Work Programme 2018-2020
Part 4: Research Infrastructures
(including e-Infrastructures)

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Strategic orientations for the RI WP 2018-20

➢ **Long term sustainability** of pan-European Research Infrastructures: life cycle approach;

➢ **Interoperability** and the **European Open Science Cloud**;

➢ Structuring the European landscape: **integrating and opening** Research Infrastructures of European interest;

➢ Research Infrastructures for **Open Innovation**;

➢ **Training** the Research Infrastructure **managers** of tomorrow;

➢ **Europe as a global leader** in Research Infrastructures.

Calls in the RI 2018-2020 WP

1. **Development and long term sustainability of new pan-European RIs**

2. **Implementing the EOSC**

3. **Integrating and Opening RIs of European Interest**

4. **European Data Infrastructure**

5. **Demonstrating the role of RIs in the translation of Open Science into Open Innovation**

6. **Support to policy and International cooperation**

Other Actions: GÉANT Partnership projects, Support to NCP

Around €1,1 billion to be awarded over 3 years

2018-2020 Work Programme

- **Defining in full only 2018 and 2019 topics**

- **2020 topics**

  - ✓ **Only titles are provided in WP**

  - ✓ **Calls with 2020 topics are duplicated in the WP with a second instance indicating "continued in 2020"**

  - ✓ **Indicative budget for all the 2020 calls (including the continued ones) is provided in the WP**

  - ✓ **2020 Topics will be defined and discussed at the time of future WP amendments**

Call 1
Development & LTS of new pan-European RIs

To facilitate and support preparation & implementation of the ESFRI and other world-class RIs, which will help Europe to respond to grand challenges in science, industry and society.

Emphasis on long-term sustainability, on fostering the innovation potential, on data management and the connection to the EOSC

1. **Design studies**
2. **Preparatory Phase of new ESFRI projects**
3. **Individual support to ESFRI & OWC RIs**

INFRADEV-01-2019-2020 - *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:

➢ *Conceptual and technical feasibility of new or upgraded research user facilities, leading to a 'conceptual or technical design report'*

➢ *Need to demonstrate relevance and advancement wrt the state-of-art as well as the addressing of research challenges and RI landscape gaps*

➢ *Bottom-up process, only <u>one</u> deadline in 2019 but budget over 2 years*

➢ *50% budget increase for the 2019 topic with respect to the 2017 corresponding topic.*

➢ *Indicative budget 30 M€ - EU contribution per proposal between 1-3 M€*

➢ *Research and Innovation Action (RIA)*

➢ *Very competitive topic as aimed at identifying the RIs that really have the potential to become the next generation of European world-class RI*

INFRADEV-02-2019-2020 - *Preparatory Phases*

- **Support the preparatory phase of ESFRI projects:**

  - *Targeting the new projects in the 2018 and 2020 updates of the ESFRI roadmap*

  - *Two deadlines: beginning of 2019 and end 2020*

  - *Indicative budget 48 M€ - EU contribution per proposal up to 4 M€*

  - *Scope of the topic could be fine-tuned through WP amendments to adapt the text to the outcomes of the roadmap updating processes*

  - *Coordination & Support Action (CSA)*

INFRADEV-03-2018-2019
Individual support to ESFRI & OWC RI

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

➢ *Targeting individual ESFRI RI and OWC RI with established legal structure and governance at EU or international level, such as ERIC. RI having submitted a first step ERIC application can apply too.*

➢ **Addressing issues highlighted in the Sustainable European RIs document**

➢ *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, innovation fostering, and the development & integration in the RI landscape of RPF.*

➢ *Two deadlines: in 2018 and in 2019*

➢ *Total indicative budget 60 M€ - EU contribution per proposal (RIA) 2 - 5 M€*

➢ *On a competitive basis: proposals must demonstrate their crucial need for the requested support and how this will ensure their sustainability*

➢ *Proposals must also explain complementarities with previous or current EU grants.*

Call INFRADEV Summary

Research Infrastructures	2018	2019	2020	Total	Single grant	Deadlines
CALL H2020-INFRADEV-2018-2020	**15**	**85**	**38**	**138**		
INFRADEV-01: Design studies		*20*	*10*	*30*	from 1 to 3 M€	**12 Nov 2019**
INFRADEV-02: Preparatory Phase		20	*28*	*48*	up to 4 M€	**29 Jan 2019** *end of 2020*
INFRADEV-03: Individual Support	15	*45*		60	from 2 to 5 M€	**22 Mar 2018** **20 Mar 2019**

Call 2 – Implementing the EOSC

Topic 1: **Access to commercial services through the EOSC hub**

Topic 2: **Prototyping new services**

Topic 3: **Integration of public pan-European eInfrastructure services into the EOSC basic catalogue of services**

Topic 4: **Connecting ESFRI RI through Cluster projects**

Topic 5: **EOSC governance**

Topic 6: **Enhancing the EOSC portal & connecting thematic clouds**

INFRAEOSC-01-2018
Access to commercial services through the EOSC hub

To set-up a legal and technical mechanism to integrate these supplementary commercial services into the EOSC hub in order to make them available to the scientists.

❖ **Commodity type commercial digital services that are necessary for interdisciplinary research activities**

❖ **Earth observation services: commercial services stemming from the use of Copernicus open data accessible through the 'DIAS' platforms**

➢ **Pan-European e-Infrastructures will act as aggregators of demand for such commercial services, run and manage the procurement contracts and integrate these services into the EOSC service catalogue.**

➢ **Indicative budget 12M€, Research and Innovation Action (RIA)**

INFRAEOSC-02-2019
Prototyping new innovative services

To develop an agile, fit-for-purpose and sustainable service offering accessible through the EOSC hub that can satisfy scientific community evolving needs by stimulating the design and prototyping of novel innovative digital services

➢ **Targeting gaps in the service offering of the EOSC catalogue of services**

➢ **The new services should address relevant aspects of the research data cycle (from inception to publication, curation, preservation and reuse)**

➢ **Responding initially to specific needs of particular scientific communities but in the long run they should be leveraged to become as generic as possible, serving a wider remit of research needs, as well as new users like industry and the public sector.**

➢ **Targeting services at TRL 6 with the aim to reach TRL 8 at the end of the project**

➢ **Indicative budget 28.5M€, EU contribution per proposal (RIA) 5 - 6 M€**

INFRAEOSC-03-*2020*

Integration and consolidation of pan-European access mechanisms to public e-Infrastructures & commercial services through the EOSC hub

➢ Follow-up of EINFRA-12-2017

➢ Primarily integrate services for scalable computing, software, distributed databases and storage with services for access to and preservation of scientific information across Europe

➢ Covers services at TRL 8 and above

➢ Focus on generic services ➡ be used by as many scientific communities, and by new users like industry and the public sector

➢ Indicative budget 79 M€

➢ *Scope of the topic to be fine-tuned with the WP amendment in 2019*

INFRAEOSC-04-2018
Connecting ESFRI RI through Cluster projects

Clusters of ESFRI, ERICs and IO infrastructures in large thematic domains for data stewardship and connection to the EOSC

➢ *to ensure* **stewardship** *of data handled by the involved RI in line with the FAIR principles*

➢ *to* **expose** *RI data and tools under the* **EOSC catalogue**

➢ *to address domain-specific* **issues affecting data sharing** *and re-use*

➢ *to ensure services harmonisation, integration and* **interoperability** *of data in those domains as well as interoperability with other relevant domains*

➢ *Indicative budget* **95 M€**; *between EUR 6 and 24 million per proposal (RIA)*

   on the basis of 1.5 -2 M€ of EU contribution per connected RI

INFRAEOSC-05-2018-2019
EOSC governance

a) **Setup the EOSC coordination structure (2018)**

b) **Coordination of EOSC-relevant national initiatives across Europe and support to prospective EOSC service providers (2018-2019)**

c) **FAIR data uptake and compliance in all scientific communities (2018)**

✓ *Grants awarded under this topic will complement each other (collaboration agreements)*

✓ *Grants will build on the results of past, ongoing and forthcoming proposals*

INFRAEOSC-05-2018-2019
EOSC governance

a) Setup the EOSC coordination structure (2018)

- ➤ *Support the EOSC Executive Board overseeing the EOSC implementation and support the development of innovative business models for the delivery of EOSC core functions;*

- ➤ *Help coordinate all EOSC relevant activities funded under H2020;*

- ➤ *Support decision making process regarding EOSC core functions and help set rules and methods of participation;*

- ➤ *Structure the EOSC community of stakeholders ;*

- ➤ *Liaise with Third Countries in policy and technical developments compatible with EOSC.*

- ➤ *Indicative budget 10 M€; 1 proposal expected to be funded (CSA)*

INFRAEOSC-05-2018-2019
EOSC governance

b) Coordination of EOSC relevant national initiatives across Europe and support to prospective EOSC service providers (2018-19)

- ➢ *Support the coordination, convergence and federation of EOSC relevant national initiatives for open research data and services;*

- ➢ *Support EOSC coordination structure in assessing the level of interoperability and organisational readiness of involved EOSC service providers;*

- ➢ *Map and harmonise the delivery of horizontal services related to research data across EOSC providers and related national initiatives*

- ➢ *Proposals will build on and complement related work on the EOSC Hub*

- ➢ *Indicative budget 30 M€, up to 6 M€ per proposal (RIA)*

INFRAEOSC-05-2018-2019 - *EOSC governance*

c) FAIR data uptake and compliance in all scientific communities (2018)

➢ *implementation of a common scheme to ensure FAIR data development uptake and compliance by national and European research data providers;*

➢ *Facilitate coordination of initiatives across MS & AC;*

➢ *Develop and implement measures on FAIR data policy addressing, among others, data stewardship, data curation & creation of metadata catalogues;*

➢ *Support the co-development and implementation of standards for data management and certification schemes for data repositories ;*

➢ *Organise FAIR competence centres for areas not addressed by other initiatives;*

➢ *Address the establishment of a European data science competence framework for inclusion in academic curricula.*

➢ *Indicative budget 10 M€; Coordination & Support Action (CSA)*

INFRAEOSC-06-2019-**2020**

Enhancing the EOSC portal and connecting thematic clouds

a)Support to the EOSC Portal (2019)

b)Connecting thematic clouds into the EOSC (*2020*)

✓ *Grants will build on the results of past, ongoing and forthcoming proposals*

INFRAEOSC-06-2019-2020
Enhancing the EOSC portal and connecting thematic clouds

a) Support to the EOSC Portal (2019)

➢ *Provide a fully functional, sustainable and comprehensive **user interface to the EOSC services**;*

➢ ***Incorporate existing** scientific **gateways**, data and cloud thematic platforms developed under FP7 and H2020;*

➢ *Proposals will build on the work of eInfraCentral and provide additional support for the implementation of the EOSC Hub*

➢ *Indicative budget **2 M€**, one proposal expected to be funded (RIA)*

INFRAEOSC-06-2019-2020
Enhancing the EOSC portal and connecting thematic clouds

b) Connecting thematic clouds into the EOSC (2020)

- ➢ *Ensure functional interoperability and gradual integration of existing thematic clouds into the EOSC;*

- ➢ *Proposals will complement the activities developed by the projects funded under the topic INFRAEOSC-04-2018*

- ➢ *Indicative budget 5 M€, 1-2 M€ per thematic cloud in the proposal (RIA)*

- ➢ *Scope of the sub-topic to be fine-tuned with the WP amendment in 2019*

Mapping of 2018-2019 actions
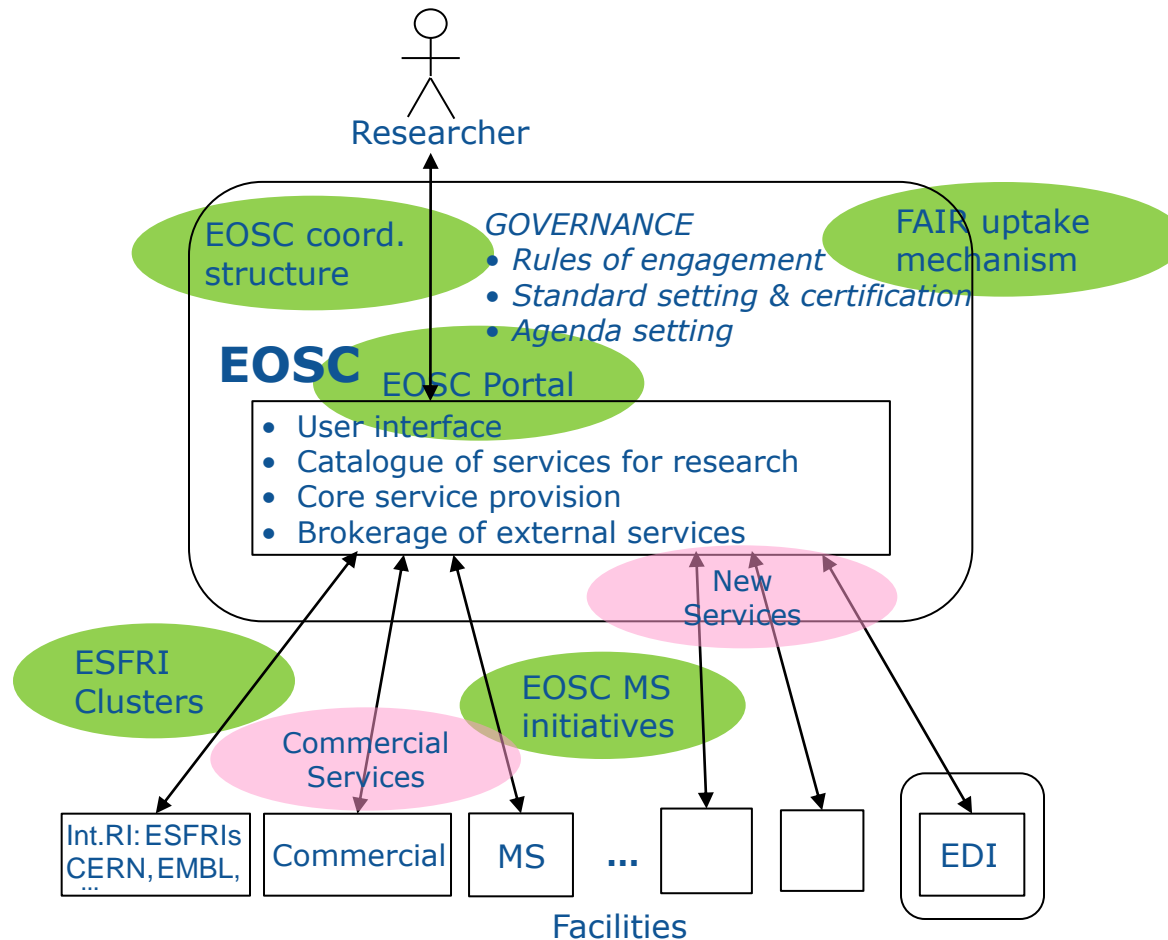
Call INFRAEOSC Summary

Research Infrastructures		2018	2019	2020	Total	Single grant	Deadlines
CALL H2020-INFRAEOSC-2018-2020		**142**	*45.5*	*84*	*271.5*		
INFRAEOSC-01: Access to commercial services		12			12	from 11 to 12 M€	**22 Mar 2018**
INFRAEOSC-02: Prototyping new services			*28.5*		*28.5*	from 5 to 6 M€	**29 Jan 2019**
INFRAEOSC-03: Integration & consolidation				*79*	*79*		*mid 2020*
INFRAEOSC-04: Connecting ESFRI RI through clusters		95			*95*	from 6 to 24 M€	**22 Mar 2018**
INFRAEOSC-05: EOSC governance	(a)	10			10	up to 10 M€	**19 Apr 2018**
	(b)	15	*15*		*30*	from 5 to 6 M€	**21 Nov 2018**
	(c)	10			10	up to 10 M€	**19 Apr 2018**
INFRAEOSC-06: portal *& thematic clouds*	(a)		*2*		*2*	up to 2 M€	**20 Mar 2019**
	(b)			*5*	*5*		*mid 2020*

Call 3 – Integrating and opening RIs of European interest

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

Emphasis on sustainability, widening, skills, innovation and data management in compliance with the EOSC

1. **Integrating activities for Advanced communities**

2. *Integrating activities for Starting communities (2020)*

3. *Pilot for a new model of IA : new ways for opening and integrating at EU level RIs of European interest (2020)*

INFRAIA-01-2018-2019
Integrating Activities for Advanced communities

➢ **RI communities with an advanced degree of coordination achieved through previous IA**

➢ **Targeted approach, one stage calls, two deadlines: 2018 and 2019.**

➢ **Indicative total budget 226.5 M€, at least 110 M€ per deadline, up to 10 M€ of EU contrib. per GA (RIA)**

➢ **Emphasis on novelties with respect to previous GAs; on widening TA / VA provision in term of services, users, and served disciplines; on innovation aspects; on the contribution to a catalogue of RI services; on addressing the sustainability of the integrated RI services provided at EU level, on the adoption of the European Charter for Access to RI, on data stewardship & connection of data services and tools to the EOSC**

Call 3 – Integrating and opening RIs of European interest (continued in **2020**)

INFRAIA-02-2020: *Integrating Activities for Starting communities*

RI Communities never supported for their integration under EU FPs

➢ **Two-stage call:** *1st stage 2019, 2nd 2020.* **Bottom-up** approach

➢ **Emphasis on networking, standardisation and common access procedure, complementarity and coherence with the existing European RI landscape**

INFRAIA-03-**2020**: *Pilot for a new model of Integr. Activities*

To explore new ways to support the opening of national/regional/ European RIs and the provision of integrated RI services at EU level

➢ **One stage call. Targeted approach** *– 2020*

➢ **Targeting larger sets of RIs, gathering close communities, even with different degree of coordination, to develop and implement a programme focussing on access provision and integration**

Call INFRAIA Summary

Research Infrastructures	2018	2019	2020	Total	Single grant	Deadlines
CALL H2020-INFRAIA-2018-2020	101.5	125	155	381.5		
INFRAIA-01: IA - advanced communities	101.5	125		226.5	Up to 10 M€	22 Mar 2018 20 Mar 2019
INFRAIA-02: IA – starting communities			155	155	up to 5 M€	end 2019 + mid 2020
INFRAIA-03: Pilot for a new model of IA						mid 2020

Call 4 – European Data Infrastructure

To integrates world-class HPC capability, high-speed connectivity and leading-edge data and software services

1. **Support to a Pan-European High Performance Computing infrastructure and services (PRACE)**

2. **Supporting Centres of Excellence on HPC that promote the use of upcoming exascale computing capabilities**

3. **Supporting the governance of the EDI**

4. *Support to Public Procurement of innovative HPC systems (2020)*

INFRAEDI-01-2018: Pan-European HPC infrastructure and services (PRACE)

- ➤ **Provide a seamless and efficient Europe-wide Tier-0 service to users, based on promoting research excellence and innovation**

- ➤ **Support software implementations, helping Tier-0 users and communities in adapting and adopting novel software solutions**

- ➤ **Identify new user needs and ensure openness to new user communities and new applications**

- ➤ **Run training and skills development programmes**

- ➤ **Coordinate activities with the European Technology Platform for HPC (ETP4HPC) and the Centres of Excellence in HPC applications**

- ➤ **Estimated budget 24 M€, between 22 and 24 M€ per proposal (RIA)**

INFRAEDI-02-2018: HPC PPP – Centres of Excellence in exascale computing

(a) Supporting Centres of Excellence – CoE   (RIA)

- *Consolidating important domains (e.g. materials, biomolecular, weather/climate, health/medicine, Big Data)*
- *New CoE in key areas (e.g. engineering) and openness to new areas*
- *HPC applications towards exascale performance (computing and extreme data)*
- *Services supporting different usage models - convergence of HPC, HTC & HPDA*
- *Commitment to the co-design approach*
- *Specialised training and capacity building – PRACE*
- *Data management and long term data stewardship towards exascale*
- *Estimated budget 72 M€, between EUR 6 and 8 million per proposal*

(b) CoE coordination (CSA)

- *a focal point for the consulting skills and training available from the CoE and other organisations (i.e. PRACE)*
- *Estimated budget 2 M€, one proposal expected to be funded*

INFRAEDI-03-2018: Support to the governance of HPC Infrastructure

➢ **Support the objectives of the European Cloud Initiative by promoting a sound governance structure for the management and the development of the EDI infrastructure and services (HPC/data/connectivity), decision making on funding, long-term sustainability and security;**

➢ **Establish a communication platform for the dialogue of stakeholders involved in the implementation of the Governance of the HPC infrastructure;**

➢ **Linking with relevant national and pan-European activities in the field;**

➢ **Organize outreach events;**

➢ **The action should involve users, implementers and funders, participating in the EU funded activities of HPC and Big Data.**

➢ **Estimated budget 0,9 M€ - 3 years, one proposal expected to be funded**

INFRAEDI-EDI-04-2020: Support to Public Procurement of innovative HPC systems

➢ Contribute to the coordination of plans and procurements for the provision of leading-class HPC capabilities at European and national level

➢ Procurement of innovative HPC solutions for the deployment in Europe of two pre-exascale systems

➢ A substantial percentage of the new systems will be made available to European researchers in the frame of PRACE

➢ Diversify the available leading-class HPC capabilities and architectures, to satisfy the needs of a wider range of users in different key application areas

➢ Estimated budget 80 M€ (35% EU funding -> systems of ~228 M€)

➢ *Scope to be fine-tuned with the WP amendments in 2019*

Call INFRAEDI Summary

Research Infrastructures	2018	2019	2020	Total	Single grant	Deadlines
CALL H2020-INFRAEDI-2018-2020	**98.9**		*80*	*178.9*		
INFRAEDI-01: PRACE	24			24	Up to 24 M€	**22 Mar 2018**
INFRAEDI-02: CoE on HPC (a)	72			72	from 5 to 6 M€	**22 Mar 2018**
INFRAEDI-02: CoE on HPC (b)	2			2	Up to 2 M€	**22 Mar 2018**
INFRAEDI-03: governance of the HPC infrastructure	0.9			0.9	Up to 0.9 M€	**22 Mar 2018**
INFRAEDI-04: public procurement of HPC			*80*	*80*		*mid 2020*

Call 5: Demonstrating the role of RIs in the translation of Open Science into Open Innovation

Large initiatives and support measures to foster the innovation potential of research infrastructures:

1. Stimulate the **innovation potential of SMEs**
2. Network of research infrastructure **Industrial Liaison and Contact Officers**
3. *Co-Innovation platform for research infrastructure technologies (2020)*
4. *Innovation pilots (2020)*

INFRAINNOV-01-2019
Stimulate the innovation potential of SMEs

Specific Challenge: **Providing an effective mechanism for inclusion of innovative, agile SMEs in the EDI**

➢ **To stimulate the innovation potential of SMEs as users of advanced HPC services**

➢ **The action will involve financial support to third parties in the form   of grants**

➢ **Indicative budget: 8 M€ , between 7 and 8 M€ per proposal (RIA)**

INFRAINNOV-02-2019: *Network of RI Industrial Liaison & Contact Officers*

Support the establishment of a network of Industrial Liaison and Contact Officers engaged with pan-European RI, including ESFRI and other relevant world class RI of European interest

➢ *Addressing training session & exchange of best practises across various research domains, enhanced cross-border and cross-thematic brokerage events, joint awareness campaigns towards industry (including SMEs), …*

➢ *covering a wide range of scientific domains*

➢ *portals of calls, tenders, future needs and technology transfer opportunities per technological domain could also be developed*

➢ *Indicative budget 1.5 M€ - Coordination & Support action (CSA)*

Call 5: Demonstrating the role of RIs in the translation of Open Science into Open Innovation (continued in 2020)

INFRAINNOV-03-2020: Co-Innovation platform for research infrastructure technologies

➢ innovation projects to integrate RIs with industry in a **co-development/co-creation** effort on the basis of their strategic potential to connect science, industrial leadership and societal challenges

➢ follow-up of the 2017 co-innovation platform for detection & imaging technologies

INFRAINNOV-04-2020: Innovation pilots

➢ Targeting larger communities of RIs in **partnerships with industry and SMEs** for the implementation of strategic roadmap and/or joint research activities **in key technologies for the RI development and upgrade**

➢ Complementary to the IA pilot action

➢ Targeted approach

Call INFRAINNOV Summary

Research Infrastructures	2018	2019	2020	Total	Single grant	Deadlines
CALL H2020-INFRAINNOV-2019-2020		*9.5*	*60*	*69.5*		
INFRAINNOV-01: stimulate the innovation potential of SME		*8*		*8*	from 7 to 8 M€	**29 Jan 2019**
INFRAINNOV-02: network of RI ILO/ICO		*1.5*		*1.5*	up to 1.5 M€	**20 Mar 2019**
INFRAINNOV-03: *co-innovation platform for RI technologies*			*60*	*60*		*mid 2020*
INFRAINNOV-04: *innovation pilots*						*mid 2020*

Call 6: Policy and International cooperation

Actions to reinforce European research infrastructures policy and international cooperation, the latter with flagship initiatives *(support to Sesame in Jordan, cooperation with Russia, EU-CELAC cooperation on RIs).*

1. **Policy and international cooperation measures for research infrastructures**
2. *Strengthening the human capital of research infrastructures and e-infrastructures (*2020*)*

INFRASUPP-01-2018-2019
Policy and international cooperation for RI

➢ **Two deadlines:** 2018 and 2019.

➢ *(a) Research & Innovation actions (RIA) for the 2018 deadline*

   SESAME: development and installation, in partnership with the European synchrotrons & industry, of a European beamline

➢ *(b) Coordination & Support actions (CSA) for the 2018 deadline*

   (b1) **Support to the ERIC network**

   (b2) **International visibility of European RI** and of their services through, for example, a brokerage based approach and organization of a science market place

   (b3) **Catalogue of RI services**, complementary and tightly linked to the EOSC catalogue

   (b4) **Support to the ESFRI**

   (b5) **Support to the e-IRG**

Indicative budget for 2018: 12.6 M€ - Up to 6 M€ for (a); up to 1.5 M€ for proposals under (b1) to (b4); up to 0.6 M€ for proposals under (b5)

INFRASUPP-01-2018-2019
Policy and international cooperation for RI

➢ *(c) Research & Innovation actions (RIA) for the 2019 deadline*

    ➢ **Cooperation with Russia:** joint research activities for the development of instrumentation between advanced Mega-science initiatives and EU facilities; joint design effort for new facilities; exchange programmes; access provision for European researchers to RU facilities

➢ *(d) Coordination & Support actions (CSA) for the 2019 deadline*

    ➢ **EU-CELAC cooperation on RIs**: identification of priorities for regional and bi-regional cooperation, exchange of best practises, …

Indicative budget for 2019: 27 M€ - Up to 25 M€ for (c) and up to 1.5 M€ for (d)

Call INFRASUPP Summary

Research Infrastructures		2018	2019	2020	Total	Single grant	Deadlines
CALL H2020-INFRASUPP-2018-2020		12.6	27	1.5	41.1		
INFRASUPP-01: policy & INCO measures for RIs	(a)	6			6	up to 6 M€	**22 Mar 2018**
	(b)	6.6			6.6	up to1.5 or 0.6 M€	**22 Mar 2018**
	(c)		27		27	up to 25 M€	**20 Mar 2019**
	(d)					up to 1.5 M€	**20 Mar 2019**
INFRAINNOV-03: strengthening the human capital of RIs				*1.5*	*1.5*		*mid 2020*

Other Actions:
GÉANT Framework Partnership Agreement

The aim is to establish GÉANT and NREN ecosystem as the networking substrate for other e-infrastructures as well as the provider of services and applications underpinning the EOSC, exascale and any other research centric vertical solution.

a.1) Provision of Operational Services (TRL 8 or above)

➢ Further develop the next-generation GÉANT network; upgrade trust & identity services

➢ Developing new functionalities; build a test environment for services becoming operational

➢ Improve the minimum service level of the smaller European NRENs

a.2) Prototyping and piloting of new services (TRL 6 or above)

➢ Prototyping network components, modules, services and applications accessing wired/wireless infrastructures and networked resources

➢ Respond to the needs of extreme-scale systems and ultra-low latency applications

➢ Piloting the widening of user base to public sector and industry

Other Actions:
GÉANT Framework Partnership Agreement

a.3) International Cooperation, skills and dissemination

➢ Establish new collaboration agreements and develop further existing ones with NRENs or associations of NRENs outside the EU

➢ Organise workshops on end user network services requirements to inform future product portfolio pipelines and help understand demand for new services

➢ Strengthen the community creative programme

➢ Organize & participate in international events to disseminate the value of NRENS and e-Infrastructures at large and their contribution to the Open Science principles

(b) Increase of long-term backbone capacity

➢ Restructuring the backbone network: long-term IRUs to develop a new, more extensive footprint, stimulating the market in cross-border communications infrastructure whilst decreasing the digital divide and reducing costs

Total budget (2018-2019): **128 M€** for 2 SGAs (a & b), of which at least 16 M€ for (b)

Other Actions: support to NCPs

To facilitate transnational cooperation between Horizon 2020 NCPs in the area of RIs (incl. e-Infra)

Continuation of previous action, focus on:

➢ **Identification and sharing of good practices**

➢ **raising the general standard of support to programme applicants**

➢ **re-inforced support to widening activities, in particular to help NCPs in those countries that have been participating at low levels in the programme up to now**

➢ *using various mechanisms including benchmarking, joint workshops, enhanced cross-border brokerage events, and specific training linked to the RI sector*

Total budget (2018) for a grant to identified beneficiaries: **0,35M€**