanisation and whether it impacts identities and belonging.

The Commission considers that proposals requesting a contribution from the EU in the order of 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.

B. Innovation action (2020)

Expected Impact: The action will improve policies and practices on cultural tourism at various levels. It will also provide strategic guidance at European level concerning the efficient use of European Structural Investment Funds. In addition, it will contribute to the establishment of partnerships between public and private stakeholders in this area. Creation of innovative quantitative/statistical as well as qualitative tools and methods will improve available data on and understanding of the impact of cultural tourism on European economic and social development and on cultural Europeanisation.

Type of Action: Research and Innovation action

Budget: 9.00 million EUR

Opening: 06 November 2018

Deadline: 14 March 2019

TRANSFORMATIONS-06-2018: Inclusive and sustainable growth through cultural and creative industries and the arts

Specific Challenge: The development of cultural and creative industries (CCIs) is vital for a vibrant economy and as a means of revitalising EU regions. The CCIs employ 7.5% of the EU's workforce and add around EUR 500 billion to GDP. CCIs also contribute significantly to youth employment and were remarkably resilient in the context of the economic crisis. However, they still do not benefit from the support of a comprehensive sectorial policy scheme in most Member States and Associated Countries or at the EU level.

Scope: Proposals should develop a comprehensive understanding of CCIs, improving indicators at national and at EU level. Using multidisciplinary qualitative and quantitative research approaches as relevant, they should assess knowledge gaps on the role of specific skills (including digital and artistic) and traditional crafts, education and training, and design and creativity. Proposals should explore the conditions for a successful CCI sector, considering business models, resilient strategies and innovative solutions to boost sustainable employment and growth in the sector, and their interactions with research and development processes, especially for the self-employed and micro enterprises. The impact of employment patterns, also considering its gendered dimensions, digitisation, financing models, tax incentives and IPR protection across sectors and the impact of national and regional Smart Specialisation Strategies should be addressed. Proposals should also assess how cultural and creative industries and the arts relate to and represent cultural diversity and how and to what extent they promote the access of all citizens to their experiences, services and products. Co-creation and stakeholder participation are considered important approaches to this topic.

The Commission considers that proposals requesting a contribution from the EU in the order of 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.

Expected Impact: The action will formulate recommendations in support of regional, national and European policies in the field of cultural and creative industries. It will inform, mobilise and connect relevant sectorial and policy stakeholders and increase awareness of the economic and societal issues at stake. It will also improve statistical data and quantitative and qualitative methods in cooperation, when appropriate, with national statistical institutes, relevant international organisations, networks, research infrastructures and Eurostat with a view of enabling short, medium and long term tracking of national and EU performance in CCIs.

Type of Action: Research and Innovation action

Budget: 7.50 million EUR

Opening: 07 November 2017

Deadline: 13 March 2018

3.3.7. Verbreitung von Exzellenz und Ausweitung der Beteiligung

WIDESPREAD-01-2018-2019: Teaming Phase 2

Specific Challenge: Despite efforts to reduce disparities in country research and innovation performance in the EU, sharp differences among Member States still remain. These disparities are due to, among other reasons, the insufficient critical mass of science and lack of centres of excellence having sufficient competence to engage countries and regions strategically in a path of innovative growth, building on newly developed capabilities. Exploiting the potential of Europe's talent pool by maximising and spreading the benefits of research and innovation across the Union is vital for Europe's competitiveness and its ability to address societal challenges in the future. This could help countries and regions that are lagging behind in terms of research and innovation performance to attain a competitive position in the global value chains.

Teaming will support the creation of new centres of excellence or upgrading the existing ones in low R&I performing countries, building on partnerships between leading scientific institutions and partner institutions in low R&I performing countries, that display the willingness to engage together for this purpose.

Scope: Teaming involves in principle, two (2) parties:

(1) The main applicant organisation (the coordinator) established in a "Widening" country that must be either a national/regional authority or a research funding agency or a university or a research organisation.

(2) A university or research organisation with an international reputation in research and innovation excellence.

The proposal for Teaming Phase 2 must:

- Illustrate the scientific and innovation potential of the future Centre of Excellence

- Demonstrate the growth potential and expected socio-economic outreach of the Centre of Excellence for the benefit of the country or region

- Elaborate on the structure of the partnership and on the strong engagement of the partners

- Demonstrate how the newly established/upgraded Centre will have full autonomy in decision making. In particular, the Centre of Excellence should have the maximum degree of autonomy in terms of taking its own decisions, being in legal, administrative, operational, personnel and academic matters. The Centre should be able to set and pay competitive salaries for its personnel.

- Elaborate on the steps that will be taken to ensure long term self-sustainability after the end of the Horizon 2020 project.

- Propose a robust human resource strategy (also encouraging gender equality), ensuring appropriate administrative and management capacities for the effective and efficient running of the Centre of Excellence.

- Include the letter(s) of commitment for complementary funding from the interested national/regional authorities or other private sources to commit financial resources (e.g. resources coming from the European Structural and Investment Funds or Instrument for Pre-accession Assistance (IPA II) funds as appropriate) for

implementing the future Centre, in particular regarding investment in infrastructure and equipment. The letter(s) of Commitment for complementary funding (a template will be provided by the Commission in due time) of the project will be an integral part of the evaluation of the proposal taking into consideration:

- the nature of the commitment,
- the legal form of the commitment (what kind of legal scheme supports the financial commitment),
- the specific amount of the commitment and its expected impact on the establishment of the centre (the total amount of the complementary funding must be at least at the same level or more than the total Horizon 2020 funding requested),
- the level of certainty that the relevant funds would be indeed available to that specific Centre.

How the complementary funding will be spent during the project has to be explained in detail in the proposal, both in the budget table of Part A as well as with a clear and detailed cost breakdown of the activities funded in Part B.

Procedure for Teaming Phase 2:

Teaming Phase 2 is a restricted call open only to:

a. Applicants successfully funded under the topic WIDESPREAD-04-2017: Teaming Phase 1.

b. Applicants who have concluded a Framework Partnership Agreement under the topic WIDESPREAD-1-2014: Teaming, of the call H2020-WIDESPREAD-2014 but have not concluded a Specific Grant Agreement under the topic WIDESPREAD-01-2016-2017: Teaming Phase 2.

For both points a. and b. above, in order not to put in doubt the result of the initial evaluation (Teaming Phase 1), the internationally leading ("advanced") institution(s) partners in the proposal must remain the same as in Phase 1.

A change of the partners from the widening country for Phase 2 is only allowed in clear-cut cases for instance where there might be a conflict of interest or a new legal entity for the Centre of Excellence is created. A detailed explanation for such a change has to be elaborated as part of the proposal for Phase 2.

Successful applicants under topic WIDESPREAD-1-2014: Teaming, of the call H2020-WIDESPREAD-2014 and topic WIDESPREAD-04-2017: Teaming Phase 1 of the call H2020-WIDESPREAD-2016-2017 have received a grant to produce an extensive, detailed and robust Business Plan within a timeframe of 12 months for the setting-up/upgrading of a Centre of Excellence. Based on the business plan developed during Phase 1, applicants are expected to submit a separate proposal for Teaming Phase 2. The proposal is expected to reflect all key elements of the business plan.

Nevertheless, it is emphasised that the Business Plan is the deliverable of Teaming Phase 1 and will not be subject to evaluation under Phase 2 (neither it will be made available to evaluators).

Applicants to this call will have to submit a proposal, following the template that will be made available to applicants through the submission tool. The submitted proposals under this restricted call will undergo an independent evaluation, and those selected for funding will be awarded a CSA grant (Teaming Phase 2).

This new grant for Teaming Phase 2 will provide substantial support for the start-up and implementation phase of the future Centre of Excellence. This will cover mainly administrative and operational costs as well as personnel costs of the future Centre of Excellence. While the action does not focus on equipment and consumables, these could be accepted if they constitute only a minor part of the total Horizon 2020 funding requested and may be deemed necessary to fulfil the action's specific scope and objective.

It is to be noted, that Horizon 2020 under the Teaming action will not support infrastructure costs associated with the new or upgraded centre. Such costs are expected to be supported by other types of funding, including where relevant by the European Structural and Investment Funds (ESI Funds) or the Instrument for Pre-accession Assistance (IPA II) funds.

For grants awarded under this topic and type of action the following cost categories will be ineligible costs:

- infrastructure costs.

The respective option of Article 6.5.C of the Model Grant Agreement will be applied. Such costs are expected to be supported by other types of funding, including where relevant by the European Structural and Investment Funds (ESI Funds) or the Instrument for Pre-accession Assistance (IPA II) funds.

The duration of a Teaming Phase 2 project will be between 5 to 7 years.

The Commission considers that proposals requesting a contribution from the EU of EUR 15 million, would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting lower amounts.

Expected Impact:

The creation of new (or significant upgrades of existing) Centres of Excellence in "Widening" Countries through the Teaming partnerships is expected to:

- - increase the scientific capabilities of these countries and enable them to engage in a strategic growth path pointing to long-term opportunities for economic development.
- - through improved scientific capabilities allow these countries to improve their chances to seek competitive funding in international fora (including the EU Framework Programmes).
- - over the medium to long term achieve a measurable and significant improvement in terms of research and innovation culture (as shown through indicators such as research intensity, innovation performance, values and attitudes towards research and innovation) of those countries.
- - reinforce the potential impact of the new/upgraded Centre of Excellence in terms of sustained excellence through projected measurable key performance and output related indicators.

It should be explained how the leading scientific institutions in the partnership will contribute in terms of provision of access to new research avenues, creativity and the development of new approaches, as well as acting as a source for increased mobility (inwards and outwards) of qualified scientists.

The benefits for the internationally leading scientific institutions and the way they would materialise through the partnership should be substantiated.

Type of Action: Coordination and support action

Budget: 103.00 million Euro (2018), 111.00 million Euro (2019)

Opening: 15 May 2018

Deadline: 15 November 2018

1. This is a restricted call for proposals open only to:

a. Applicants successfully funded under the topic WIDESPREAD-04-2017: Teaming Phase 1.

b. Applicants who have concluded a Framework Partnership Agreement under the topic WIDESPREAD-1-2014: Teaming, of the call H2020-WIDESPREAD-2014 but have not concluded a Specific Grant Agreement under the topic WIDESPREAD-01-2016-2017: Teaming Phase 2.

For both points a. and b. above, in order not to put in doubt the result of the initial evaluation (Teaming Phase 1), the internationally leading ("advanced") institution(s) partners in the proposal must remain the same as in Phase 1.

A change of the partners from the widening country for Phase 2 is only allowed in clear-cut cases such as where there might be a conflict of interest or a new legal entity for the Centre of Excellence is created. A detailed explanation for such a change has to be elaborated as part of the proposal for Phase 2.

2. The requested EU contribution shall not exceed a maximum of EUR 15 million for a period between 5 to 7 years.

WIDESPREAD-02-2018: Support to JPI Urban Europe

Specific Challenge: In tackling societal challenges in the area of sustainable urbanisation, fragmented national research and innovation programmes represent an obstacle for European collaboration. In some countries, the situation has led to an underrepresentation of such countries in transnational collaboration. The different national research and innovation systems, approaches and instruments in these countries also add to the challenge.

Furthermore, urban policy-making is often hampered by the limited cross-sector cooperation which does not allow a strong policy support that is based on scientific evidence.

Following the implementation of the actions foreseen by the Commission's Communication on Joint Programming to tackle Europe's major societal challenges of 2008, the Competitiveness Council has launched altogether ten Joint Programming Initiatives so far, among which is the Joint Programming Initiative 'Urban Europe - Global Urban Challenges, Joint European Solutions' (JPI Urban Europe). The initiative enhances the knowledge and capacities to support urban transition towards sustainability in Europe and beyond. In doing so, it develops innovative solutions and reduces the fragmentation of urban-related research and innovation funding as well as builds critical mass and visibility. Several Council Conclusions on Joint Programming invite the Commission to support JPIs via Coordination and Support Actions.

The development of the JPI Urban Europe is driven by a strong group of countries but as to the overall country participation, the initiative is seeking to widen the participation. Although efforts are taken by the JPI Urban Europe in this sense, the results can only be expected in a longer-term as this challenge is of the structural nature.

The use of the European Structural and Investment Funds (ESI Funds) is seen as an essential element to strengthen the implementation of new urban solutions and concepts in Europe. The Urban Agenda sets out a policy agenda for this and for EU urban policy in the wider sense. Many smart specialisation strategies include urban and smart cities related priorities and chart out the use of ERDF funding to develop and test new solutions for them. The Urban Innovative Actions identify and test innovative solutions for sustainable urban development. Also the JPI Urban Europe aims to create, validate and demonstrate knowledge and solutions. The ESI Funds could provide for both investments and implementation support. The challenge is how to create synergies, complementarities and coherence as well as alignment between the activities of the JPI Urban Europe and other existing resources such as the ESI Funds.

The outreach and opening of the JPI Urban Europe to third country partners is increasingly raising interest among the latter. Building on this momentum, the challenge is to further enhance the opening of the JPI to international cooperation and thus contribute to creating a coherent European Research Area that is open to international cooperation in the field of sustainable urban development. The challenge is how to consolidate the alignment of national, EU and international research and innovation programmes, which is one of the key objectives of Joint Programming Initiatives. In that regard, there is also a need to support the post-2015

sustainable development agenda, in particular the Sustainable Development Goal on sustainable cities and urban settlements, building on related international activities taking place at United Nations level.

Scope: Proposals should aim to implement a solid opening-up strategy of the JPI Urban Europe, for enlarging participation of more European partner countries getting involved in the JPI initiative, including from Widening countries, and to further enhancing the commitment and broader participation of countries. Proposals should build on the coordination action 'EXPAND – Enhancing co-creation in JPI Urban Europe through widening Member State and stakeholder participation' that is expected to establish a Stakeholder Involvement Platform for the widening of participation and capacity building in terms of countries, regions, stakeholders and urban actors. In that regard, proposals should ensure the sustainability of the Stakeholder Involvement Platform. Proposals should engage a wide variety of countries in the activities of the JPI Urban Europe with the support of existing complementary resources such as the ESI Funds. In doing so, the proposal should build on the pilot activities implemented and establish further test beds for new instruments and for scaling up innovative solutions. Proposals should further professionalise the JPI Urban Europe programme management and further diversify various instruments for creating scientific evidence, innovations and the impact. Proposals should support the strategic processes of the JPI Urban Europe beyond 2020 and also establish mechanisms for the implementation of the future internationalisation strategy of the JPI Urban Europe that is under preparation. In doing so, proposals should investigate activities to align with and support the post-2015 sustainable development agenda, in particular, the Sustainable Development Goal on sustainable cities and urban settlements.

All participants in proposals must be legal entities which finance or manage publicly funded national or regional programmes in the urban-related research and innovation domains or which are institutions mandated to represent the country/region in JPI Urban Europe activities.

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

Expected Impact:

- - Increased scale and scientific quality of urban-related research and innovation activities as well as the overall coherence, complementarity and efficiency of the use of European research and innovation resources in this area including from Widening countries. In this context, relevant geographical spread is expected (medium to long term impact);
- Further professionalised programme management and more diversified instruments supporting implementation of the JPI Urban Europe Strategic Research and Innovation Agenda corresponding to the conditions of all types of countries as well as the JPI Urban Europe strategy development beyond 2020 (short to medium term impact);
- Increased synergies, complementarities and alignment between the strategies, activities and related resources of the JPI Urban Europe and other existing resources such as the ESI Funds, mostly present in Widening countries (medium term impact);
- More efficient valorisation and take-up of research findings both in terms of policy and innovation, including test beds for piloting new urban solutions (short to medium term impact);
- Improved exchange of know-how on urban R&I solutions across the EU, including Widening countries, and at global level (short to medium term impact);

- Strengthened role of the JPI Urban Europe for underpinning knowledge and scientific evidence for supporting the implementation of related EU policies, also in the context of the post-2015 sustainable development agenda (medium to long term impact);

- Enhanced positioning of the JPI Urban Europe as a privileged and attractive partner for global cooperation in the urban-related research and innovation (medium to long term impact).

Type of Action: Coordination and support action

Budget: 1.50 million EUR

Opening: 15 May 2018

Deadline: 15 November 2018

1. All participants in a proposal must be legal entities which:

- Finance or manage publicly funded national or regional programmes in the urban-related research and innovation domains or

- Institutions mandated to represent the country/region in JPI Urban Europe activities.

2. The requested EU contribution shall not exceed a maximum of EUR 1.5 million.

WIDESPREAD-04-2019: ERA Chairs

Specific Challenge: With adequate institutional support outstanding researchers can have a decisive and positive impact on the culture and performance of research institutions. Yet issues such as the availability of research funding, institutional rigidities and access to resources can hamper their mobility to promising institutions, particularly in low R&I performing countries. ERA Chairs actions will address the specific challenge of creating the appropriate conditions for high quality researchers and research managers to move and engage with institutions willing to achieve excellence in the scientific domain of choice and modify their research and innovation landscape.

Scope: The ERA Chairs actions will support universities or research organisations with the objective of attracting and maintaining high quality human resources under the direction of an outstanding researcher and research manager (the "ERA Chair holder") and in parallel implement structural changes to achieve excellence on a sustainable basis.

The scientific field can be any domain of research and innovation addressed under the Treaty on the Functioning of the European Union, however it needs to be closely connected with the activities of the ERA Chair holder and fully capitalise on his/her presence and expertise.

Research organisations interested in establishing an ERA Chair shall submit a proposal based on a strengths, weaknesses, opportunities, and threats (SWOT) analysis, aimed at structural change in the institution and ensuring that the conditions are in place to foster excellent research. Proposals should include arrangements for compliance with ERA priorities including the European Charter for Researchers & Code of Conduct for the Recruitment of Researchers, a description of the necessary investments in research projects, facilities and infrastructures and how those will be achieved as, for example, through the use of Cohesion Policy funds, and/ or a better use of the installed research capacity (in particular of EU co-funded research infrastructures & facilities). Proposals should outline how the proposed activities will positively induce a change in current practices.

ERA Chair holders should be excellent researchers and research managers in the given field of research, with a proven record of effective leadership. They should establish their own research team fully integrated in the coordinator's institution to significantly improve its research performance in the scientific domain of choice and to be more successful in obtaining competitive funding. The ERA Chair holder should have a position within the organisation/university, professor or similar, that will allow her/him to make appropriate resource allocation decisions, supervise team members and freely apply for research funding. A letter of the head of the institution clearly describing the intended remuneration package of the ERA Chair holder and the criteria on which the level of remuneration has been established, as well as his/her roles, level of responsibility and obligations should be included within the proposal. This will allow for the determination of the commitment of the institution and feasibility of the ERA Chair tasks.

The position of the ERA Chair holder must be open to all EU and non-EU nationals but shall match the profile of an "Established Researcher (R3)" or "Leading Researcher (R4)" as set out in the European Framework for Research Careers . Moreover, given the objectives of the action, internal mobility within the institution hosting the grant is excluded except in exceptional and duly justified cases. The appointment of an ERA Chair holder will be undertaken by the host institution at the beginning of the action and must follow an open, transparent and merit-based recruitment process that will be monitored by the European Commission.

It is expected that the Chair holder commits him/herself for the full duration of the grant. The ERA Chair holder is to be appointed in a full-time position (permanent or non-permanent) in accordance with the national legislation of the institution hosting the grant.

The grant that can have a duration of five years maximum will cover the appointment of the ERA Chair holder and a number of team members (e.g. their salaries, recruitment costs19, administrative costs, travel and subsistence costs).

The grant will also provide a contribution towards measures aimed at facilitating structural changes in the institution (e.g. costs for trainings, meetings, publications and managing Intellectual Property Rights (IPR).While the action does not focus on equipment and consumables, these could be accepted if they constitute only a minor part of the total Horizon 2020 funding requested and are deemed necessary to fulfil the action's specific scope and objective). For grants awarded under this topic and type of action, the following cost categories will be ineligible costs:

- Infrastructure costs;

The respective option of Article 6.5.C of the Model Grant Agreement will be applied.

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

Expected Impact:

- Institutional changes within the ERA Chair host institution allowing for its full participation in the European Research Area.

- Increased attractiveness of the institution for internationally excellent and mobile researchers (including a policy of compliance to the European Research Area priorities like (an open recruitment policy, gender balance, peer review and innovative doctoral training).

- Increased research excellence of the institution in the specific fields covered by the ERA Chair holders illustrated quantitatively and qualitatively through indicators such as expected future publications in peer reviewed journals, collaboration agreements with businesses, intellectual property, new innovative products or services.

- Improved capability to compete successfully for internationally competitive research funding.

Type of Action: Coordination and support action

Budget: 30.00 million EUR

Opening: 26 July 2018

Deadline: 15 November 2018

1. The applicant organisation where the ERA Chair holder will be hosted should be established in a Member State or Associated Country that is ranked below 70% of the EU27 average of the composite indicator on Research Excellence.

The selected corrective threshold of 70% of the EU average has been chosen in line with the particular policy requirements of the measure, to ensure the greatest possible impact through targeting only the lowest performing Member States, and thereby maximising the real value of these actions.

Based on the above threshold, applicant organisations from the following Member States and Associated Countries (subject to valid association agreements of third countries with Horizon 2020) will be eligible to submit proposals (the "low R&I performing" or "Widening" countries):

Member States: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia and Slovenia.

Associated Countries: Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, Former Yugoslav Republic of Macedonia, Georgia, Moldova, Montenegro, Serbia, Tunisia, Turkey and Ukraine.

2. ERA Chairs proposals must be submitted by a single applicant as they are a mono-beneficiary action. The applicant organisation must satisfy the condition set out in point 1 above.

3. The requested EU contribution shall not exceed a maximum of EUR 2.5 million for a period of up to 5 years.

3.4. Pilotmaßnahme Europäischer Innovationsrat

European Innovation Council pilot: EIC Community Platform

An interactive platform for SME Instrument beneficiaries was created under the Horizon 2020 work programme 2016-2017. The duration, functionalities and services provided through this platform will be extended to encompass all SMEs that are EIC grant beneficiaries.

The platform will be linked to platforms offering services provided by InvestHorizon, such as investment-readiness training and introductions to investors, and by Startup Europe, such as the Web Investors Forum, the Accelerator Assembly, and the Crowdfunding Network. It will be supported till at least the end of 2020.

The action will support the extended community platform and its underlying activities, i.e.:

- *Promotion* through online and live interaction with potential investors, large enterprises, and public and private procurers, who will be able to create a profile on the platform for information-sharing and matchmaking.
- *Mentoring* through the creation of matchmaking profiles for mentors and mentees.
- *Participation in events* such as trade-fairs and major innovation or business conferences in Europe.

- *Access to existing services* offered by the Enterprise Europe Network (EEN), the EU Single Access to Finance Portal, the EU IPR Helpdesk, the European Observatory against Infringements of IPR, the Procurement of Innovation Platform, and other offerings at EU, national and regional levels such as the Thematic Smart Specialisation Platforms that could be of interest to participants in the EIC pilot.

- *Integration of data and insights from the Innovation Radar initiative* about EU–funded innovators and innovations, and acquisition of other financial, investment, patents and altmetrics data and analytics. This data will be leveraged to improve links between innovators with specific financing (or other 'go to market') needs and investors.

- *Procurement marketplace* to help SMEs to commercialise their innovations as first clients of public-sector innovation procurers, take advantage of public procurement opportunities, and better understand how the procurement market works and how to bid for procurements. There will also be activities to encourage public procurers to organise open-market consultations before procuring in order to give SMEs enough time to prepare bids and team-up with larger companies when bidding.

- Connection to *Lean LaunchPad* online and face-to-face training courses (Lean LaunchPad® is a widely taught entrepreneurship methodology for testing and developing business models based on querying and learning from potential users and customers).

This is not necessarily an exhaustive list.

Subject-matter of the contracts envisaged: design, evolution and maintenance of online interactive platform; design, implementation and evolution of products and services delivered or deployed via the platform.

Type of action: Public Procurement — several service contracts or extension of existing service contract(s).

Indicative timetable: first quarter of 2018 and first quarter of 2019.

Indicative budget: €1.50 million from the 2018 budget and €1.50 million from the 2019 budget.