European
Commission

A guide to ICT-related activities in WP2018-20

ICT in H2020 – an overview

ICT is present in many of the H2020 areas. This guide is designed to help potential proposers find ICT-related topics across the different parts of H2020 in work programme 2018-20.

Like in previous work programmes (2014-15 and 2016-17), actions supported through the last phase of Horizon 2020 will cover the **full innovation chain**, from basic research to market uptake:

- Advanced research to uncover radically new technological possibilities and ICT contributions to upstream research and innovation are addressed in the '**excellent science**' part of the work programme, respectively under '**future and emerging technologies**' and '**European research infrastructures**' ('**eInfrastructures**');

- Research and innovation activities on generic ICT technologies either driven by industrial roadmaps or through a bottom-up approach are addressed in the '**leadership in enabling and industrial technologies**' (LEIT) part of the work programme;

- Multi-disciplinary application-driven research and innovation leveraging ICT to tackle societal challenges are addressed in the different '**societal challenges**'.

However, although the overall structure of this work programme is similar to previous ones, a few changes need to be taken into account:

- A new part is introduced to implement a pilot of the **European Innovation Council (EIC)**, bringing together several innovation support schemes: the SME Instrument, the Fast Track to Innovation (FTI), FET Open, and Horizon Prizes. Each addresses the needs of a particular community in the innovation ecosystem.

  - Activities aiming at supporting innovative SMEs through the dedicated SME instrument are now all grouped together in a single fully bottom-up topic.

  - As part of the EIC pilot, **FET Open** should provide a bold exploratory engine that shatters the frontiers of current thinking, and aims at combining high scientific ambition with concrete technological implications.

- While the concept of **focus area** has been strengthened further, the '**cross-cutting activities**' part introduced in the previous work programme is now replaced by virtually linked calls.

  - A smaller number of major actions which cut across the programme boundaries are implemented as focus areas. Each of these aligns with major political or policy drivers, and is endowed with a substantial budget to allow for work of sufficient scale, depth and breadth. The linking of topics from different parts of the work programme is achieved through aligning aspects of the implementation such as proposal submission deadlines and evaluation procedures, and also putting in place measures to share information and create synergies between ongoing projects throughout the life-cycle (e.g. publicity, project monitoring). At the same time, the 'contributing' calls and topics remain within the structure and logic of their respective work programme parts in Horizon 2020. Overall the expected effect is to get more from the same investment and build critical mass where it is needed.

- The following priorities are addressed through focus areas:
  - 'Building a low-carbon, climate resilient future' (LC) (total budget: 3.35 billion euros),
  - 'Connecting economic and environmental gains – the Circular Economy ' (CE) (980 million euros),
  - '**Digitising and transforming European industry and services**' (**DT**) (**1.68 billion euros**),
  - 'Boosting the effectiveness of the Security Union' (SU) (1.08 billion euros), which notably includes activities related to **cybersecurity**.
- The structure of all work programme parts was streamlined in order to have fewer and bigger calls with high impact, as well as fewer and broader topics, each supporting a balanced portfolio of projects.

The following sections give more details on ICT-related activities in the different parts. **A list of the topics of 2018 and 2019 where ICT's contribution is the most relevant is also provided in annex (with the main call details).**

The detailed description of all these topics can be found in the complete work programme with the references available in the table of the annex.

Note that ICT is also addressed by the **European Research Council (ERC)** and the **Marie Skłodowska-Curie actions**, which are not covered in this document.

ICT in 'Excellent science'

1. Future and Emerging Technologies (FET)

FET Open: novel ideas for radically new technologies

FET Open, which represents 40% of the overall FET budget in Horizon 2020, is entirely non-prescriptive with regards to the nature or purpose of the technologies that are envisaged. FET Open covers all technological areas and no budget is specifically earmarked for ICT.

In WP2018-20, FET Open is part of the **European Innovation Council** pilot and the call text has been simplified for a clearer scope.

FET Open also calls for coordination and support for communication, innovation and horizon scanning.

The **FET Innovation Launchpad**, which was started in the previous work programme and aimed at stimulating innovation by initiating entrepreneurial activities around results from FET research projects, has been refined to take into account experience from the first call.

FET Proactive: boosting emerging technologies

Two calls are proposed in FET proactive, one specifically addressing **High Performance Computing** and another one entitled **'Boosting emerging technologies'**, with its main topic (*'FETPROACT-01-2018: FET Proactive: emerging paradigms and communities'*) covering six different emerging areas.

Amongst the two other topics of this second call, one proves particularly relevant to ICT, since it is aims at supporting community building in Neuromorphic Computing Technologies.

FET Flagships: tackling grand interdisciplinary science and technology challenges

The two flagships launched in 2013, and already addressed in the previous work programmes, will be further developed and supported (the **Graphene** flagship, and the **Human Brain Project** (HBP)) while the support to a third flagship on **Quantum Technologies** will be initiated.

Preparatory actions for new FET flagships will also be funded.

2. Research infrastructures

e-Infrastructures

The Research Infrastructures part of work programme 2018-20 will provide support to actions included in the 2016 Communication from the Commission on the **European Cloud Initiative**[1], in particular to further integrate and consolidate e-infrastructure platforms, to connect the ESFRI (European Strategy Forum on Research Infrastructures) infrastructures to the European Open Science Cloud, and to develop a European Data Infrastructure (EDI). This will mainly happen through the four following calls:

- **'Implementing the European Open Science Cloud'**,
- **'Integrating and opening research infrastructures of European interest'**,
- **'European Data Infrastructure'**,
- **'Demonstrating the role of Research Infrastructures in the translation of Open Science into Open Innovation'**.

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1 COM(2016) 178 : European Cloud Initiative – Building a competitive data and knowledge economy in Europe

ICT in 'Leadership in Enabling and Industrial Technologies'

Compared with previous work programmes, the structure of the section of the 'Leadership in Enabling and Industrial Technologies' pillar which is dedicated to **ICT** has been revised and aligned with the main political priorities in the digital area:

- the **digitisation of European industry and services**,
- the **European Data Infrastructure** (EDI),
- the **5G** action plan and connected and automated mobility,
- the **Next Generation Internet** (NGI), including the Internet of Things and artificial intelligence,
- **Cybersecurity**.

The corresponding activities are mainly covered through three calls:

- a generic call on **Information and Communication Technologies**,
- a call dedicated to the **implementation of the DEI (Digitising European Industry) strategy**[2] (through support to digital innovation hubs, the development of platforms and large-scale pilots) and the contribution of LEIT-ICT to the DT focus area of WP2018-20,
- a call on **cybersecurity** (which contributes to the focus area 'Boosting the effectiveness of the Security Union').

These calls are complemented by two **dedicated joint calls** with **Japan** and **South Korea**.

Several topics of the sections of the programme addressing '**Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing**' and '**Space**' also address challenges related to digitisation and contribute to the DT focus area.

ICT in the 'European Innovation Council' (EIC) pilot

SME participation is encouraged throughout the work programme and in particular in the priorities 'Industrial Leadership' and 'Societal Challenges'. Dedicated SME support is channelled through the **SME instrument**, introduced in the Work Programme 2014-2015, which promotes SMEs' innovation activities from concept to market. In 2016-17, all topics using the SME instrument were grouped in a continuously open common call. For 2018-20, this consolidation is pursued and the support to SMEs through this dedicated instrument takes the form of a single topic with a **fully bottom-up approach** (still with a continuously open call with four deadlines per year).

Further to the success of its pilot phase, the **Fast Track to Innovation** (FTI) scheme, which was launched in 2015, is continued and now integrated in the EIC pilot. FTI takes a new approach to give the development of innovations the last push needed before their introduction to the market. It is the only **fully bottom-up** measure in Horizon 2020 promoting close-to-market innovation activities and **open to all types of participants**.

FET Open has also become part of the EIC pilot, with a simplified call text and the three following points for the expected impact:

- Scientific and technological contributions to the foundation of a new future technology,
- Potential for future social or economic impact or market creation,
- Building leading research and innovation capacity across Europe by involvement of key actors that can make a difference in the future, for example excellent young researchers, ambitious high-tech SMEs or first-time participants to FET under Horizon 2020.

The EIC pilot also comprises a series of **inducement prizes**, out of which notably one on '**Blockchains for Social Good**' and another one on '**Affordable High-Tech for Humanitarian Aid**'.

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2   COM(2016) 180 : Digitising European Industry – Reaping the full benefits of a Digital Single Market

ICT in 'Societal challenges'

Digitisation was retained as one of the five main political drivers to be taken into account in the design of WP2018-20, which led to the development of a **major focus area** dedicated to this priority (DT – 'Digitising and transforming European industry and services') and a further strengthening of the integration of the support to ICT-related R&I activities across LEIT and societal challenges (in continuation of the work initiated with the focus area on 'Internet of Things' of WP2016-17).

Information and communication technologies also play an essential role in the **focus area** addressing **security** (SU – 'Boosting the effectiveness of the Security Union), which notably covers **cybersecurity** and aims at bringing security-related research closer to other policies and societal challenges in the parts of H2020 where they belong.

ICT contributions are expected in each of the seven societal challenges in Horizon 2020:

- SC1: Health, demographic change and wellbeing,
- SC2: Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy,
- SC3: Secure, clean and efficient energy,
- SC4: Smart, green and integrated transport,
- SC5: Climate action, environment, resource efficiency and raw materials,
- SC6: Europe in a changing world – Innovative, inclusive and reflective societies,
- SC7: Secure societies — Protecting freedom and security of Europe and its citizens.

In the societal challenges ICT is addressed through either specific topics or calls or as part of a broader set of contributing technologies in the description of the targeted activities.

1. SC1 – Health, demographic change and wellbeing

ICT, which does have a prominent role in this societal challenge, is addressed mainly in two dedicated calls:

- **'Digital transformation in Health and Care'**,
- **'Trusted digital solutions and Cybersecurity in Health and Care'**.
- A few topics from the third call of this part of the work programme, 'Better health and care, economic growth and sustainable health systems', notably in its part dedicated to 'personalised medicine' also include aspects related to ICT in their scope.

2. SC2 – Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy

With the "digital revolution" being considered as one important driver of innovation in the areas covered under this part of the programme, the number of topics for which the contribution of ICT proves relevant has increased significantly compared with previous work programmes.

In addition to the two topics of the DT focus area presented in the LEIT-ICT part which address digital technologies for agriculture and rural development, each of the three calls of this part of the programme comprises ICT-relevant topics (some of which contributing to the focus area):

- **'Sustainable Food Security'**,
- **'Blue Growth'**,
- **'Rural Renaissance'**.

3. SC3 – Secure, clean and efficient energy

The strategy outlined in the communication entitled 'Accelerating Clean Energy Innovation'[3] adopted in November 2016 was a key input to the development of this part of the work programme. As this strategy clearly emphasizes the essential role of ICT to address the four innovation priorities in the area of energy (buildings, renewables, storage and electro-mobility), ICT-relevant topics can be found the four following parts of the unique call of SC3, **'Building a low-carbon, climate resilient future: secure, clean and efficient energy'**:

- 'Energy efficiency',
- 'Smart and clean energy for consumers',
- 'Smart citizen-centred energy system',
- 'Smart Cities and Communities'.

These topics complement other topics on ICT for energy which contribute directly to the DT and SU focus areas and are published under the LEIT-ICT and SC7 parts respectively.

4. SC4 – Smart, green and integrated transport

One of the three calls of this part of the programme is dedicated to **'automated road transport'** and fully contributes to the DT focus area.

The two other calls also include topics for which the contribution of ICT clearly proves relevant:

- **'Mobility for growth'**,
- **'Green vehicles'**.

5. SC5 – Climate action, environment, resource efficiency and raw materials

Only one of the two calls of this societal challenge contains topics where the contribution from ICT can prove relevant: **'Greening the economy in line with the Sustainable Development Goals (SDGs)'**. These topics can be found under the following parts of this call:

- 'Connecting economic and environmental gains – the circular economy',
- 'Raw materials',
- **'Water for our environment, economy and society'**.

6. SC6 – Europe in a changing world – Innovative, inclusive and reflective societies

This societal challenge provides a significant contribution to the DT focus area. ICT-related topics can be found in each of the three main calls proposed for 2018-20:

- **'Migration'**,
- **'Socioeconomic and cultural transformations in the context of the fourth industrial revolution'**,
- **'Governance for the future'**.

7. SC7 – Secure societies – Protecting freedom and security of Europe and its citizens

This part of the work programme is structured around three calls out of which two are particularly relevant for ICT:

- **'Protecting the infrastructure of Europe and the people in the European smart cities'**, which contains topics cutting across physical and cyber-security,
- **'Digital Security'**, which addresses cybersecurity, digital privacy and data protection, and contains a topic cutting across SC3 and SC7.

The third call of this part of the work programme, entitled **'Security'**, also contains a few topics of relevance to ICT.

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3 COM(2016)763

Important disclaimer

This document presents an overview of ICT-related activities to be supported in the work programme 2018-2020 of Horizon 2020. The adoption and the publication of the final work programme by the Commission are expected on 27 October 2017.

The information provided here is therefore indicative and liable to change.

Readers should in any case refer to the official version on the Horizon 2020 Programme published on the Horizon 2020 website and on the Participant Portal (http://ec.europa.eu/research/participants/portal), notably for the call conditions.

Annex - Detailed list of topics

Note: For deadlines: - shaded cells in the table correspond to two-stage calls,
                                            - dates are in format dd/mm/yy.

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
Excellent Science					
Future and Emerging Technologies (FET)					
FET Open: novel ideas for radically new technologies					
FETOPEN-01-2018-2019-2020	FET-Open Challenging Current Thinking	181.2 162.8 361.0	07/11/17	16/05/18	24/01/19 18/09/19 13/05/20
FETOPEN-02-2018	FET-Open Coordination and Support Actions	2.0	07/11/17	11/04/18	
FETOPEN-03-2018-2019-2020	FET Innovation Launchpad	2.5 2.7 3.0	07/11/17	16/10/18	08/10/19 14/10/20
FET Proactive - Boosting emerging technologies					
FETPROACT-01-2018	FET Proactive: emerging paradigms and communities	88.0	31/10/17	22/03/18	
FETPROACT-02-2018	Community building in Neuromorphic Computing Technologies	0.5	31/10/17	22/03/18	
FETPROACT-03-2018	FET ERA-NET Cofund	6.0	05/06/18	18/12/18	
FET Proactive - High Performance Computing					
FETHPC-01-2016	International Cooperation on HPC	4.0	01/02/18	15/05/18	
FETHPC-02-2017	Extreme scale computing technologies, methods and algorithms for key applications and support to the HPC ecosystem	68.0	07/05/19		24/09/19
FET Flagships - Tackling grand interdisciplinary science and technology challenges					
FETFLAG-01-2018	Preparatory Actions for new FET Flagships	6.0	31/10/17	20/02/18 *18/09/18*	
FETFLAG-02-2018	ERA-NET Cofund for FET Flagships	10.0	31/10/17	17/04/18	
FETFLAG-03-2018	FET Flagship on Quantum Technologies	132.0	31/10/17	20/02/18	
Research Infrastructures					
Implementing the European Open Science Cloud					
INFRAEOSC-01-2018	European Open Science Cloud for Research	12.0	05/12/17	22/03/18	
INFRAEOSC-02-2019	Prototyping new innovative services	28.5	16/10/18		29/01/19
INFRAEOSC-04-2018	Connecting ESFRI infrastructures through Cluster projects	95.0	05/12/17	22/03/18	
INFRAEOSC-05-2018-2019	Support to the EOSC Governance	50.0	10/01/18 26/07/18	19/04/18 21/11/18	
INFRAEOSC-06-2019-2020	Enhancing the EOSC portal and connecting thematic clouds	2.0	14/11/18		20/03/19
Integrating and opening research infrastructures of European interest					
INFRAIA-01-2018-2019	Integrating Activities for Advanced Communities	101.5 125.0	05/12/17 14/11/18	22/03/18	20/03/19
European Data Infrastructure					
INFRAEDI-01-2018	Pan-European High Performance Computing infrastructure and services (PRACE)	24.0	05/12/17	22/03/18	
INFRAEDI-02-2018	HPC PPP - Centres of Excellence on HPC	74.0	05/12/17	22/03/18	
INFRAEDI-03-2018	Support to the governance of High Performance Computing Infrastructures	0.9	05/12/17	22/03/18	
Demonstrating the role of Research Infrastructures in the translation of Open Science into Open Innovation					
INFRAINNOV-01-2019	Stimulate the innovation potential of SMEs	8.0	16/10/18		29/01/19
INFRAINNOV-02-2019	Network of research infrastructure Industrial Liaison and Contact Officers	1.5	14/11/18		20/03/19

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20

Industrial Leadership

LEIT - Information and Communication Technologies

Information and Communication Technologies

Technologies for Digitising European Industry

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
ICT-01-2019	Computing technologies and engineering methods for cyber-physical systems of systems	40.0	16/10/18		28/03/19
ICT-02-2018	Flexible and Wearable Electronics	30.0	31/10/17	17/04/18	
ICT-03-2018-2019	Photonics Manufacturing Pilot Lines for Photonic Components and Devices	30.0 30.0	31/10/17 16/10/18	17/04/18	28/03/19
ICT-04-2018	Photonics based manufacturing, access to photonics, datacom photonics and connected lighting	55.0	31/10/17	17/04/18	
ICT-05-2019	Application driven Photonics components	76.5	16/10/18		28/03/19
ICT-06-2019	Unconventional Nanoelectronics	30.0	16/10/18		28/03/19
ICT-07-2018	Electronic Smart Systems (ESS)	48.0	31/10/17	17/04/18	
ICT-08-2019	Security and resilience for collaborative manufacturing environments	11.0	16/10/18		28/03/19
ICT-09-2019-2020	Robotics in Application Areas	50.0	16/10/18		28/03/19
ICT-10-2019-2020	Robotics Core Technology	42.0	16/10/18		28/03/19

European Data Infrastructure: HPC, Big Data and Cloud technologies

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
ICT-11-2018-2019	HPC and Big Data enabled Large-scale Test-beds and Applications	50.0 40.0	31/10/17 26/07/18	17/04/18 14/11/18	
ICT-12-2018-2020	Big Data technologies and extreme-scale analytics	31.0	31/10/17	17/04/18	
ICT-13-2018-2019	Supporting the emergence of data markets and the data economy	13.0 48.0	31/10/17 16/10/18	17/04/18	28/03/19
ICT-14-2019	Co-designing Extreme Scale Demonstrators (EsD)	80.0	26/07/18	14/11/18	
ICT-15-2019-2020	Cloud Computing	30.0	16/10/18		28/03/19
ICT-16-2018	Software Technologies	20.0	31/10/17	17/04/18	

5G

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
ICT-17-2018	5G End to End Facility	60.0	31/10/17	31/01/18	
ICT-18-2018	5G for cooperative, connected and automated mobility (CCAM)	50.0	31/10/17	17/04/18	
ICT-19-2019	Advanced 5G validation trials across multiple vertical industries	92.0	26/07/18	14/11/18	
ICT-20-2019-2020	5G Long Term Evolution	44.0	16/10/18		28/03/19
ICT-21-2018	EU-US Collaboration for advanced wireless platforms	2.0	31/10/17	17/04/18	
ICT-22-2018	EU-China 5G Collaboration	6.0	31/10/17	31/01/18	
ICT-23-2019	EU-Taiwan 5G collaboration	4.0	05/09/18		15/01/19

Next Generation Internet (NGI)

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
ICT-24-2018-2019	Next Generation Internet - An Open Internet Initiative	28.5 21.5	31/10/17 16/10/18	17/04/18	28/03/19
ICT-25-2018-2020	Interactive Technologies	3.0 20.0	31/10/17 26/07/18	17/04/18 14/11/18	
ICT-26-2018-2020	Artificial Intelligence	20.0	31/10/17	17/04/18	
ICT-27-2018-2020	Internet of Things	1.5	31/10/17	17/04/18	
ICT-28-2018	Future Hyper-connected Sociality	21.0	31/10/17	17/04/18	
ICT-29-2018	A multilingual Next Generation Internet	25.0	31/10/17	17/04/18	
ICT-30-2019-2020	An empowering, inclusive Next Generation Internet	8.0	16/10/18		28/03/19
ICT-31-2018-2019	EU-US collaboration on NGI	2.5 3.5	31/10/17 16/10/18	17/04/18	28/03/19

Cross-cutting activities

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
ICT-32-2018	STARTS - The Arts stimulating innovation	9.0	31/10/17	17/04/18	
ICT-33-2019	Startup Europe for Growth and Innovation Radar	11.5	16/10/18		28/03/19
ICT-34-2018-2019	Pre-Commercial Procurement open	6.0 6.0	31/10/17 16/10/18	17/04/18	28/03/19
ICT-35-2018	Fintech: Support to experimentation frameworks and regulatory compliance	2.5	31/10/17	17/04/18	

Digitising and transforming European industry and services: digital innovation hubs and platforms

Support to Hubs

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
DT-ICT-01-2019	Smart Anything Everywhere	49.0	16/10/18		02/04/19
DT-ICT-02-2018	Robotics - Digital Innovation Hubs (DIH)	66.0	31/10/18	17/04/18	
DT-ICT-03-2020	I4MS (phase 4) - uptake of digital game changers and digital manufacturing platforms				
DT-ICT-04-2020	Photonics Innovation Hubs				
DT-ICT-05-2020	Big Data Innovation Hubs				

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
DT-ICT-06-2018	Coordination and Support Activities for Digital Innovation Hub network	1.0	31/10/18	17/04/18	
Platforms and Pilots					
DT-ICT-07-2018-2019	Digital Manufacturing Platforms for Connected Smart Factories	48.0 47.0	31/10/18 16/10/18	17/04/18	02/04/19
DT-ICT-08-2019	Agricultural digital integration platforms	30.0	26/07/18	14/11/18	
DT-ICT-09-2020	Digital service platforms for rural economies				
DT-ICT-10-2018-19	Interoperable and smart homes and grids	30.0	26/07/18	14/11/18	
DT-ICT-11-2019	Big data solutions for energy	30.0	16/10/18		02/04/19
DT-ICT-12-2020	The smart hospital of the future				
DT-ICT-13-2019	Digital Platforms/Pilots Horizontal Activities	4.0	26/07/18	14/11/18	
Cybersecurity					
SU-ICT-01-2018	Dynamic countering of cyber-attacks	40.0	15/03/18	28/08/18	
SU-ICT-02-2020	Building blocks for resilience in evolving ICT systems	47.0	25/07/19		19/11/19
SU-ICT-03-2020	Advanced cybersecurity and digital privacy technologies				
SU-ICT-04-2019	Quantum Key Distribution testbed	15.0	15/03/18	28/08/18	
EU-Japan Joint Call					
EUJ-01-2018	Advanced technologies (Security/Cloud/IoT/BigData) for a hyper-connected society in the context of Smart City	3.0	31/10/17	31/01/18	
EUJ-02-2018	5G and beyond	3.0	31/10/17	31/01/18	
EU-Korea Joint Call					
EUK-01-2018	Cloud, IoT and AI technologies	2.2	31/10/17	31/01/18	
EUK-02-2018	5G	4.0	31/10/17	31/01/18	

LEIT - Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing					
Foundations for tomorrow's industry					
Materials characterisation and computational modelling					
DT-NMBP-07-2018	Open Innovation Test Beds for Characterisation	44.0	31/10/17	23/01/18 *28/06/18*	
DT-NMBP-09-2018	Accelerating the uptake of materials modelling software				
DT-NMBP-08-2019	Real-time nano-characterisation technologies	37.8	16/10/18		22/01/19 *03/09/19*
DT-NMBP-10-2019	Adopting materials modelling to challenges in manufacturing processes				
Transforming European Industry					
Factories of the Future					
DT-FOF-01-2018	Skills needed for new Manufacturing jobs	2.0	31/10/17	22/02/18	
DT-FOF-02-2018	Effective Industrial Human-Robot Collaboration	79.0	31/10/17	22/02/18	
DT-FOF-03-2018	Innovative manufacturing of opto-electrical parts				
DT-FOF-04-2018	Pilot lines for metal Additive Manufacturing				
DT-FOF-05-2019	Open Innovation for collaborative production engineering	*106.6 (incl. one other topic)*	16/10/18		21/02/19
DT-FOF-08-2019	Pilot lines for modular factories				
DT-FOF-12-2019	Handling systems for flexible materials				
DT-NMBP-18-2019	Materials, manufacturing processes and devices for organic and large area electronics	20.0	16/10/18		22/01/19 *03/09/19*
DT-NMBP-19-2019	Advanced materials for additive manufacturing	20.4	16/10/18		22/01/19 *03/09/19*
DT-NMBP-20-2018	A digital 'plug and produce' online equipment platform for manufacturing	15.0	28/11/17	08/03/18	
Industrial sustainability					
Sustainable Process Industry (SPIRE)					
DT-SPIRE-06-2019	Digital technologies for improved performance in cognitive production plants	32.9	16/10/18		21/02/19
Cultural heritage					
NMBP-33-2018	Innovative and affordable solutions for the preventive conservation of cultural heritage	16.0	31/10/17	23/01/18 *28/06/18*	
Energy-efficient buildings (EEB)					
LC-EEB-02-2018	Building information modelling adapted to efficient renovation	35.0	31/10/17	22/02/18	
LC-EEB-06-2018-20	ICT enabled, sustainable and affordable residential building construction, design to end of life				

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20

LEIT – Space

Space

Earth observation

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
DT-SPACE-01-EO-2018-2020	Copernicus market uptake	9.0 9.0	31/10/17 16/10/18	06/03/18	 12/03/19
DT-SPACE-06-EO-2019	International Cooperation Copernicus – Designing EO downstream applications with international partners	5.0	16/10/18		12/03/19

Space business, entrepreneurship, outreach and education

DT-SPACE-09-BIZ-2019	Space hubs (support to start-ups)	2.0	16/10/18		12/03/19

Space technologies, science and exploration

SPACE-12-TEC-2018	SRC – Space robotics technologies	18.0	31/10/17	06/03/18	
LC-SPACE-14-TEC-2018-2019	Earth observation technologies	8.0 8.0	31/10/17 16/10/18	06/03/18	 12/03/19
SPACE-15-TEC-2018	Satellite communication technologies	9.0	31/10/17	06/03/18	

EGNSS market uptake

DT-SPACE-EGNSS-2-2019-2020	EGNSS applications fostering digitisation	4.0	16/10/18		05/03/19

European Innovation Council (EIC) Pilot

SME Instrument

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
EIC-SMEInst-2018-2020	SME instrument	*Year 2018:* 479.7 *Year 2019:* 552.2 *Year 2020:* 601.0	07/11/17	Phase 1: 08/02/18 03/05/18 05/09/18 07/11/18 Phase 2: 10/01/18 14/03/18 23/05/18 10/10/18	Phase 1: 13/02/19 07/05/19 05/09/19 06/11/19 Phase 2: 09/01/19 03/04/19 05/06/19 09/10/19

Fast Track to Innovation (FTI)

EIC-FTI-2018-2020	Fast Track to Innovation (FTI)	100 *per year*	07/11/17	21/02/18 31/05/18 23/10/18	21/02/19 23/05/19 22/10/19

Societal Challenges

Health, demographic change and wellbeing

Better Health and care, economic growth and sustainable health systems

Personalised medicine

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
SC1-BHC-05-2018	International flagship collaboration with Canada for human data storage, integration and sharing to enable personalised medicine approaches	40.0	07/11/17	18/04/18	
SC1-HCO-01-2018-2019-2020	Actions in support of the International Consortium for Personalised Medicine	8.0 4.0	07/11/17 26/07/18	18/04/18	 16/04/19
SC1-HCO-02-2018	Data integration and data-driven in-silico models for enabling personalised medicine - a European standardization framework	2.0	07/11/17	18/04/18	

Infectious diseases and improving global health

SC1-BHC-13-2019	Mining big data for early detection of infectious disease threats driven by climate change and other factors	30.0	26/07/18		16/04/19

Digital transformation in Health and Care

SC1-DTH-01-2019	Big data and Artificial Intelligence for monitoring health status and quality of life after the cancer treatment	35.0	16/10/18		24/04/19
SC1-DTH-03-2018	Adaptive smart working and living environments supporting active and healthy ageing	25.0	07/11/17	24/04/18	

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
SC1-DTH-05-2019	Large scale implementation of digital innovation for health and care in an ageing society	10.0	16/10/18		24/04/19
SC1-DTH-07-2018	Exploiting the full potential of in-silico medicine research for personalised diagnostics and therapies in cloud-based environments	35.0	07/11/17	24/04/18	
SC1-DTH-08-2018	Prototyping a European interoperable Electronic Health Record (EHR) exchange	30.0	07/11/17	24/04/18	
SC1-DTH-09-2019	Scaling up the univocal Identification of Medicinal Products	19.0	16/10/18		24/04/19
SC1-DTH-10-2019-2020	Digital health and care services	22.0	26/07/18	14/11/18	
SC1-DTH-11-2019	Large Scale pilots of personalised & outcome based integrated care	20.0	16/10/18		24/04/19
SC1-HCC-01-2018	Supporting investment in smart living environments for ageing well through certification	1.0	07/11/17	24/04/18	
SC1-HCC-02-2019	Support for the large scale uptake of open service platforms in the Active and Healthy Ageing domain	1.5	16/10/18		24/04/19
SC1-HCC-03-2018	Support to further development of international cooperation in digital transformation of health and care	2.0	07/11/17	24/04/18	
SC1-HCC-04-2018	Digital health and care services – support for strategy and (early) adoption	3.0	07/11/17	24/04/18	
SC1-HCC-05-2018	Support to a Digital Health and Care Innovation initiative in the context of Digital Single Market strategy	4.0	07/11/17	24/04/18	

Trusted digital solutions and Cybersecurity in Health and Care

Focus Area on Digitising and transforming European industry and services

DT-TDS-01-2019	Smart and healthy living at home	60.0	26/07/18	14/11/18	

Focus Area on Boosting the effectiveness of the Security Union

SU-TDS-02-2018	Toolkit for assessing and reducing cyber risks in hospitals and care centres to protect privacy/data/infrastructures	35.0	07/11/17	24/04/18	
SU-TDS-03-2018	Raising awareness and developing training schemes on cybersecurity in hospitals	1.0	07/11/17	24/04/18	

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

Sustainable Food Security

From functional ecosystems to healthy food

DT-SFS-14-2018	Personalized Nutrition	28.0	31/10/17	13/02/18	

Building capacities

DT-SFS-26-2019	Food Cloud demonstrators	10.0	16/10/18		23/01/19
SFS-31-2019	ERANETs in agri-food	21.0	16/10/18		23/01/19

Blue Growth

BG-02-2018	Blue Bioeconomy Public-Public Partnership	8.0	31/10/17	13/02/18	
DT-BG-04-2018-2019	Sustainable European aquaculture 4.0: nutrition and breeding	6.0	16/10/18		23/01/19

Rural Renaissance

From farm to society: understanding dynamics and modernising policies

RUR-02-2018	Socio-economic impacts of digitisation of agriculture and rural areas	5.0	31/10/17	13/02/18 *11/09/18*	

Taking advantage of the digital revolution

DT-RUR-12-2018	ICT Innovation for agriculture – Digital Innovation Hubs for Agriculture	20.0	31/10/17	13/02/18	
RUR-13-2018	Enabling the farm advisor community to prepare farmers for the digital age	7.0	31/10/17	13/02/18	
RUR-14-2018	Digital solutions and e-tools to modernise the CAP	10.0	31/10/17	13/02/18	

Secure, Clean and Efficient Energy

Building a low-carbon, climate resilient future: secure, clean and efficient energy

Energy efficiency

LC-SC3-EE-4-2019-2020	Upgrading smartness of existing buildings through innovations for legacy equipment	10.0	24/01/19		03/09/19
LC-SC3-EE-13-2018-2019-2020	Enabling next-generation of smart energy services valorising energy efficiency and flexibility at demand-side as energy resource	4.0 / 8.0	25/01/18 / 24/01/19	04/09/18	03/09/19

Smart and clean energy for consumers

LC-SC3-EC-1-2018-2019-2020	The role of consumers in changing the market through informed decision and collective actions	5.0 / 5.0	25/01/18 / 24/01/19	04/09/18	03/09/19

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
Smart citizen-centred energy system					
LC-SC3-ES-1-2019	Flexibility and retail market options for the distribution grid	37.3	05/09/18		05/02/19
LC-SC3-ES-2-2019	Solutions for increased regional cross-border cooperation in the transmission grid	25.0	05/09/18		05/02/19
LC-SC3-ES-3-2018-2020	Integrated local energy systems (Energy islands)	26.3	05/12/17	05/04/18	
LC-SC3-ES-4-2018-2020	Decarbonising energy systems of geographical Islands	19.0	05/12/17	05/04/18	
LC-SC3-ES-5-2018-2020	TSO – DSO – Consumer: Large-scale demonstrations of innovative grid services through demand response, storage and small-scale (RES) generation	30.0	05/12/17	05/04/18	
LC-SC3-ES-6-2019	Research on advanced tools and technological development	25.3	05/09/18		05/02/19
Smart Cities and Communities					
LC-SC3-SCC-1-2018-2019-2020	Smart Cities and Communities	43.0 73.0	05/12/17	05/04/18	05/02/19

Smart, green and integrated transport					
Mobility for growth					
Safe, integrated and resilient transport systems					
MG-2-6-2019	Moving freight by Water: Sustainable Infrastructure and Innovative Vessels	30.0	05/09/18		16/01/19 *12/09/19*
MG-2-7-2019	Safety in an evolving road mobility environment	8.0	05/09/18		16/01/19 *12/09/19*
Global leadership and competitiveness					
MG-3-1-2018	Multidisciplinary and collaborative aircraft design tools and processes	12.0	31/10/17	30/01/18 *19/09/18*	
MG-3-2-2018	The Autonomous Ship	20.0	31/10/17	30/01/18 *19/09/18*	
Accounting for the people					
MG-4-5-2019	An inclusive digitally interconnected transport system meeting citizens' needs	7.0	04/09/18		24/04/19
Blue growth					
MG-BG-01-2018	Unmanned and autonomous survey activities at sea	8.0	31/10/17	04/04/18	
Digitising and Transforming European Industry and Services: Automated Road Transport					
DT-ART-01-2018	Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data	6.0	31/10/17	04/04/18	
DT-ART-02-2018	Support for networking activities and impact assessment for road automation	9.0	31/10/17	04/04/18	
DT-ART-03-2019	Human centred design for the new driver role in highly automated vehicles	8.0	04/12/18		24/04/19
DT-ART-04-2019	Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all	30.0	04/12/18		24/04/19
Building a low-carbon, climate resilient future: Green Vehicles					
LC-GV-01-2018	Integrated, brand-independent architectures, components and systems for next generation electrified vehicles optimised for the infrastructure	42.0	31/10/17	04/04/18	
LC-GV-02-2018	Virtual product development and production of all types of electrified vehicles and components	14.0	31/10/17	04/04/18	
LC-GV-04-2019	Low-emissions propulsion for long-distance trucks and coaches	25.0	04/12/18		24/04/19

Climate action, environment, resource efficiency and raw materials					
Greening the economy in line with the Sustainable Development Goals (SDGs)					
Connecting economic and environmental gains - the circular economy					
CE-SC5-03-2018	Demonstrating systemic urban development for circular and regenerative cities	39.0	07/11/17	27/02/18 *04/09/18*	
CE-SC5-04-2019	Building a water-smart economy and society	72.0	14/11/18		19/02/19 *04/09/19*
Raw materials					
SC5-09-2018-2019	New solutions for the sustainable production of raw materials	20.0 30.0	07/11/17 14/11/18	27/02/18 *04/09/18*	19/02/19 *04/09/19*
SC5-10-2019-2020	Raw materials innovation actions: exploration and Earth observation in support of sustainable mining	20.0	14/11/18		19/02/19 *04/09/19*
Water for our environment, economy and society					

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
SC5-11-2018	Digital solutions for water: linking the physical and digital world for water solutions	14.0	07/11/17	27/02/18 *04/09/18*	
SC5-12-2018	EU-India water co-operation	15.0	07/11/17	27/02/18	

Europe in a changing world – inclusive, innovative and reflective Societies

Migration

DT-MIGRATION-06-2018-2019	Addressing the challenge of migrant integration through ICT-enabled solutions	12.0 8.0	07/11/17 06/11/18	13/03/18	14/03/19

Socioeconomic and cultural transformations in the context of the fourth industrial revolution

TRANSFORMATIONS-01-2018	Research for inclusive growth: addressing the socioeconomic effects of technological transformations	9.0	07/11/17	13/03/18	
DT-TRANSFORMATIONS-02-2018-2019-2020	Transformative impact of disruptive technologies in public services	9.0 7.0	07/11/17 06/11/18	13/03/18	14/03/19
TRANSFORMATIONS-03-2018-2019	Innovative solutions for inclusive and sustainable urban environments	1.5 6.0	07/11/17 06/11/18	13/03/18	14/03/19
DT-TRANSFORMATIONS-07-2019	The impact of technological transformations on children and youth	10.5	06/11/18		14/03/19
DT-TRANSFORMATIONS-11-2019	Collaborative approaches to cultural heritage for social cohesion	12.0	06/11/18		14/03/19
DT-TRANSFORMATIONS-12-2018-2020	Curation of digital assets and advanced digitisation	10.0	07/11/17	13/03/18	
TRANSFORMATIONS-13-2019	Using big data approaches in research and innovation policy making	1.9	06/11/18		14/03/19

Governance for the future

DT-GOVERNANCE-05-2018-2019-2020	New forms of delivering public goods and inclusive public services	1.5 8.0	07/11/17 06/11/18	13/03/18	14/03/19
DT-GOVERNANCE-12-2019-2020	Pilot on using the European cloud infrastructure for public administrations	8.0	06/11/18		14/03/19
DT-GOVERNANCE-13-2019	Digitisation, Digital Single Market and European culture: new challenges for creativity, intellectual property rights and copyright	9.0	06/11/18		14/03/19

Secure societies – Protecting freedom and security of Europe and its citizens

Protecting the infrastructure of Europe and the people in the European smart cities

SU-INFRA01-2018-2019-2020	Prevention, detection, response and mitigation of combined physical and cyber threats to critical infrastructure in Europe	24.0 22.0	15/03/18 14/03/19	23/08/18	22/08/19
SU-INFRA02-2019	Security for smart and safe cities, including for public space	16.0	14/03/19		22/08/19

Security

Disaster-Resilient Societies

SU-DRS02-2018-2019-2020	Technologies for first responders	28.0 21.0	15/03/18 14/03/19	23/08/18	22/08/19

Fight against Crime and Terrorism

SU-FCT02-2018-2019-2020	Technologies to enhance the fight against crime and terrorism	21.0 28.1	15/03/18 14/03/19	23/08/18	22/08/19
SU-FCT03-2018-2019-2020	Information and data stream management to fight against (cyber)crime and terrorism	8.0 8.0	15/03/18 14/03/19	23/08/18	22/08/19

Border and External Security

SU-BES02-2018-2019-2020	Technologies to enhance border and external security	21.0 21.0	15/03/18 14/03/19	23/08/18	22/08/19
SU-BES03-2018-2019-2020	Demonstration of applied solutions to enhance border and external security	10.0 10.0	15/03/18 14/03/19	23/08/18	22/08/19

Digital security

Cybersecurity, Digital Privacy and data protection

SU-DS01-2018	Cybersecurity preparedness - cyber range, simulation and economics	16.0	15/03/18	23/08/18	
SU-DS03-2019-2020	Digital Security and privacy for citizens and Small and Medium Enterprises and Micro Enterprises	18.0	14/03/19		22/08/19

Topic ID	Topic title	Budget (M€)	Opening	Deadline 2018	Deadline 2019 - 20
SU-DS04-2018-2020	Cybersecurity in the Electrical Power and Energy System (EPES): an armour against cyber and privacy attacks and data breaches	20.0	15/03/18	23/08/18	
SU-DS05-2018-2019	Digital security, privacy, data protection and accountability in critical sectors	8.5	15/03/18	23/08/18	
		20.0	14/03/19		22/08/19