



Gabinete de Promoção dos Programas Quadro ID&I

Fundação para a Ciência e Tecnologia | Agência de Inovação

***Oportunidades, desafios e perspetivas de financiamento no
Horizonte 2020***
Infraestruturas de Investigação

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Novidades

- Um programa mais estratégico e mais focado na prossecução das prioridades políticas actuais
- Mais integração nas outras partes do H2020, em particular uma relação mais próxima com os desafios societais
- Novo e mais reforçado ênfase na inovação, sustentabilidade exploração de dados através de todo o programa, em particular nas acções direccionadas para as “comunidades avançadas” e infraestruturas pan-europeias já estabelecidas
- Apoio a iniciativas de larga-escala de promoção da inovação
- Nova perspectiva sobre actividades de integração com diferentes processos para as *Starting* e as *Advanced Communities*
- Tópicos mais abertos e mais bottom-up



Calls do Programa de trabalhos 2016-2017

1. Development and long-term sustainability of new pan-European RIs
2. Integrating and Opening RIs of European Interest
3. *e-Infrastructures*
4. Fostering the innovation potential of RI
5. Support to Policy and International cooperation

Flexibilidade de 20% do orçamento entre calls e tópicos



Call 1 – Development and long-term sustainability of new pan-European RIs

To support the development of a comprehensive landscape of new sustainable world-class research infrastructures in Europe, helping to respond to challenges in science, industry & society

Emphasis on long-term sustainability, efficient operation, data management and on fostering the innovation potential

1. Design studies
2. Preparatory Phase of ESFRI projects
3. Individual support to ESFRI & Other World-Class RI
4. European Open Science Cloud for Research
5. Pilot action towards a European Research & Science Cloud



INFRADEV-1-2017 - *Design studies*

Support the **conceptual and technical design of new research infrastructures**, which are leading-edge user facilities of a clear European dimension and interest (topic 1):

- *Conceptual and technical feasibility of new or upgraded research user facilities, leading to a 'conceptual or technical design report'*
 - *Bottom-up process,*
- *30% budget increase and restricted scope for the 2017 topic with respect to the 2014 corresponding topic.*
 - *Total budget 20 M€ - EU contribution per proposal between 1-3 M€*
- *Very competitive topic as aimed at identifying the RIs that really have the potential to become the next generation of European world-class RI*
 - *Non-successful ESFRI applications can apply in order to reach the needed conceptual and technical level of maturity*

INFRADEV-2-2016 - *Preparatory Phases*

- **Support the preparatory phase of ESFRI projects (topic 2):**
 - Targeting the *new projects in the 2016 update of the ESFRI roadmap*
 - *Total budget 40 M€ - EU contribution per proposal up to 4 M€*
 - *Coordination & Support Action (CSA) or, when including technical work, Research & Innovation Action (RIA)*
 - *No support to PP type II as this was done in WP 2014-2015 to accelerate implementation of ESFRI projects in order to fulfil the IU commitment*



INFRADEV-3-2016/2017

Individual support to ESFRI & OWCRI

To facilitate and support long-term sustainability and efficient operation of the ESFRI & Other World-Class RI (OWCRI):

- Targeting *individual ESFRI RI* and OWCRI with established legal structure and governance at EU or international level, such as ERIC.
- Covering: membership enlargement, international cooperation, testing and improvement of access provision to users to increase reliability and create trust, definition of business model & service model agreements, outreach and technology transfer. *Not implementation.*
- Total budget 30M€ (2016)+ 40M€ (2017) - EU contribution per proposal (CSA) 2 - 5 M€



INFRADEV-4-2016

European Open Science Cloud for Research

Pilot action to demonstrate how wide availability of scientific data and data-analysis services for European researchers can be ensured through a cloud infrastructure.

- *In line with the strategic orientations of the 2016-2017 RI WP*
 - *Complementary to EINFRA-12-2017*
- *Ris characterised by very significant data volumes generate and handle*
- *Pilot action wide availability of scientific data and data analysis services*
- *Storage, access, re-use needs for data, knowledge from H2020 projects, etc*
 - *Build on existing infrastructures*
 - *EU contribution 10 M€.*



Topics (Type of Action)	Budgets (EUR million)		Deadlines
	2016	2017	
Opening: 02 Dec 2015			
INFRADEV-03-2016/2017 (RIA)	30.00	40.00	30 Mar 2016
Opening: 22 Mar 2016			
INFRADEV-02-2016 (CSA)	40.00		22 Jun 2016
INFRADEV-02-2016 (RIA)			
INFRADEV-04-2016 (RIA)	10.00		
Opening: 01 Dec 2016			
INFRADEV-01-2017 (RIA)		20.00	29 Mar 2017
Overall indicative budget	80.00	60.00	



Call 2: Integrating and opening RIs of European interest:

Integrating Activities

To open up key national and regional research infrastructures to all European researchers and to ensure their optimal use and joint development:

1. INFRAIA-1-2016/17: Integrating Activities for Advanced Communities: whose RIs show an advanced degree of coordination gained through previous IA grants
One stage call. Targeted approach based on a Multi-Annual Plan (MAP)

2. INFRAIA-2-2017: Integrating Activities for Starting Communities: never supported for their RI integration under EU FP7 or Horizon 2020 calls, in particular within an IA

Two-stage call. Bottom-up approach

➤ Access should be provided only to key RI of European interest, able to attract significant numbers of TA users. Other national and regional RI can be involved in the other activities of the proposal.



Integrating Activities - budget

Calls	IA proposals	funded	Success rate	Continuation			New		
				Proposals	Funded	Success rate	Proposals	Funded	Success rate
FP7 call 3 – 2008	140	38	27,1%	25	19	76%	115	19	17%
FP7 call 6 – 2010	50	22	44,0%	11	9	82%	39	13	33%
FP7 call 8 – 2011	23	13	56,5%	11	7	64%	12	6	50%
FP7 call 10 – 2012	34	18	52,9%	12	10	83%	20	8	40%
H2020 call 2014/15	58	19	32,8%	25	14	56%	33	5	15%

3.5 M€ limitation for activities other than access removed in order to take into account the different needs of various communities

160 M€ **AC** - up to 10M€ per prop. → **16-17** out of 22 topics could be supported :
~**75%** success rate

40 M€ **SC** - up to 5M€ per prop. → 25 SC to 2nd stage, **8-9** SC could be supported:
~**33%** success rate

INFRAIA-1-2016/17: *Integrating Activities for AC*

Emphasis on **innovation** aspects, on **widening** trans-national and virtual **access** provision, on **novelties** with respect to previous grants, and, in particular for "super advanced" communities, on addressing the **sustainability** of the integrated RI services provided at European level through, e.g., the **involvement of funders and the preparation of a business/funding plan beyond the end of the project.**

Criteria for prioritization of theme:

- ***Contribution & support to other H2020 parts and/or to break-through research***
- ***Contribution to EU strategic priorities***
- ***Coverage of emerging needs***

Previous GA timing and performance, ranking in the previous call as well as potential clustering of close communities taken into account

- ***88M€ 2016 + 72M€ 2017***



Ver planeamento plurianual de las – doc confidencial



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INFRAIA-2-2017: *Integrating Activities for SC*

Emphasis on **networking**, **standardisation** and establishing a **common access procedure** for trans-national and/or virtual access provision.

- All areas of science and technology considered
- 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 RIs.
- SC should organise the key RIs in their domain, not let set of these RIs competing between them . One IA per domain is however an expectation, not an eligibility criteria
- Large oversubscription expected: 2 stage call necessary
- Short proposal 20 pages, only proposals for 3 times the available budget will pass to the second stage (full proposal)
- The deadlines have been fixed to optimise the use of available evaluation facilities and resources.
- 40M€ - 2017 call



Conditions for the Integrating and opening research infrastructures of European interest call

Opening date(s), deadline(s), indicative budget(s):⁷

Topics (Type of Action)	Budgets (EUR million)		Deadlines
	2016	2017	
Opening: 10 Nov 2015			
INFRAIA-01-2016-2017 (RIA)	88.00	72.00	30 Mar 2016
Opening: 08 Dec 2015			
INFRAIA-02-2017 (RIA)		40.00	30 Mar 2016 First stage 29 Mar 2017 Second stage
Overall indicative budget	88.00	112.00	

DG CNECT Proposed WP Structure for e-INFRA component

- 1** - Integration and consolidation of e-infrastructure platforms supporting European policies and research and education communities
- 2** - Prototyping innovative e-infrastructure platforms and services for research and education communities and the citizens at large
- 3** - Support to policies and international cooperation



1 - Integration and consolidation of e-infrastructure platforms supporting European policies and research and education communities

- **EINFRA-11-2016 - Support to the next implementation phase of Pan-European High Performance Computing infrastructure and services (PRACE)**
- **EINFRA-12-2017 - Data and Distributed Computing e-infrastructures for Open Science**
 - Secure and agile data and distributed computing e-infrastructures (10-15M€)
 - Access and preservation platforms for scientific information (8-10M€)
- **GÉANT (FPA Partnership Projects)**
 - Research and Education Networking – GÉANT N
 - Networking infrastructure: platform innovation
 - Trans-Atlantic submarine cable



2 - Prototyping innovative e-infrastructure platforms and services for research and education communities and the citizens at large

- **EINFRA-21-2017 – Platform-driven e-infrastructure innovation**
 - a) Support to Public Procurement of innovative HPC systems, PPI (26 M€)
 - b) *Research and Innovation Actions for e-Infrastructure prototypes*
 - 1) Universal discoverability of data objects and provenance (20 M€)
 - 2) Computing e-infrastructure with extreme large datasets 2,5 to 3M€ per proposal / total of 46 M€
- **EINFRA-22-2016 – User-driven e-infrastructure innovation**
 - Exploitation of e-Infrastructures for user-centric innovation and pilots responding to community specific challenges
Diverse sub-topics / between 2,5 and 6M€ per proposal
 - Innovation for Open Science e-infrastructures and services
Between 1 and 2M€ per proposal
21M€ in total for both alneas



Conditions for the E-Infrastructures callOpening date(s), deadline(s), indicative budget(s):¹⁹

Topics (Type of Action)	Budgets (EUR million)		Deadlines
	2016	2017	
Opening: 08 Dec 2015			
EINFRA-11-2016 (RIA)	15.00		30 Mar 2016
EINFRA-22-2016 (RIA)	21.00		
Opening: 14 Apr 2016			
EINFRA-21-2017 (PPI)		26.00	20 Sep 2016
Opening: 08 Dec 2016			
EINFRA-12-2017 (RIA)		40.00	29 Mar 2017
EINFRA-21-2017 (RIA)		20.00	
Overall indicative budget	36.00	86.00	

Call 4: Fostering the innovation potential of Research Infrastructures

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

Establishment of a novel research and innovation collaborative framework to support technology and innovation transfer from RI towards industrial partners and joint development of high-tech components

- **Total budget 20 M€ - EU contribution per proposal (RIA) up to 20 M€**
- **Financial support to third parties**

INFRAINNOV-2-2016 – Support to Technological Infrastructures

Development of strategic agendas & roadmaps for key technologies for the construction/upgrade of RI, identification of potential markets, exchange of good practices, ...

- **Total budget 10 M€ - EU contribution per proposal (CSA) up to 2 M€**
- **Expected to cover at least five different technological domain of interest for pan European RI**



Conditions for the Fostering the innovation potential of Research Infrastructures call
Opening date(s), deadline(s), indicative budget(s):²⁰

Topics (Type of Action)	Budgets (EUR million)		Deadlines
	2016	2017	
Opening: 08 Dec 2015			
INFRAINNOV-02-2016 (CSA)	10.00		30 Mar 2016
Opening: 08 Dec 2016			
INFRAINNOV-01-2017 (RIA)		20.00	29 Mar 2017
Overall indicative budget	10.00	20.00	

Call 5: Support to Policy and International cooperation

INFRASUPP-1-2016 – Policy and international cooperation measures for RI

- **Synchronising and harmonisation *RI evaluation mechanisms and roadmapping***
- **Coordination of clusters, Esfri RI & IA on data issues & their participation to RDA**
- **Bilateral cooperation on RI with Africa**
- **Support the training needs of the SESAME**
- **Total budget 8 M€ - EU contribution per proposal (CSA) 1.5 - 2 M€**

INFRASUPP-2-2017 – Policy and international cooperation measures for research infrastructures *International landscaping exercise for RI*

- **Develop a model describing the socio-economic leverage of Research Infrastructures**
- **Cooperation between EU and strategic partners for the development of global RI**
- ***Support to RDA secretariat, participation of new communities and emergence of building blocks for interoperable data infrastructure***
- **Total budget 6,5 M€ - EU contribution per proposal (CSA) 1.5 – 3,5 M€**



Call 5: Support to Policy and International cooperation

INFRASUPP-03-2016: Support to policies and international cooperation for e-infrastructures

- ***Research and Innovation Actions for International Co-operation on high-end e-infrastructure requirements***
- ***Coordination and Support actions for international co-operation and policy development***
 - ***International Co-operation on e-infrastructure supporting major societal challenges***
 - ***Policy support to e-infrastructure programme:*** Support the e-IRG25 secretariat
 - ***Support to dissemination for the e-infrastructure programme***
 - ***Support to small-size foresight roadmaps for the e-infrastructure programme***
- **Total budget 7,5 M€ - EU contribution per proposal (CSA) 0.5 – 1.5 M€**



Conditions for the Support to policy and international cooperation call
Opening date(s), deadline(s), indicative budget(s).²⁶

Topics (Type of Action)	Budgets (EUR million)		Deadlines
	2016	2017	
Opening: 08 Dec 2015			
INFRASUPP-01-2016 (CSA)	8.00		30 Mar 2016
INFRASUPP-03-2016 (CSA)	4.50		
INFRASUPP-03-2016 (RIA)	3.00		
Opening: 08 Dec 2016			
INFRASUPP-02-2017 (CSA)		6.50	29 Mar 2017
Overall indicative budget	15.50	6.50	

Other actions

Presidency event: Launch of the 2016 ESFRI Roadmap

- *Dutch Presidency - 2016 first half*
- Total budget **0.1** M€

External expertise

- *Reviewers, experts for H2020 interim evaluation and experts for ERIC evaluation*
- Total budget **0.8** M€ in 2016 - **0.8** M€ in 2017 – RTD/CNECT

GÉANT Partnership projects

Interactive Computing e-infrastructure for the Human Brain Project FET Flagship (FPA)

- Total budget 25 M€ in 2017





Technology Readiness Levels

- TRL 0: Idea.** Unproven concept, no testing has been performed.
- TRL 1: Basic research.** Principles postulated and observed but no experimental proof available.
- TRL 2: Technology formulation.** Concept and application have been formulated.
- TRL 3: Applied research.** First laboratory tests completed; proof of concept.
- TRL 4: Small scale prototype** built in a laboratory environment ("ugly" prototype).
- TRL 5: Large scale prototype** tested in intended environment.
- TRL 6: Prototype system** tested in intended environment close to expected performance.
- TRL 7: Demonstration system** operating in operational environment at pre-commercial scale.
- TRL 8: First of a kind commercial system.** Manufacturing issues solved.
- TRL 9: Full commercial application,** technology available for consumers.

Research and
Innovation



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