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ANNEX 4

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HORIZON 2020

WORK PROGRAMME 2016 – 2017

4. European research infrastructures (including e-Infrastructures).."

(European Commission Decision C (2015) xxx of xx September 2015)

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Introduction

Research infrastructures are facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields. Where relevant, they may be used beyond research, e.g. for education or public services. They include: major scientific equipment (or sets of instruments); knowledge-based resources such as collections, archives or scientific data; e-infrastructures, such as data and computing systems and communication networks; and any other infrastructure of a unique nature essential to achieve excellence in research and innovation. Such infrastructures may be 'single-sited', 'virtual' or 'distributed'.

Research infrastructures play an increasing role in the advancement of knowledge and technology and their exploitation. By offering high quality research services to users from different countries, by attracting young people to science and by networking facilities, research infrastructures help structuring the scientific community and play a key role in the construction of an efficient research and innovation environment. Because of their ability to assemble a 'critical mass' of people, knowledge and investment, they contribute to national, regional and European economic development. Research infrastructures are also key in helping Europe to lead a global movement towards open, interconnected, data-driven and computer-intensive science and engineering. e-Infrastructures will make every European researcher *digital*, increasing creativity and efficiency of research and bridging the divide between developed and less developed regions.

The EU framework programme for Research and Innovation, Horizon 2020, gives high importance to promoting world-class Research Infrastructures, facilitating researcher's access to the infrastructures they need, to further developing and deploying e-infrastructures, and to fostering the innovation potential of research infrastructures with a focus on instrumentation and on reinforcing international cooperation with strategic third country partners. Research infrastructures provide research opportunities and services to researchers in many areas also addressed by other Parts of Horizon 2020, in particular the Parts "Societal Challenges", "Leadership in Enabling and Industrial Technologies" (LEIT), and the other parts of "Excellent Science": "Future and Emerging Technologies", "Marie Skłodowska-Curie" and "European Research Council" actions. This is also reflected in the close links between several of the topics of Research Infrastructures and certain Focus Areas. Furthermore production-level e-infrastructures are able to serve the computing and data needs of any project in the framework programme fostering economies of scale in the use of ICT systems by projects supported by Horizon 2020.

The Horizon 2020 Work Programme for 2016-2017 has been permeated with the political priorities of the new Commission's Agenda, in particular to maximise its contribution to the strengthening of Europe's global competitiveness, the creation of new and sustainable jobs and the promotion of growth.

The Research Infrastructures Work Programme 2016-2017 will put wide emphasis on fostering the long-term sustainability of research infrastructures (including through the optimisation of assessment and evaluation procedures), on expanding the role and impact of research infrastructures in the innovation chain and on maximising the exploitation of data produced and/or collected by research infrastructures.

Research Infrastructure activities also contribute to widening participation to the programme by supporting the development of Regional Partner Facilities in ESFRI projects and integrating activities. The use of European Structural and Investment Funds to build capacities and infrastructures at national and regional level in line with the relevant smart specialisation

strategy is encouraged (further information can be found in section "Specific features for Research Infrastructures").

The projects funded under the e-infrastructure call of the Research Infrastructures Work Programme 2016-2017 will participate in the Pilot on Open Research Data in Horizon 2020 in line with the Commission's Open Access to research data policy for facilitating access, re-use and preservation of research data. Projects have the possibility to opt out of the Pilot. A related new element in Horizon 2020 is the use of Data Management Plans (DMPs) detailing what data the project will generate, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved. The use of a Data Management Plan is required for projects participating in the Open Research Data Pilot. Other projects are invited to submit a Data Management Plan if relevant for their planned research. Further guidance on the Open Research Data Pilot is made available on the Participant Portal.

The projects funded under the other calls of this Work Programme may participate in the Open Research Data Pilot in Horizon 2020 on a voluntary basis.

Call - Development and long-term sustainability of new pan-European research infrastructures

H2020-INFRADEV-2016/2017

This call focuses on developing new world-class research infrastructures. The aim is to facilitate and support the implementation and long-term sustainability of the research infrastructures identified by the European Strategy Forum on Research Infrastructures (ESFRI) as well as of other world-class research infrastructures. These will help Europe respond to grand challenges in science, industry and society. In addition, the next generation of new research infrastructures can be identified through design studies. Support will be provided to:

- the conceptual and technical design of new research infrastructures, which are of a clear European dimension and interest, through a bottom-up approach (deadline and budget 2017);
- the preparatory phases of ESFRI projects, through a targeted approach (deadline and budget 2016);
- the individual support to ESFRI projects and other world-class research infrastructures with established legal structure and governance such as an ERIC through a competitive approach (deadline 2016 and budget 2016-2017);
- a pilot action addressing the federation, networking and coordination of pan-European research infrastructures and clouds for the purpose of increasing research and science data availability and use (deadline and budget 2016).

Proposals are invited against the following topics:

INFRADEV-1-2017: Design Studies

Specific challenge: New leading-edge research infrastructures in all fields of science and technology are needed by the European scientific community in order to remain at the forefront of the advancement of research, and to be able to help industry strengthen its base of knowledge and its technological know-how. The aim of this activity is to support the conceptual and technical design for new research infrastructures which are of a clear European dimension and interest. Major upgrades of existing infrastructures may also be considered if the end result is intended to be equivalent to a new infrastructure.

Scope: Design studies should address all key questions concerning the technical and conceptual feasibility of new or upgraded fully fledged user facilities (proposals considering just a component for research infrastructures are not targeted by this topic). Design studies lead to a 'conceptual design report' showing the maturity of the concept and forming the basis for identifying and constructing the next generation of Europe's and the world's leading research infrastructures. Conceptual design reports will present major choices for design alternatives and associated cost ranges, both in terms of their strategic relevance for meeting today's and tomorrow's societal challenges, and (where applicable) in terms of the technical work underpinning the development of new or upgraded research infrastructures of European interest. All fields of science are considered.

The activities to be performed in a Design Study proposal include both:

- Scientific and technical work, i.e. (1) the drafting of concepts, architecture and engineering plans for the construction, taking into due account resource efficiency and environmental impacts, as well as, when relevant, the creation of prototypes; (2) scientific and technical work to ensure that the scientific user communities exploit the new facility from the start with the highest efficiency.
- Conceptual work, i.e. (1) plans to coherently integrate the new infrastructure into the European landscape of related facilities in accordance, whenever appropriate, with the Community objective of balanced territorial development; (2) the estimated budget for construction and operation; (3) plans for an international governance structure; (4) the planning of research services to be provided at international level.

The main output of a design study will be the conceptual design reports for a new or upgraded research infrastructure.

The Commission considers that proposals requesting a contribution from the EU of between EUR 1 and 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:

- Funding bodies for research infrastructures become aware of the strategic and funding needs of the scientific community.
- Policy bodies at the national level (e.g. funding bodies, governments), at European level (e.g. ESFRI) and internationally (e.g. the Group of Senior Officials on Research Infrastructures – GSO) have a sound decision basis to establish long-range plans and roadmaps for new research infrastructures of pan-European or global interest.
- The technical work carried out under this topic will contribute to strengthening the technological development capacity and effectiveness as well as the scientific performance, efficiency and attractiveness of the European Research Area.

Type of action: Research and innovation actions

The conditions related to this topic are provided at the end of this call and in the General Annexes.

INFRADEV-2-2016: Preparatory Phase of ESFRI projects

Specific challenge: The ESFRI roadmap, updated periodically, identifies the needs of the European scientific community in terms of research infrastructures. However, inclusion in the ESFRI roadmap does not guarantee that these needed infrastructures will be built. Before proceeding with the construction and/or implementation of the identified infrastructures, many preliminary decisions need to be taken with respect to issues such as the identification of funders, the financial plan for sustainability, the governance by involved stakeholders, the site and legal form of the managing organisation, the architecture and the service policies. The aim of this activity is to provide catalytic and leveraging support for the preparatory phase leading to the construction of new research infrastructures or major upgrades of existing ones.

Scope: The preparatory phase aims at bringing the project for the new or upgraded research infrastructure identified in the ESFRI roadmap to the level of legal, financial, and, where applicable, technical maturity required for implementing it.

Proposal consortia should involve all the stakeholders necessary to move the project forward, to take the decisions, and to make the financial commitments, before construction can start (e.g. national/regional ministries/governments, research councils, funding agencies, in

particular, but not limited to, from the countries that have already declared their commitment in the application to ESFRI). Appropriate contacts with ministries and decision-makers should be continuously reinforced, thus further strengthening the consortia. Operators of research facilities, research centres, universities, and industry may also be involved whenever appropriate. Technical work should be carried out when necessary to complete the final technical design, providing a sound technical base for establishing a cost baseline and detailed financial planning. The financial needs of the project should be mapped out to the extent necessary for funding agencies to establish their own medium- and long-term financial planning.

The preparation of the legal and financial agreements (including site, governance, internal rules, financing of the new research infrastructures) is one of the main activities and deliverables and must be finalised before the end of the project (e.g., through the signature of a Memorandum of Understanding).

If the preparatory phase includes technical work it should be implemented as a *Research and innovation action*, otherwise as a *Coordination and support action*. The detailed list of activities that can be included in a preparatory phase proposal is given in part A of the section "Specific features for Research Infrastructures".

Proposals will address research infrastructures which enter the ESFRI roadmap in 2016 and that are willing to set up a pan-European governance and legal structure (e.g. in the form of an ERIC or any suitable structures at European or international level).

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

Expected impact:

Proposals will raise the technical, legal and financial maturity of projects for new research infrastructures to the level required to enable the construction work to start.

- Funding bodies are able to take funding decisions and to conclude the legal agreements necessary for the construction of new research infrastructures.
- The technical work carried out under this topic will contribute to strengthening the technological development capacity and effectiveness as well as the scientific performance, efficiency and attractiveness of the European Research Area.
- A landscape of first-class sustainable RIs and services, open to researchers, industry, and other interested groups such as policy makers and the public, is progressively established, which will impact on the acceleration of scientific discovery as well as on innovation and competitiveness.

Type of action: Coordination and support actions or Research and innovation actions

The conditions related to this topic are provided at the end of this call and in the General Annexes.

INFRADEV-3-2016/2017: Individual support to ESFRI projects and other world-class research infrastructures

Specific challenge: The new research infrastructures under development at European level, such as those identified in the ESFRI roadmap, are advancing in their implementation phase and/or starting their operation. The initial phase is, however, the most delicate and difficult one for new pan-European infrastructures in the process to become fully operational as financial sustainability must be proved and the trust and awareness of users must be earned.

Scope: Under the 2016-2017 work programme this topic will target the long-term sustainability of new research infrastructures, ESFRI projects and other world-class research infrastructures in Europe, with established governance and legal structure, notably on the basis of the European Research Infrastructure Consortium (ERIC) or any suitable structure at European or international level. Support will be provided to activities aimed at ensuring long-term sustainability, including enlargement of the membership, international cooperation[1], limited pilots for testing and improving user services to increase reliability and create trust, definition of service level agreements and business/funding plan, outreach, and technology transfer activities.

Specific attention will be given to the interaction with industry and SMEs. Activities may also foster the development of Regional Partner Facilities. The detailed list of activities that can be supported under this topic is given in part B of the section "Specific features for Research Infrastructures".

The Commission considers that proposals requesting a contribution from the EU of between EUR 2 and 5 million would allow this challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact:

This activity will:

- contribute to providing Europe with a comprehensive landscape of sustainable Research Infrastructures helping to respond to challenges in science, industry and society;
- strengthen the ERA position and role in the global research environment;
- reinforce the partnership between the Commission, Member States, Associated Countries and relevant stakeholders in establishing pan-European research infrastructures;
- enhance the role of the Union in international organisations and multilateral fora;
- support progress towards the development of global research infrastructures;
- enable researchers to address societal challenges with a global dimension such as climate change;
- foster capacity-building and Research Infrastructure human capital development in targeted/relevant regions.

Type of action: Coordination and Support actions

The conditions related to this topic are provided at the end of this call and in the General Annexes.

INFRADEV-4-2016 – Towards a European Research and Science Cloud

Specific challenge: Research Infrastructures such as the ones on the ESFRI roadmap and others, are characterized by the very significant data volumes they generate and handle. These data are of interest to thousands of researchers across scientific disciplines and to other potential users via Open Access policies. Effective data preservation and open access for immediate and future sharing and re-use is a fundamental component of today's research infrastructures and Horizon 2020 actions. In this context, European research stakeholders make increasing use of cloud services to effectively handle such data.

[1] In line with the strategy for EU international cooperation in research and innovation (COM(2012)497)

Scope: The aim of this topic is the launch of a pilot action that should demonstrate how wide availability of scientific data and data-analysis services for European researchers can be ensured through a cloud infrastructure. The action will be based on the recommendations of the High Level Expert Group for the European Research and Science Cloud.

Proposals should address the federation, networking and coordination of existing research infrastructures and scientific clouds for the purpose of increasing data findability, accessibility and interoperability, improving the services provided to research communities, and facilitating re-use of data by a wider user community. Trust, easy accessibility and use by researchers should be duly taken into account. Particular attention should be paid to storage, access and re-use needs for data and knowledge from Horizon 2020 projects, as well as to the needs of the 'long tail of science', including orphaned scientific communities.

The action should build on existing infrastructures and design a stakeholder driven governance framework, with the involvement of the research user community, the research infrastructures and the research funding bodies to ensure its sustainability. Links with related national and European (e.g. Helix Nebula) initiatives should be established.

The Commission considers that proposals requesting a contribution from the EU of between EUR 5 and 10 million would allow this topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact:

- Facilitate access of researchers across all scientific disciplines to the broadest possible set of data and to other resources needed for data driven science to flourish.
- Provide a governance and business model that sets the rules for the use of data, deals with issues related to privacy, sensitivity, copyright and security and oversees the provision of services (business and governance layer).
- Create a cross-border and multi-disciplinary open innovation environment for research data, knowledge and services with engaged stakeholders and organizations.
- Foster the establishment of global standards, ontologies and interoperability for scientific data.

Type of action: Research and Innovation actions

CONDITIONS FOR THIS CALL

Opening date(s)[2]: 10/12/2015 for INFRADEV-2-2016 and INFRADEV-3-2016/2017
22/03/2016 for INFRADEV-4-2016
01/12/2016 for INFRADEV-1-2017

Deadline(s)[3]:

INFRADEV-2-2016 and INFRADEV-3-2016/2017	30/03/2016 at 17.00.00 Brussels time
INFRADEV-4-2016	22/06/2016 at 17.00.00 Brussels time
INFRADEV-1-2017	29/03/2017 at 17.00.00 Brussels time

[2] The Director-General responsible may decide to open the call up to one month prior to or after the envisaged date of opening.

[3] The Director-General responsible may delay this deadline by up to two months.

Overall indicative budget: EUR 80.00 million from the 2016 budget and EUR 60.00 million from the 2017 budget[4]

	2016 EUR million	2017 EUR million	
INFRADEV-1-2017		20.00	Single stage
INFRADEV-2-2016	40.00		Single stage
INFRADEV-3-2016/2017	30.00	40.00	Single stage
INFRADEV-4-2016	10.00		Single stage

Eligibility and admissibility conditions: The conditions are described in parts B and C of the General Annexes to the work programme.

Evaluation criteria, scoring and threshold: The criteria, scoring and threshold are described in part H of the General Annexes to the work programme with the following exceptions:

INFRADEV-1-2017, INFRADEV-2-2016 implemented as a RIA and INFRADEV-4-2016	For the criterion Impact: • The extent to which the outputs of the project contribute at the European and/or international level to the expected impacts listed in the work programme under the relevant topic; • Where relevant, any other impacts that would strengthen the competitiveness and growth of companies by developing innovations meeting European and/or global needs and markets, enhance or protect the environment, or bring important benefits for society; • Quality of the proposed measures to exploit and disseminate the project results (including, where relevant, management of IPR), and to manage research data where relevant. • Quality of the proposed measures to communicate the project activities and results to different target audiences.

Evaluation procedure: The procedure for setting a priority order for proposals with the same score is given in part H of the General Annexes. The full evaluation procedure is described in the relevant guide[5] published on the Participant Portal.

- Indicative timetable for evaluation and grant agreement:

	Information on the outcome of the evaluation (*single stage*)	Indicative date for the signing of grant agreements
All topics	Maximum 5 months from the final date for submission.	Maximum 8 months from the final date for submission.

Consortium agreements: In line with the Rules for Participation and the Model Grant Agreement, participants in Research and Innovation Actions are required to conclude a consortium agreement. However, for mono-beneficiary actions resulting from this call under topic INFRADEV-3-2017, participants are not required to conclude a consortium agreement.

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5 See: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/pse/h2020-guide-pse_en.pdf.

Call - Integrating and opening research infrastructures of European interest

H2020-INFRAIA-2016/2017

This call focuses on opening up key national and regional research infrastructures to all European researchers from both academia and industry and ensuring their optimal use and joint development.

In addition to serving basic science challenges, Integrating Activities target research infrastructures, ranging across all fields of science and technology, needed to support the EU political priorities and to address the Societal Challenges, including Focus Areas. They also target research infrastructures needed to gain leadership in the industrial and enabling technology.

ESFRI and other world-class research infrastructures are not specifically targeted by this call. Nevertheless, where relevant, they can participate in an integrating activity together with other key national and regional research infrastructures.

Proposals are invited against the following topics:

INFRAIA-1-2016/2017: Integrating Activities for Advanced Communities

Specific challenge:

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

Scope:

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

An Integrating Activity will mobilise a comprehensive consortium of several key research infrastructures[6] in a given field as well as other stakeholders (e.g. public authorities, technological partners, research institutions) from different Member States, Associated Countries and other third countries when appropriate, in particular when they offer complementary or more advanced services than those available in Europe.

Funding will be provided to support, in particular, the trans-national and virtual access provided to European researchers (and to researchers from Third Countries under certain conditions), the cooperation between research infrastructures, scientific communities, industry and other stakeholders, the improvement of the services the infrastructures provide, the harmonisation, optimisation and improvement of access procedures and interfaces.

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

[6] Exceptionally, the consortium may include only one research infrastructure providing access, if this facility is of a truly unique nature.

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

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

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

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

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

Integrating Activities should also organise the efficient curation, preservation and provision of access to the data collected or produced under the project, defining a data management plan. Data management (including ethics and privacy issues), interoperability, as well as advanced data and computing services should be addressed where relevant. To this extent, proposals should build upon the state of the art in ICT and e-infrastructures for data, computing and networking, working in cooperation with e-infrastructure service providers.

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

Integrating Activities are expected to duly take into account all relevant ESFRI research infrastructures to exploit synergies, to reflect on sustainability and to ensure that rationally designed, comprehensive and coherent overall concepts for European Infrastructures are being pursued.

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

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

The Commission considers that proposals requesting a contribution from the EU of up to EUR 10 million, of which maximum EUR 3.5 million for activities other than access, would allow this topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

On the basis of a multiannual plan drafted taking into account the assessment and the timing of previous grants as well as political priorities and needs, in term of research infrastructures services, emerging from other parts of Horizon 2020, this work programme invites proposals addressing the following areas listed under the different domains:

Biological and Medical Sciences

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Energy

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Environmental and Earth Sciences

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Mathematics and ICT

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Engineering, Material Sciences, and Analytical facilities

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Physical Sciences

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Social Sciences and Humanities

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Expected impact:

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

Type of action: Research and innovation actions

The conditions related to this topic are provided at the end of this call and in the General Annexes.

INFRAIA-2-2017: Integrating Activities for Starting Communities

Specific challenge:

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

Scope:

A 'Starting Community' has never been supported for the integration of its infrastructures under FP7 or Horizon 2020 calls, in particular within an integrating activity.

An Integrating Activity will mobilise a comprehensive consortium of several key research infrastructures[7] in a given field as well as other stakeholders (e.g. public authorities, technological partners, research institutions) from different Member States, Associated Countries and other third countries when appropriate, in particular when they offer complementary or more advanced services than those available in Europe.

Funding will be provided to support, in particular, the trans-national and virtual access provided to European researchers (and to researchers from Third Countries under certain conditions), the cooperation between research infrastructures, scientific communities, industries and other stakeholders, the improvement of the services the infrastructures provide, the harmonisation, optimisation and improvement of access procedures and interfaces.

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

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

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

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

The research infrastructures of a 'Starting Community' usually show a limited degree of coordination and networking at present. The strongest impact of an integrating activity is expected typically to arise from a focus on networking, standardisation and establishing a common access procedure for trans-national and/or virtual access provision.

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

Integrating Activities should also organise the efficient curation, preservation and provision of access to the data collected or produced under the project, defining a data management plan. Data management, interoperability (definition of metadata and ontologies) as well as advanced data and computing services should be addressed where relevant. To this extent, proposals should build upon the state of the art in ICT and e-infrastructures for data, computing and networking, working in cooperation with e-infrastructure service providers.

[7] Exceptionally, the consortium may include only one research infrastructure providing access, if this facility is of a truly unique nature.

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

Integrating Activities are expected to duly take into account all relevant ESFRI research infrastructures to exploit synergies, to reflect on sustainability and to ensure that rationally designed, comprehensive and coherent overall concepts for European Infrastructures are being pursued.

As the scope of an Integrating Activity is to ensure coordination and integration between all the key European infrastructures in a given field and to avoid duplication of effort, at most one proposal per area is expected to be submitted.

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

Integrating activities for starting communities range across all areas of science and technology. Proposals should not restrict their services to too narrow research fields and should address the wider scientific communities, even multidisciplinary ones, which can be served by the involved sets of research infrastructures.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 5 million, of which maximum EUR 3.5 million for activities other than access, would allow this topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact:

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

- When applicable, the socio-economic impact of past investments in research infrastructures from the European Structural and Investment Funds is enhanced.

Type of action: Research and innovation actions

The conditions related to this topic are provided at the end of this call and in the General Annexes.

CONDITIONS FOR THIS CALL

Opening date(s)[8]: 10/12/2015 for all topics
01/12/2016 for second stage of INFRAIA-2-2017

Deadline(s) [9]:

INFRAIA-1-2016/2017	30/03/2016 at 17.00.00 Brussels time
INFRAIA-2-2017 INFRAIA-1-2016/2017	30/03/2016 at 17.00.00 Brussels time first stage 29/03/2017 at 17.00.00 Brussels time second stage

Overall indicative budget: EUR 100.00 million from the 2016 budget and EUR 100.00 million from the 2017 budget[10]

	2016 EUR million	2017 EUR million	
INFRAIA-1-2016/2017	100.00	60.00	Single stage
INFRAIA-2-2017		40.00	Two stage

Eligibility and admissibility conditions: The conditions are described in parts B and C of the General Annexes to the work programme, with the following exceptions:

INFRAIA-1-2016/2017 and INFRAIA-2-2017	Given the specific nature of this topic, specific eligibility conditions, in addition to the standard eligibility conditions for Research and Innovation Action, apply: all the three types of activities: networking, access and joint research activities shall be included in the proposal. Please read carefully the provisions under the part D of the section "Specific features for Research Infrastructures" before the preparation of your application. Under these topics, legal entities established in Australia, Brazil, Canada, China, India, Japan, Russia, Mexico and USA, which provide access to their research infrastructures to researchers from Members States and Associated countries, are eligible for funding from the Union.

Evaluation criteria, scoring and threshold: The criteria, scoring and threshold are described in part H of the General Annexes to the work programme, with the following exceptions:

INFRAIA-1-2016/2017 and INFRAIA-2-2017	For the criterion Excellence, in addition to its standard sub-criteria, the following aspects will also be taken into account; • The extent to which the Networking Activities will foster a culture of co-operation between the participants and other relevant stakeholders. • The extent to which the Access Activities (Trans-national Access and/or Virtual activities) will offer access to state-of-the-art infrastructures, high quality services, and will enable users to conduct excellent research.

[8] The Director-General responsible may decide to open the call up to one month prior to or after the envisaged date of opening.

[9] The Director-General responsible may delay this deadline by up to two months.

[10] ---

	• The extent to which the Joint Research Activities will contribute to quantitative and qualitative improvements of the services provided by the infrastructures. For the criterion Impact: • The extent to which the outputs of the project should contribute at the European and/or international level to the expected impacts listed in the work programme under the relevant topic; • Where relevant, any other impacts that would strengthen the competitiveness and growth of companies by developing innovations meeting European and/or global needs and markets, enhance or protect the environment, or bring important benefits for society; • Quality of the proposed measures to exploit and disseminate the project results (including, where relevant, management of IPR), and to manage research data where relevant. • Quality of the proposed measures to communicate the project activities and results to different target audiences.

Evaluation procedure: The procedure for setting a priority order for proposals with the same score is given in part H of the General Annexes. The full evaluation procedure is described in the relevant guide[11] published on the Participant Portal.

- Indicative timetable for evaluation and grant agreement:

For single stage procedure:

- Information on the outcome of the evaluation: Maximum 5 months from the final date for submission; and
- Indicative date for the signing of grant agreements: Maximum 8 months from the final date for submission.

For two-stage procedure:

- Information on the outcome of the evaluation: Maximum 5 months from the final date for submission for the first stage and maximum 5 months from the final date for submission for the second stage; and
- Indicative date for the signing of grant agreements: Maximum 8 months from the final date for submission of the second stage proposals.

Consortium agreements: In line with the Rules for Participation and the Model Grant Agreement, participants in Research and Innovation Actions are required to conclude a consortium agreement prior to grant agreement.

[11] See: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/pse/h2020-guide-pse_en.pdf.

Call - Fostering the innovation potential of Research Infrastructures

H2020-INFRAINNOV-2016/2017

This call focuses on fostering the innovation potential of research infrastructures.

In addition to this call, innovation is mainstreamed in all relevant parts of the work programme.

Proposals are invited against the following topics:

INFRAINNOV-1-2017 – Fostering co-innovation for future detection and imaging technologies

Specific challenge: Research infrastructures, as providers of advanced services and as procurers of leading-edge technologies, have an innovation potential that has not always been sufficiently exploited. Opportunities provided by the development of components, instruments, services and knowledge for the implementation and upgrade of research infrastructures, could be better exploited to push the limits of existing technologies. There is a clear innovation potential associated with procurement from industry during the construction and upgrade of research infrastructures.
A co-innovation approach to continuously generate, scale and deploy breakthrough technologies with market and social value needs to be adopted by research infrastructures.

Scope: The aim is the establishment of an open initiative oriented towards a novel research and innovation collaborative framework engaging both the research communities in Europe using Research Infrastructures and the industry (including SMEs), for the mutual benefit of these stakeholders and the European society at large.

This initiative should address:

- The identification of a wide spectrum of technology opportunities with breakthrough potential across Europe; the assessment of the feasibility and scalability of the identified opportunities; the selection and clustering of those opportunities with a clear potential for industrial implementation; and the support of those opportunities towards industrial applications having societal value;
- The support of technology and innovation transfer and joint development measures of high-tech components;
- The enabling of the best conditions for full exploitation by industrial partners of the innovation potential of Research Infrastructures (e.g. in the field of instrumentation and detectors);

As a pilot initiative, the proposals should mainly address the development of future detection and imaging technologies, which have applications in the fields of medicine, manufacturing industry, aerospace, ICT, engineering and beyond, and should constitute a driver enabling the transfer of fundamental research towards industrial application.

This action allows for the provision of financial support to third parties in line with the conditions set out in Part K of the General Annexes. The financial support to third parties is indeed the primary aim of the action. The Commission considers that proposals requesting a contribution from the EU of up to EUR 20 million would allow this topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact:

This activity will:

- establish a co-innovation platform in the field of detection and imaging technologies
- provide financial support and guidance towards industrial applicability to the identified co-innovation opportunities
- increase the capacity to generate, absorb and use new technologies in Europe;
- enhance the innovation capability of European Research Infrastructures;
- increase the involvement of industry (including SMEs) in the development of research infrastructures, raising the technological level and competitiveness of European companies and generating market opportunities for them;
- raise the awareness of industry (including SMEs) regarding opportunities offered by research infrastructure to improve their products, e.g. as experimental test facilities, innovation hubs, knowledge-based centres;
- support the integration of research infrastructures into local, regional and global innovation systems;
- when applicable, the socio-economic impact of past investments in research infrastructures from the European Structural and Investment Funds is enhanced.

Type of action: Research and innovation actions

The conditions related to this topic are provided at the end of this call and in the General Annexes.

INFRAINNOV-2-2017 – Support to Technological Infrastructures

Specific challenge: Pan-European Research Infrastructures use more and more sophisticated technologies that can only be hosted in large-scale platforms combining R&D, integration and validation. These platforms can be viewed as Technological Infrastructures: they form a distributed network across Europe and provide Research Infrastructures with advanced key technologies and integration services. They also provide longer-term visibility and involvement of industry in scientific and technological advancements and therefore ensure greater socio-economic impact. The coordination of Technological Infrastructures working in a given technological domain and their networking will contribute to harmonise their operation conditions and increase their operation efficiency. This will permit the creation of a more efficient integrated ecosystem between academic laboratories, focussed on technological R&D needs of Research Infrastructures, large companies as well as SMEs, motivated by the innovative environment and the market opportunities created by the Research Infrastructure needs. Being focussed on innovation and on higher Technology Readiness Level (TRL) than usually targeted by Research Infrastructures, these networks of Technological Infrastructures should contribute to bridging the gap between the academic world and industry, and to the training of high-level engineers and technological scientists in Europe.

Scope: Funding will be provided for the coordination and networking of Technological Infrastructures involving research infrastructures, industry and SMEs.

Proposals should address:

- the definition of key techniques and trends which are crucial for the further development of Research Infrastructures, in close partnership with the industrial partners, especially with innovative SMEs;

- the definition of roadmaps and/or strategic agendas together with industrial sector actors for key technologies for R&D and for the construction and upgrade of Research Infrastructures as well as for key technologies to be explored by industries;
- the identification of the domains of societal applications and potential markets beyond Research Infrastructures;
- the implementation of a strategy addressing the training of young engineers, technicians and scientists in an environment of strong industrial relevance and scientific excellence;
- the exchange of good practices between user communities and managers of research infrastructures as regard benchmarking performance of technology platforms, harmonisation of tests, standards, reference materials, interoperability and data handling.

Proposals should cover a broad technological domain of interest for pan European Research Infrastructures such as but not restricted to components for accelerator based facilities, laser, high-field magnets, vacuum and cryogenic systems, or components for oceanic investigation under extreme conditions (e.g. underwater vehicles and associated robotics, autonomous instrumented mobile floats, deep sea stations).

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

Expected impact:

The implementation of a coordinated ecosystem of Technological Infrastructures as key components of the European Research Infrastructure landscape will help ensure both the scientific competitiveness of European Research Infrastructures in the long-term and the further development of innovative companies.

In particular this activity will:

- Establish technology roadmaps and identify market opportunities shared between Research Infrastructures and Technology Infrastructures and socio-economic partners for a better positioning of Europe in the global Research Infrastructure sector;
- Facilitate the creation of both large and viable markets and structuring industrial partners in a critical mass to enable European industry to respond to demands from international Research Infrastructures;
- Established links between universities and industrial companies of such a technology cluster to ensure the dissemination of the acquired knowledge and the training of top-level engineers and technicians;
- Support the integration of research infrastructures into local, regional and global innovation systems; the competitive nature of such a technology cluster-based approach will facilitate the development of synergies and complementarities across Europe and avoid duplication of work.

Type of action: Coordination and support actions

The conditions related to this topic are provided at the end of this call and in the General Annexes.

CONDITIONS FOR THIS CALL

Opening date(s)[12]: 10/12/2015 for INFRAINNOV-1-2016
01/12/2016 for INFRAINNOV-2-2017

Deadline(s) [13]:

INFRAINNOV-1-2017 and INFRAINNOV-2-2017	29/03/2017 at 17.00.00 Brussels time

Overall indicative budget: EUR 30.00 million from the 2017 budget[14]

	2016 EUR million	2017 EUR million	
INFRAINNOV-1-2017		20.00	Single stage
INFRAINNOV-2-2017		10.00	Single stage

Eligibility and admissibility conditions: The conditions are described in parts B and C of the General Annexes to the work programme.

Evaluation criteria, scoring and threshold: The criteria, scoring and threshold are described in part H of the General Annexes to the work programme.

Evaluation procedure: The procedure for setting a priority order for proposals with the same score is given in part H of the General Annexes. The full evaluation procedure is described in the relevant guide[15] published on the Participant Portal.

- Indicative timetable for evaluation and grant agreement:

	Information on the outcome of the evaluation (*single stage*)	Indicative date for the signing of grant agreements
All topics	Maximum 5 months from the final date for submission.	Maximum 8 months from the final date for submission.

Consortium agreements: In line with the Rules for Participation and the Model Grant Agreement, participants in an action are required to conclude a consortium agreement prior to grant agreement.

[12] The Director-General responsible may decide to open the call up to one month prior to or after the envisaged date of opening.

[13] The Director-General responsible may delay this deadline by up to two months.

[14] ---

[15] See: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/pse/h2020-guide-pse_en.pdf.

Call - Support to policy and international cooperation

H2020-INFRASUPP-2016/2017

This call focuses on reinforcing European research infrastructures policy and international cooperation.

In addition to this call, development of policy and international cooperation are encouraged in any proposal where these activities appear relevant.

Proposals are invited against the following topics:

INFRASUPP-1-2016 – Policy measures for research infrastructures

Specific challenge: In the context of the communication for a reinforced ERA partnership for excellence and growth[16], the focus of this action is related to the effective investment and use of research infrastructures.

Scope: Proposals will address one of the following areas:

- Support Research Infrastructure policy development in terms of exchange of best practices for national Roadmap drafting and evaluation procedures in order to promote comparability and synchronisation of national procedures. The proposals shall foresee the conduction of an analysis of existing national roadmaps so to extrapolate common trends that could be then proposed as best practices in terms of criteria for inclusion, cross cutting / multi-disciplinary approaches. The activity should foresee, amongst other, the organisation of dedicated workshops with the relevant key players both at national and European level (with specific reference to ESFRI and the e-IRG) for validation of the findings and recommendations.
- Develop a model describing the socio-economic leverage of Research Infrastructures in terms of impact of the financial investment for the different types of Infrastructures. The model should be applicable in a broad range of scientific domains. Major key international players should be involved. The model should support national budget planning exercises for research.
- Support the development of a comprehensive database on research infrastructures of pan-European relevance in Europe, targeted at policy-makers. A sustainable funding model should be presented in the proposal for ensuring the availability and accessibility of this database beyond the EU grant. The database should be useable as a tool to support the development of a European strategy on research infrastructures. As such, the set of information to be collected should be agreed and validated by the Member States. The proposers should develop and update a portal where detailed information on the research infrastructures will be made available. The proposal should build on the experience gained in the Seventh Framework Programme MERIL (Mapping of European Research Infrastructure Landscape) project.

Expected impact: This activity will:

- Strengthen the development of a consistent and dynamic European Research Area policy for research infrastructures;

[16] COM (2012) 392 final

- Facilitate the exchange of experiences and good practices between the national and/or regional policies and programmes;
- Enhance partnerships between policy makers, funding bodies, academia and industry and promote the development of appropriate monitoring tools for decision making;
- Contribute to the emergence of sustainable approaches for the provision of cross-disciplinary research services;
- Encourage the pooling of resources between infrastructure operators at European level in order to face the grand challenges and to foster a culture of co-operation between them, spreading good practices and encouraging infrastructures to develop in complementary ways.

A balanced coverage of the various areas is expected as outcome of this topic. The Commission considers that proposals requesting a contribution from the EU of up to EUR 1.5 million would allow this topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Type of action: Coordination and support actions

The conditions related to this topic are provided at the end of this call and in the General Annexes.

INFRASUPP-2-2017 – International cooperation for research infrastructures

Specific challenge:

Following the communication of the Commission on International Cooperation in Research and Innovation (COM(2012)497), international cooperation for research infrastructures is needed with a number of key third countries/regions seen as strategic for the development, exploitation and management of world-class research infrastructures necessary to address research challenges with a global dimension.

Scope: In this context, the research infrastructure action will focus its activities on international cooperation in three different but complementary ways, as required: bilaterally with a single third country at policy level; multi-laterally with different third countries, targeting specific research and innovation aspects of research infrastructures of common interest in one area of science and technology; multi-laterally with different third countries if a specific effort is required in the context of a specific world class research infrastructure.

Proposals will address one of the following areas:

- Conduct an International landscaping exercise for Research Infrastructures to support the EU strategy of International cooperation in this field. Such exercise should build on the ESFRI landscaping exercise. The proposals should demonstrate the added value of the pan European investments in terms of establishing, as appropriate, complementarities to non-European initiatives and should link, as appropriate, to the relevant European and International bodies (i.e. ESFRI, GSO, OECD/GSF).
- Support to trans-disciplinary bilateral cooperation on research infrastructures with Africa. The proposal will build on the past experience and achievements gained in the FP7 project PAERIP (Promoting African – European Research Infrastructure Partnerships), taking also into account the recommendations deriving from the structured dialogues that have been set up between the EU and Africa such as the High Level Policy Dialogue (HLPD) that has initially focused on food and nutrition security and sustainable agriculture.

Proposals should allow to further landscape the research infrastructure dimension in Africa and identify domains in which cooperation between research infrastructures would be beneficial to consequently developing roadmaps for cooperation. The proposals should in particular:

- Identify and promote opportunities (access and data sharing) available to European scientists in these research infrastructures;
- Help developing better coordination and cooperation of European research infrastructures with their non-European counterparts, ensuring their global interoperability and reach, and pursuing international agreements on the reciprocal use, openness or co-financing of infrastructures;

Appropriate involvement of African participants is encouraged and will be taken into account during evaluation.

- Support the cooperation between the EU and international strategic partners for the development of global research infrastructures and, or an enhancement of the current interaction among Research Infrastructures in the global arena. The proposals should build on the requirements deriving from existing policy dialogues such as the Group of Senior Officials (GSO), involve the appropriate high-level policy makers and improve the global outreach of European Research Infrastructures.
- Support the training needs of the Synchrotron light for Experimental Science and Applications (SESAME) facility in Jordan and the staff exchange with other European light source infrastructures to ensure its optimal use by the research community for world-class research.

A balanced coverage of the various areas is expected as outcome of this topic. The Commission considers that proposals requesting a contribution from the EU of up to EUR 1.5 million for the first three areas and up to EUR 2 million for the latter one would allow this topic to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected impact:

This activity will help to:

- Develop cooperation with key international partners for research infrastructures;
- Contribute to the development of a competitive high performance ERA in the global research environment;
- Reinforce partnership between the Commission, the Member States and relevant stakeholders in this field;
- Enhance the role of the Union in international organisations and multilateral fora;
- Support progress towards the development of global research infrastructures;
- Contribute to capacity building and research infrastructures human capital development in targeted/relevant regions.

Type of action: Coordination and support actions

The conditions related to this topic are provided at the end of this call and in the General Annexes.

CONDITIONS FOR THIS CALL

Opening date(s)[17]: 10/12/2015 for INFRASUPP-1-2016
01/12/2016 for INFRASUPP-2-2017

Deadline(s) [18]:

INFRASUPP-1-2016	30/03/2016 at 17.00.00 Brussels time
INFRASUPP-2-2017	29/03/2017 at 17.00.00 Brussels time

Overall indicative budget: EUR4.50 million from the 2016 budget and EUR 6.50 million from the 2017 budget[19]

	2016 EUR million	2017 EUR million	
INFRASUPP-1-2016	4.50		Single stage
INFRASUPP-2-2017		6.50	Single stage

Eligibility and admissibility conditions: The conditions are described in parts B and C of the General Annexes to the work programme.

Evaluation criteria, scoring and threshold: The criteria, scoring and threshold are described in part H of the General Annexes to the work programme.

Evaluation procedure: The procedure for setting a priority order for proposals with the same score is given in part H of the General Annexes. The full evaluation procedure is described in the relevant guide[20] published on the Participant Portal.

- Indicative timetable for evaluation and grant agreement:

	Information on the outcome of the evaluation (*single stage*)	Indicative date for the signing of grant agreements
All topics	Maximum 5 months from the final date for submission.	Maximum 8 months from the final date for submission.

Consortium agreements: In line with the Rules for Participation and the Model Grant Agreement, participants in an action are required to conclude a consortium agreement prior to grant agreement.

[17] The Director-General responsible may decide to open the call up to one month prior to or after the envisaged date of opening.

[18] The Director-General responsible may delay this deadline by up to two months.

[19] --

[20] See: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/pse/h2020-guide-pse_en.pdf.

Other actions[21]

External expertise

This action will support:

- The use of appointed independent experts for the evaluation of project proposals and, where appropriate, for the monitoring of running projects.
- The use of appointed independent experts for the interim evaluation of the Research Infrastructures Part of Horizon 2020.
- The use of independent experts to advise on the design and implementation of EU research policy and for the assessment of ERIC applications, as required under the ERIC Regulation[22]. A special allowance of EUR 450/day will be paid to the experts appointed in their personal capacity who act independently and in the public interest.

Type of action: Expert contracts

Indicative budget: **EUR 1.6 million from the 2016 budget and EUR 1.5 million from the 2017 budget**

[21] ---.

[22] Council Regulation (EC) No 723/2009 of 25 June 2009 on the Community Legal Framework for a European Research Infrastructure Consortium.

Budget

	2016 Budget EUR million[23]	2017[24] Budget EUR million
Calls		
Other Actions		
Estimated total budget		
Contribution to horizontal activities (08.020500)		
Estimated total budget for the horizontal activities		

Estimated total budget including horizontal activities		

[23] The budget figures given in this table are rounded to two decimal places.

[24] ----

Specific features for Research Infrastructures

This section provides, for different types of projects supported under the Research Infrastructures calls for proposals, further conditions and requirements that applicants should fulfil when drafting a proposal. The compliance to these provisions will be taken into account during evaluation. Information on synergies with the European Structural and Investment Funds (ESIF) is also provided below.

The European Structural and Investment Funds will invest up to EUR 90 billion in innovation and research in the period 2014-2020, including into the development of research and innovation capacities and infrastructures. Therefore, Article 20 of the Horizon 2020 Regulation and Article 37 of the Rules for Participation encourage synergies between Horizon 2020 and other European Union funds, such as European Structural and Investment Funds.

Synergies do not mean to replace national or private funding by ESIF or to combine them for the same cost item in a project. Synergies mean to expand the scope and impact of both funds in terms of scientific excellence and place-based socio-economic development respectively. Examples could be the development and equipment of innovation infrastructures or the fostering of innovation skills through ESIF that enable the participation in a Horizon 2020 project. ESIF can also be used to expand the support and advisory services for potential Horizon 2020 participants. ESIF can also help deploying innovative solutions stemming from Horizon 2020, e.g. through public procurement in the fields of environment, transport, health and energy.

Applicants are therefore invited to identify the smart specialisation fields of their EU Member State or region[25] and explore potential for synergies with the relevant Managing Authorities in charge of the ESI Funds in their territory[26].

A. Preparatory phase proposals

Preparatory phase proposals should cover one or more of the following activities:

- Legal work, i.e. (1) for the setting-up, construction and operation of the research infrastructure; and (2) for drafting an agreement between committed countries, in the form of a 'signature-ready' document for the setting-up and the actual implementation.
- Management and logistical work, i.e. (1) plans, in terms of construction (or major upgrade) and operation of the new research infrastructure; (2) planning (timing, resources) of staff recruitment to operate the new facility; (3) organisation of the logistic support for researchers, including informatics, etc.;
- Governance work, i.e. plans, in terms of decision-making, management structure, advisory body, IPRs, ethical issues, access rules for researchers, etc.;
- Financial work, i.e. (1) the financial arrangements for the construction, operation and decommission of the facility, using notably the complementarities between national and EU instruments (such as the European Structural and Investment Funds or the European Investment Bank); (2) studying new mechanisms, e.g. pre-commercial procurement

[25] see: http://s3platform.jrc.ec.europa.eu/eye-ris3

[26] see: http://ec.europa.eu/regional_policy/indexes/in_your_country_en.cfm). For more details on ESIF investments in research and innovation see: http://ec.europa.eu/regional_policy/activity/index_en.cfm

processes, by which public authorities may develop new approaches for financing innovative solutions;

- Strategic work, i.e. (1) analysis of the socio-economic impact of the new infrastructure; (2) plan to integrate harmoniously the new entity in the European fabric of related facilities in accordance with the objective of balanced territorial development; (3) to create or consolidate centres of excellence and/or 'regional partner facilities'; (4) the identification of the best possible site(s) to set up the new facility(-ies) and its next generations;
- Technical work, i.e. (1) final prototypes for key enabling technologies and implementation plans for transfer of knowledge from prototypes to the new facility; (2) technical work to ensure that the beneficiary research communities exploit the new facility from the start with the highest efficiency, including the introduction of new processes or software.

B. Individual support to ESFRI projects and other world class research infrastructures

Individual support to ESFRI projects and other world class research infrastructures should cover one or more of the activities listed below. If combined support with the European Structural and Investment Funds (ESIF) is foreseen for such infrastructure, the proposal should specify which activities will not be funded by Horizon 2020, but by ESIF (and by which Operational Programme of ESIF).

- organisation of the logistic support for researchers, definition of access policies for researchers and management of IPRs and ethical issues;
- integration of the new entity in the European landscape of related facilities, and in the local context;
- promotion of long-term sustainability, including e.g. the involvement of funders, the preparation of business plans beyond the end of the grant, clear assessment of the costs for serving a user and for dealing with and making available the produced data;
- development of regional partner facilities (RPF) aiming at a more balanced development of the European Research Area. The supported activities should help the RPF to meet the same standards required for pan-European Research Infrastructures, in particular regarding the quality of services, management and open access policy;
- pilots of access provision to research communities following the rules specified for *integrating activities*, in order to test reliability and increase user trust;
- outreach;
- coordination with national or international related initiatives and support to the deployment of global and sustainable approaches in the field;
- mapping of infrastructures, users, investments, etc, in the specific field for supporting policy developments;
- activities to increase the potential for innovation, including social innovation, of the related infrastructure, such as networking with industries (including SMEs), facilitating their involvement as partners of the research infrastructures for technological developments, developing customised services for industry and SMEs, dissemination of research outcome and technology transfer.

C. Integrating Activities

An Integrating Activity shall cover three types of activities: Networking activities, Trans-national and/or virtual access activities, and Joint Research activities.

(i) **Networking activities**. To foster a culture of co-operation between the participants in the project, the scientific communities benefiting from the research infrastructures, industries and other stakeholders, and to help developing a more efficient and attractive European Research Area. Networking activities could include (non-exhaustive list):

- joint management of access provision and pooling of distributed resources;
- dissemination and /or exploitation of project results and knowledge, contribution to socio-economic impacts, promotion of innovation;
- reinforcing partnership with industry: outreach and dissemination activities, transfer of knowledge, activities to foster the use of research infrastructures by industrial researchers, involvement of industrial associations in consortia or in advisory bodies;
- strengthening of virtual research communities;
- definition of common standards, protocols and interoperability; benchmarking;
- development and maintenance of common databases for the purpose of networking and management of the users and infrastructures;
- activities to improve the efficiency of the research infrastructures' management and of their service provision;
- spreading of good practices, exchange of personnel and training of staff, consultancy;
- outreach and training courses to new users, with specific attention to increase participation of women to science;
- activities to attract young people to science careers;
- foresight studies for new instrumentation, methods, concepts and/or technologies;
- promotion of clustering and coordinated actions amongst related projects;
- coordination with national or international related initiatives and support to the deployment of global and sustainable approaches in the field;
- promotion of long-term sustainability, including the involvement of funders and the preparation of a business plan beyond the end of the project;
- definition of data management plans to organise the efficient curation, preservation and provision of access to data collected or produced under the project;
- relations with publishers for supporting data and sample deposition services;
- mapping of infrastructures, users, investments, etc, in the specific field for supporting policy developments.

(ii) **Trans-national and/or virtual access activities**.

Trans-national access activities

To provide 'free of charge' trans-national access to researchers or research teams including from industry to one or more infrastructures among those operated by participants. These access activities should be implemented in a coordinated way such as to improve the overall services available to the research community. Access may be made available to external users, either in person ('hands-on') or through the provision of remote scientific services, such as the provision of reference materials or samples, the performance of sample analysis or sample deposition.

The research infrastructures shall publicise widely the access offered under the grant agreement to ensure that researchers who might wish to have access to the infrastructure are made aware of the possibilities open to them. The research infrastructures shall promote equal opportunities in advertising the access and take into account the gender issues when defining the support provided to visitors. They shall maintain appropriate documentation to support and justify the amount of access reported. This documentation shall include records of the

names, nationalities, and home institutions of the users within the research teams, as well as the nature and quantity of access provided to them. To this extent a unit of access to the infrastructure shall be identified and precisely defined in the Grant Agreement.

The selection of researchers or research teams shall be carried out through an independent peer-review evaluation of their research projects. The research team, or its majority, must work in countries other than the country(ies) where the infrastructure is located (when the infrastructure is composed of several research facilities, operated by different legal entities, this condition shall apply to each facility) except in the case of a distributed set of resources or facilities offering remote access to the same services or when access is provided by an International organisation, the Joint Research Centre (JRC), an ERIC or similar legal entities. User teams where all or the majority of users works in third countries can be supported as far as the cumulative access provided to them is below 20% of the total amount of units of access provided under the grant. In exceptional and well justified cases a higher percentage of access to third-country user teams can be foreseen in the Grant Agreement. Only research teams, including industrial users, that are entitled to disseminate the knowledge they have generated under the project are eligible to benefit from research services to the infrastructure under the grant agreement. Exception to this condition is foreseen when users work for SMEs. The duration of stay at a research infrastructure shall normally be limited to three months, unless otherwise provided for in the Grant Agreement.

EU financial support to trans-national access will cover the *access costs*[27] incurred by the access provider for the provision of access to the selected researchers as well as the travel and subsistence incurred to support the visits to the infrastructure of these researchers.

The *access costs* charged to the grant will never include capital investments while they may cover the running costs of the infrastructure as well as the cost for the logistical, technological and scientific support to users' access, including costs for ad-hoc training needed by users to use the infrastructure and for preparatory and closing activities that may be necessary to carry out users' work on the infrastructure.

Virtual access activities

To provide virtual access to resources needed for research through communication networks without selecting or even identifying the researchers to whom access to resources is provided. Examples of virtual access activities are databases available via Internet, or data deposition services. Only virtual services widely used by the community of European researchers will be supported, therefore the services offered under a project shall be periodically assessed by an external board. In addition statistics on the access provided shall be given to the Commission. Virtual access activities will be supported through the reimbursement of the operating costs incurred by the infrastructure or installation for providing virtual access to resources over the duration of the project. EU financial support will never include capital investments while it may cover all the technological and scientific support needed by researchers to effectively use the service. Only eligible costs that can be clearly attributed to the provision of access can be reimbursed.

[27] Access costs can be supported through the reimbursement of the eligible costs specifically incurred for providing access to the research teams selected for support under the project, or on the basis of unit costs calculated according to the methodology indicated in the Commission Decision C(2013)8199. In the latter case the access costs will be calculated multiplying the unit cost by the quantity of access provided under the grant. The cost of the unit of access to the infrastructure, the unit cost, shall then be indicated in the proposal. A combination of the two methods mentioned above will also be possible.

(iii) **Joint Research activities**. These activities should be innovative and explore new fundamental technologies or techniques underpinning the efficient and joint use of the participating research infrastructures. They should involve, whenever appropriate, industries and SMEs to promote innovation and knowledge sharing through co-creation of needed technical solutions. In order to improve, in quality and/or quantity, the services provided by the infrastructures, the joint research activities could address (non-exhaustive list):

- higher performance methodologies and protocols, higher performance instrumentation, including the testing of components, subsystems, materials, techniques and dedicated software;
- integration of installations and infrastructures into virtual facilities;
- innovative solutions for data or sample collection, management, curation annotation, and deposition;
- innovative software solutions for making new user communities benefit from computing services.