**A guide to**



**ICT-related activities in WP2018-20 (2020 update)**

**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’ (‘Infrastructures’);
* 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: 3.7 billion euros),

° ‘Connecting economic and environmental gains - the Circular Economy‘ (CE) (1 billion euros),

° ‘**Digitising and transforming European industry and services**’ (**DT**) (**1.8 billion euros**),

° ‘Boosting the effectiveness of the Security Union’ (SU) (1 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, 2019 and 2020 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 international cooperation High Performance Computing and another one entitled ‘Boosting emerging technologies’, with its main topic for 2020 (‘FETPROACT-EIC-07-2020: FET Proactive: emerging paradigms and communities') covering three 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.

1. **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 Initiative1, 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’**. [[1]](#footnote-1)

**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:

* Artificial Intelligence and Technologies for Digitising European Industry and Economy,
* European Data Infrastructure (EDI),
* 5G and Connected and Automated Mobility,
* Next Generation Internet (NGI),
* 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]](#footnote-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 (EIC Accelerator), 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 (as EIC Pathfinder), 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’.

**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 parts dedicated to ‘personalised medicine’ and ‘Supporting the digital transformation in health and care’ also include aspects related to ICT in their scope.

1. **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 four 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’,**
* ‘Food and Natural Resources’.

1. **SC3 - Secure, clean and efficient energy**



The strategy outlined in the communication entitled ‘Accelerating Clean Energy Innovation’[[3]](#footnote-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 six following parts of the unique call of SC3,

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

* **‘Energy efficiency’**,
* ‘Buildings in energy transition (B4E)’,
* ‘Global leadership in renewables’,
* **‘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.

1. **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’**.

1. **SC5 - Climate action, environment, resource efficiency and raw materials**

Both 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)’,
* ‘Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement’.

1. **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’**.

1. **SC7 - Secure societies - Protecting freedom and security of Europe and its citizens**

This part of the work programme is structured around four calls out of which three 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,
* **‘Artificial Intelligence and security: providing a balanced assessment of opportunities and challenges for Law Enforcement in Europe’,** whichaddresses the challenges and opportunities offered by AI in Law Enforcement,
* ‘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.

**Important disclaimer**

This document presents an overview of ICT-related activities to be supported in the work programme 2018-2020 of Horizon 2020.

Readers should 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 | Deadline 2020 |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | |
| 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 | 181.2 163.3 354.2 | 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 07/11/17 09/10/19 | 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 |  |  |
| FETPROACT-04-2019 | Community building and roadmapping for high performance and smart electrochemical energy storage | 0.5 | 26/07/18 |  | 06/11/18 |  |
| **FET Proactive topics in the EIC Enhanced Pilot (2019-2020)** | | | | | | |
| FETPROACT-EIC-05-2019  (published in the EIC work programme part of Horizon 2020) | FET Proactive: emerging paradigms and communities | 87.4 | 19/03/19 |  | 08/10/19 |  |
| FETPROACT-EIC-06-2019  (published in the EIC work programme part of Horizon 2020) | EIC Transition to Innovation Activities | 26.0 | 19/03/19 |  | 08/10/19 |  |
| FETPROACT-EIC-07-2020 | FET Proactive: emerging paradigms and communities | 50.0 | 19/11/19 |  |  | 22/04/20 |
| FETPROACT-EIC-08-2020 | Environmental Intelligence | 18.0 | 19/11/19 |  |  | 22/04/20 |
| The topic(s) below are not part of the European Innovation Council Enhanced Pilot | | | | | | |
| FETPROACT-09-2020 | Neuromorphic computing technologies | 15.0 | 19/11/19 |  |  | 22/04/20 |
| **FET Proactive - High Performance Computing** | | | | | | |
| FETHPC-01-2018 | International Cooperation on HPC | 4.0 | 01/02/18 | 15/05/18 |  |  |
| FETHPC-04-2020 | International Cooperation on HPC | 0.5 | 19/11/19 |  |  | 22/04/20 |
| **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 |  |  |
| FETFLAG-04-2020 | Quantum Flagship - ERA-NET Cofund | 15.0 | 06/02/20 |  |  | 07/05/20 |
| FETFLAG-05-2020 | Complementary call on Quantum Computing | 19.7 | 09/07/19 |  |  | 13/11/19 |
| FETFLAG-06-2020 | International Cooperation on Quantum Technologies | 0.5 | 09/07/19 |  |  | 13/11/19 |
| FETFLAG-07-2020 | Training and Education on Quantum Technologies | 0.3 | 09/07/19 |  |  | 13/11/19 |
|  | | | | | | |
| **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-03-2020 | Integration and consolidation of the existing pan-European access mechanism to public research infrastructures and commercial services through the EOSC Portal | 40.9 | 19/11/19 |  |  | 22/04/20 |
| 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 |  |
| INFRAEOSC-07-2020 | Increasing the service offer of the EOSC Portal | 24.0 | 19/11/19 |  |  | 22/04/20 |
| **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 |  |
| INFRAIA-02-2020 | Integrating Activities for Starting Communities | 115.0 | 28/11/19 |  |  | 17/03/20 |
| INFRAIA-03-2020 | Pilot for a new model of Integrating Activities | 45.0 | 28/11/19 |  |  | 17/03/20 |
| **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 |  |  |
| INFRAEDI-05-2020 | Centres of Excellence in exascale computing | 20.0 | 09/07/19 |  |  | 13/11/19 |
| **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 |  |
| INFRAINNOV-03-2020 | Co-Innovation platform for research infrastructure technologies | 35.0 | 28/11/19 |  |  | 17/03/20 |
| INFRAINNOV-04-2020 | Innovation pilots | 30.0 | 28/11/19 |  |  | 17/03/20 |
|  | | | | | | |
| Industrial Leadership | | | | | | |
| **LEIT - Information and Communication Technologies** | | | | | | |
| **Information and Communication Technologies** | | | | | | |
| **Artificial Intelligence and Technologies for Digitising European Industry and Economy** | | | | | | |
| 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 |  |
| ICT-46-2020 | Robotics in Application Areas and Coordination & Support | 83.0 | 19/11/19 |  |  | 22/04/20 |
| ICT-47-2020 | Research and Innovation boosting promising robotics applications | 20.0 | 19/11/19 |  |  | 22/04/20 |
| ICT-48-2020 | Towards a vibrant European network of AI excellence centres | 50.0 | 09/07/19 |  |  | 13/11/19 |
| ICT-49-2020 | Artificial Intelligence on demand platform | 20.0 | 19/11/19 |  |  | 22/04/20 |
| ICT-38-2020 | Artificial intelligence for manufacturing | 48.0 | 09/07/19 |  |  | 16/01/20 |
| ICT-36-2020 | Disruptive photonics technologies | 47.5 | 19/11/19 |  |  | 22/04/20 |
| ICT-37-2020 | Advancing photonics technologies and application driven photonics components and the innovation ecosystem | 48.0 | 19/11/19 |  |  | 22/04/20 |
| ICT-50-2020 | Software Technologies | 30.0 | 09/07/19 |  |  | 16/01/20 |
| **European Data Infrastructure: HPC, Big Data and Cloud technologies** | | | | | | |
| 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 |  |  |
| ICT-51-2020 | Big Data technologies and extreme-scale analytics | 31.5 | 09/07/19 |  |  | 16/01/20 |
| ICT-40-2020 | Cloud Computing: towards a smart cloud computing continuum | 20.0 | 19/11/19 |  |  | 22/04/20 |
| **5G** | | | | | | |
| 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 |  |
| ICT-52-2020 | 5G PPP – Smart Connectivity beyond 5G | 55.0 | 19/11/19 |  |  | 22/04/20 |
| ICT-41-2020 | 5G PPP – 5G innovations for verticals with third party services | 49.0 | 19/11/19 |  |  | 22/04/20 |
| ICT-42-2020 | 5G PPP – 5G core technologies innovation | 49.0 | 09/07/19 |  |  | 16/01/20 |
| ICT-53-2020 | 5G PPP – 5G for Connected and Automated Mobility (CAM) | 30.0 | 09/07/19 |  |  | 13/11/19 |
| **Next Generation Internet (NGI)** | | | | | | |
| 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 |  |
| ICT-54-2020 | Blockchain for the Next Generation Internet | 20.0 | 09/07/19 |  |  | 16/01/20 |
| ICT-55-2020 | Interactive Technologies | 17.0 | 09/07/19 |  |  | 13/11/19 |
| ICT-56-2020 | Next Generation Internet of Things | 48.5 | 09/07/19 |  |  | 16/01/20 |
| ICT-57-2020 | An empowering, inclusive Next Generation Internet | 7.0 | 19/11/19 |  |  | 22/04/20 |
| ICT-44-2020 | Next Generation Media | 17.5 | 09/07/19 |  |  | 16/01/20 |
| **Cross-cutting activities** | | | | | | |
| 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 |  |  |
| ICT-45-2020 | Reinforcing European presence in international ICT standardisation: Standardisation Observatory and Support Facility | 4.0 | 09/07/19 |  |  | 13/11/19 |
| International Cooperation activities | | | | | | |
| ICT-58-2020 | International partnership building between European and African innovation hubs | 11.0 | 19/11/19 |  |  | 22/04/20 |
| **Digitising and transforming European industry and services: digital innovation hubs and platforms** | | | | | | |
| **Support to Hubs** | | | | | | |
| 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 | 71.0 | 09/07/19 |  |  | 13/11/19 |
| DT-ICT-04-2020 | Photonics Innovation Hubs | 19.0 | 19/11/19 |  |  | 22/04/20 |
| DT-ICT-05-2020 | Big Data Innovation Hubs | 30.5 | 09/07/19 |  |  | 13/11/19 |
| 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 | 30.0 | 19/11/19 |  |  | 22/04/20 |
| 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 | 40.0 | 19/11/19 |  |  | 22/04/20 |
| 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 | 50.0 | 01/02/18 | 29/05/18 |  |  |
| 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 |  |  |
| DT-NMBP-11-2020 | Open Innovation Platform for Materials Modelling | 12.0 | 03/07/19 |  |  | 05/02/20 |
| Industry Commons | | | | | | |
| DT-NMBP-40-2020 | Creating an open market place for industrial data | 4 | 03/07/19 |  |  | 12/12/19  14/05/20 |
| **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 |  |  |
| DT-FOF-07-2020 | Assembly of micro parts | 100  (incl. one other topic) | 03/07/19 |  |  | 05/02/20 |
| DT-FOF-09-2020 | Energy-efficient manufacturing system management |  |  |
| DT-FOF-11-2020 | Quality control in smart manufacturing |  |  |
| Biotechnology | | | | | | |
| BIOTEC-07-2020 | Multi-omics for genotype-phenotype associations | 56  (incl. one other topic) | 03/07/19 |  |  | 12/12/19  14/05/20 |
| **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 |  |
| LC-SPIRE-08-2020 | Novel high performance materials and components | 31.9 | 03/07/19 |  |  | 05/02/20 |
| DT-SPIRE-11-2020 | Artificial Intelligence and Big Data Technologies for Process Industries | 0.6 | 03/07/19 |  |  | 05/02/20 |
| **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 |  |  |
| LC-EEB-07-2020 | Smart Operation of Proactive Residential Buildings | 52.5  (incl. one other topic) | 03/07/19 |  |  | 05/02/20 |
| LC-EEB-08-2020 | Digital Building Twins |  |  |
|  | | | | | | |
| **LEIT - Space** | | | | | | |
| **Space** | | | | | | |
| **Earth observation** | | | | | | |
| 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 |  |
| **Artificial Intelligence and Space** | | | | | | |
| DT-SPACE-25-EO-2020 | Big data technologies and Artificial Intelligence for Copernicus | 10.0 | 05/11/19 |  |  | 05/03/20 |
| **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 |  |
| DT-SPACE-26-BIZ-2020 | Space hubs (support to start-ups) | 2.0 | 05/11/19 |  |  | 05/03/20 |
| **Space technologies, science and exploration** | | | | | | |
| 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 |  |  |
| SPACE-29-TEC-2020 | Satellite communication technologies | 9.0 | 05/11/19 |  |  | 05/03/20 |
| SPACE-30-SCI-2020 | Scientific data exploitation | 9.0 | 05/11/19 |  |  | 05/03/20 |
| **Artificial Intelligence and Space** | | | | | | |
| SPACE-12-TEC-2018 | SRC - Space robotics technologies | 18.0 | 31/10/17 | 06/03/18 |  |  |
| SPACE-27-TEC-2020 | SRC - Space robotics technologies | 9.0 | 05/11/19 |  |  | 05/03/20 |
| **EGNSS market uptake** | | | | | | |
| DT-SPACE-EGNSS-2-  2019-2020 | EGNSS applications fostering digitisation | 4.0 | 16/10/18 |  | 05/03/19 |  |
|  | | | | | | |
| Societal Challenges | | | | | | |
| **Health, demographic change and wellbeing** | | | | | | |
| **Better Health and care, economic growth and sustainable health systems** | | | | | | |
| **Personalised medicine** | | | | | | |
| 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-BHC-06-2020 | Digital diagnostics – developing tools for supporting clinical decisions by integrating various diagnostic data | 40.0 | 04/07/19 |  |  | 07/04/20 |
| 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 |  |  |
| **Innovative health and care industry** | | | | | | |
| SC1-HCO-18-2020 | Developing methodological approaches for improved clinical investigation and evaluation of high-risk medical devices | 2.0 | 04/07/19 |  |  | 07/04/20 |
| **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 |  |
| SC1-BHC-20A-2020 | Pre-commercial procurement (PCP) for integrated care solutions | 25.0  (incl. one other topic) | 04/07/19 |  |  | 07/04/20 |
| **Supporting the digital transformation in health and care** | | | | | | |
| SC1-DTH-12-2020 | Use of Real-World Data to advance research on the management of complex chronic conditions | 41.0 | 04/07/19 |  |  | 07/04/20 |
| SC1-DTH-13-2020 | Implementation research for scaling up and transfer of innovative solutions involving digital tools for people-centred care | 20.0 | 04/07/19 |  |  | 24/09/19  *07/04/20* |
| SC1-HCC-10-2020 | Towards a Health research and innovation Cloud: Capitalising on data sharing initiatives in health research | 3.0 | 04/07/19 |  |  |  |
| **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 |  |  |  |
| SC1-DTH-02-2020 | Personalised early risk prediction, prevention and intervention based on Artificial Intelligence and Big Data technologies | 32.0 | 19/11/19 |  |  | 22/04/20 |
| SC1-DTH-03-2018 | Adaptive smart working and living environments supporting active and healthy ageing | 25.0 | 07/11/17 | 24/04/18 |  |  |
| SC1-DTH-04-2020 | International cooperation in smart living environments for ageing people | 8.0 | 19/11/19 |  |  | 22/04/20 |
| 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-06-2020 | Accelerating the uptake of computer simulations for testing medicines and medical devices | 32.0 | 19/11/19 |  |  | 22/04/20 |
| SC1-DTH-07-2018 | Exploiting the full potential of in-silico medicine research for personalized 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-DTH-14-2020 | Pre-commercial Procurement for Digital Health and Care Solutions | 9.0 | 19/11/19 |  |  | 22/04/20 |
| 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 |  |  |
| SC1-HCC-06-2020 | Coordination and Support to better data and secure cross-border digital infrastructures building on European capacities for genomics and personalised medicine | 4.0 | 09/07/19 |  |  | 13/11/19 |
| SC1-HCC-07-2020 | Support for European eHealth Interoperability roadmap for deployment | 3.0 | 09/07/19 |  |  | 13/11/19 |
| SC1-HCC-08-2020 | Scaling up innovation for active and healthy ageing | 2.0 | 19/11/19 |  |  | 22/04/20 |
| SC1-HCC-09-2020 | Supporting deployment of eHealth in low and lower middle income countries in Africa for better health outcomes | 2.0 | 19/11/19 |  |  | 22/04/20 |
| **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 |  |  |
| DT-TDS-04-2020 | AI for Genomics and Personalised Medicine | 35.0 | 19/11/19 |  |  | 22/04/20 |
| DT-TDS-05-2020 | AI for Health Imaging | 35.0 | 09/07/19 |  |  | 13/11/19 |
| **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 |  |  |
| **Food and Natural Resources** | | | | | | |
| FNR-02-2020 | Developing long-term monitoring and evaluation frameworks for the Common Agricultural Policy | 2.0 | 15/10/19 |  |  | 22/01/20 |
|  | | | | | | |
| **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 |  |
| Buildings in energy transition (B4E) | | | | | | |
| LC-SC3-B4E-3-2020 | Upgrading smartness of existing buildings through innovations for legacy equipment | 8.0 | 05/03/20 |  |  | 10/09/20 |
| LC-SC3-B4E-5-2020 | Integrated design concepts for energy-efficient ICT in buildings | 3.0 | 16/07/19 |  |  | 15/01/20 |
| LC-SC3-B4E-6-2020 | Big data for buildings | 12.0 | 16/07/19 |  |  | 15/01/20 |
| LC-SC3-B4E-7-2020 | European building stock data 4.0 | 4.0 | 16/07/19 |  |  | 15/01/20 |
| LC-SC3-B4E-10-2020 | Self-assessment and self-optimisation of buildings and appliances for a better energy performance | 6.0 | 16/07/19 |  |  | 15/01/20 |
| LC-SC3-B4E-14-2020 | Enabling next-generation of smart energy services valorising energy efficiency and flexibility at demand-side | 6.0 | 05/03/20 |  |  | 10/09/20 |
| Global leadership in renewables | | | | | | |
| LC-SC3-RES-31-2020 | Offshore wind basic science and balance of plant | 8.0 | 03/12/19 |  |  | 21/04/20 |
| **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 |  |
| LC-SC3-EC-3-2020 | Consumer engagement and demand response | 16.0 | 03/09/19 |  |  | 29/01/20 |
| 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  15.0 | 05/12/17  03/09/19 | 05/04/18 |  | 29/01/20 |
| LC-SC3-ES-4-2018-2020 | Decarbonising energy systems of geographical Islands | 19.0  40.0 | 05/12/17  03/09/19 | 05/04/18 |  | 29/01/20 |
| 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  22.0 | 05/12/17  03/09/19 | 05/04/18 |  | 29/01/20 |
| LC-SC3-ES-6-2019 | Research on advanced tools and technological development | 25.3 | 05/09/18 |  | 05/02/19 |  |
| LC-SC3-ES-10-2020 | DC – AC/DC hybrid grid for a modular, resilient and high RES share grid development | 14.0 | 03/09/19 |  |  | 29/01/20 |
| **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 |  |
| LC-SC3-SCC-2-2020 | Positive Energy Districts and Neighbourhoods for urban energy transitions | 5.0 | 05/05/20 |  |  | 01/09/20 |
|  | | | | | | |
| Smart, green and integrated transport | | | | | | |
| **Mobility for growth** | | | | | | |
| **Building a Low-Carbon, Climate Resilient Future: Low-Carbon and Sustainable Transport** | | | | | | |
| LC-MG-1-12-2020 | Cities as climate-resilient, connected multimodal nodes for smart and clean mobility: new approaches towards demonstrating and testing innovative solutions | 18.0 | 03/09/19 |  |  | 09/01/20  08/09/20 |
| **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 |  |
| MG-2-11-2020 | Network and traffic management for future mobility | 20.0 | 03/09/19 |  |  | 09/01/20  08/09/20 |
| MG-2-13-2020 | Coordination and support for an integrated freight transport and logistics system | 1.0 | 03/12/19 |  |  | 21/04/20 |
| **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*** |  |  |
| MG-3-4-2020 | Innovative electric network architectures and systems, optimising global energy, electrical power, data and communication for aviation | 10.0 | 03/12/19 |  |  | 21/04/20 |
| MG-3-6-2020 | Towards sustainable urban air mobility | 15.0 | 03/12/19 |  |  | 21/04/20 |
| MG-3-7-2020 | Improved Production and Maintenance Processes in Shipyards | 15.0 | 03/12/19 |  |  | 21/04/20 |
| **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 |  |
| MG-4-7-2020 | Digitalisation of the transport system: data sharing | 3.0 | 03/12/19 |  |  | 21/04/20 |
| MG-4-8-2020 | Advanced research methods and tools in support of transport/mobility researchers, planners and policy makers | 3.0 | 03/12/19 |  |  | 21/04/20 |
| **Blue growth** | | | | | | |
| MG-BG-01-2018 Unmanned and autonomous survey activities at sea | 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 |  |
| DT-ART-05-2020 | Efficient and safe connected and automated heavy-duty vehicles in real logistics operations | 20.0 | 03/12/19 |  |  | 21/04/20 |
| DT-ART-06-2020 | Large-scale, cross-border demonstration of connected and highly automated driving functions for passenger cars | 30.0 | 03/12/19 |  |  | 21/04/20 |
| **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 |  |
| LC-GV-08-2020 | Next generation electrified vehicles for urban and suburban use | 25.0 | 03/12/19 |  |  |  |
|  | | | | | | |
| **Climate action, environment, resource efficiency and raw materials** | | | | | | |
| **Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement** | | | | | | |
| **Decarbonisation** | | | | | | |
| LC-CLA-11-2020 | Innovative nature-based solutions for carbon neutral cities and improved air quality | 30.0 | 12/11/19 |  |  | 13/02/20  ***03/09/20*** |
| Climate adaptation, impacts and services | | | | | | |
| LC-CLA-12-2020 | Advancing climate services | 22.0 | 12/11/19 |  |  | 13/02/20  ***03/09/20*** |
| Inter-relations between climate change, biodiversity and ecosystem services | | | | | | |
| LC-CLA-16-2020 | Multi-hazard risk management for risk-informed decision-making in the E.U. | 5.0 | 12/11/19 |  |  | 13/02/20  ***03/09/20*** |
| Earth Observation | | | | | | |
| LC-CLA-19-2020 | Integrated GEOSS climate applications to support adaptation and mitigation measures of the Paris Agreement | 10.0 | 12/11/19 |  |  | 13/02/20  ***03/09/20*** |
| **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 | 30.0 | 14/11/18 |  | 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  41.86 | 14/11/18  12/11/19 |  | 19/02/19 **04/09/19** | 13/02/20 **03/09/20** |
| **Water for our environment, economy and society** | | | | | | |
| 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 |  |  |
| Protecting and leveraging the value of our natural and cultural assets: Nature-based solutions, disaster risk reduction and natural capital accounting | | | | | | |
| SC5-33-2020 | Monitoring ecosystems through research, innovation and technology | 3.0 | 12/11/19 |  |  | 13/02/20 |
|  | | | | | | |
| **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 11.0 | 07/11/17 06/11/18 05/11/19 | 13/03/18 | 14/03/19 | 12/03/20 |
| 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 |  |
| DT-TRANSFORMATIONS-20-2020 | European Competence Centre for the preservation and conservation of Monuments and Site | 3.0 | 05/11/19 |  |  | 12/03/20 |
| DT-TRANSFORMATIONS-21-2020 | Mentoring scheme for schools: mainstreaming innovation by spreading the advanced ICT-based teaching practices to a wide circle of schools | 2.0 | 05/11/19 |  |  | 12/03/20 |
| DT-TRANSFORMATIONS-23-2020 | To set up a digital accessibility observatory as a forum to take stock of market and technological developments, monitor progress in digital accessibility and provide opportunities for exchange of best practices | 1.5 | 05/11/19 |  |  | 12/03/20 |
| **Governance for the future** | | | | | | |
| DT-GOVERNANCE-05-  2018-2019-2020 | New forms of delivering public goods and inclusive public services | 1.5 8.0 20.0 | 07/11/17 06/11/18 05/11/19 | 13/03/18 | 14/03/19 | 12/03/20 |
| DT-GOVERNANCE-12-  2019-2020 | Pilot on using the European cloud infrastructure for public administrations | 8.0 10.0 | 06/11/18 05/11/19 |  | 14/03/19 | 12/03/20 |
| 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 |  |
| DT-GOVERNANCE-22-2020 | Citizen-centric public services in local and regional administrations | 1.5 | 05/11/19 |  |  | 12/03/20 |
|  | | | | | | |
| **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 20.7 | 15/03/18 14/03/19 12/03/20 | 23/08/18 | 22/08/19 | 27/08/20 |
| SU-INFRA02-2019 | Security for smart and safe cities, including for public space | 16.0 | 14/03/19 |  | 22/08/19 |  |
| **Artificial Intelligence and security: providing a balanced assessment of opportunities and challenges for Law Enforcement in Europe** | | | | | | |
| SU-AI01-2020 | Developing a research roadmap regarding Artificial Intelligence in support of Law Enforcement | 1.5 | 12/03/20 |  |  | 27/08/20 |
| SU-AI02-2020 | Secure and resilient Artificial Intelligence technologies, tools and solutions in support of Law Enforcement and citizen protection, cybersecurity operations and prevention and protection against adversarial Artificial Intelligence | 17.0 | 12/03/20 |  |  | 27/08/20 |
| SU-AI03-2020 | Human factors, and ethical, societal, legal and organisational aspects of using Artificial Intelligence in support of Law Enforcement | 1.5 | 12/03/20 |  |  | 27/08/20 |
| **Security** | | | | | | |
| **Disaster-Resilient Societies** | | | | | | |
| SU-DRS02-2018-2019-  2020 | Technologies for first responders | 28.0 21.0 21.0 | 15/03/18 14/03/19 12/03/20 | 23/08/18 | 22/08/19 | 27/08/20 |
| **Fight against Crime and Terrorism** | | | | | | |
| SU-FCT02-2018-2019-  2020 | Technologies to enhance the fight against crime and terrorism | 21.0 28.1 28.0 | 15/03/18 14/03/19 12/03/20 | 23/08/18 | 22/08/19 | 27/08/20 |
| SU-FCT03-2018-2019-  2020 | Information and data stream management to fight against (cyber)crime and terrorism | 8.0 8.0 8.0 | 15/03/18 14/03/19 12/03/20 | 23/08/18 | 22/08/19 | 27/08/20 |
| **Border and External Security** | | | | | | |
| SU-BES02-2018-2019-  2020 | Technologies to enhance border and external security | 21.0 21.0 21.0 | 15/03/18 14/03/19 12/03/20 | 23/08/18 | 22/08/19 | 27/08/20 |
| SU-BES03-2018-2019-  2020 | Demonstration of applied solutions to enhance border and external security | 10.0 10.0 10.0 | 15/03/18 14/03/19 12/03/20 | 23/08/18 | 22/08/19 | 27/08/20 |
| **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-DS02-2020 | Intelligent security and privacy management | 38.0 | 12/03/20 |  |  | 27/08/20 |
| SU-DS03-2019-2020 | Digital Security and privacy for citizens and Small and Medium Enterprises and Micro Enterprises | 18.0 10.8 | 14/03/19 12/03/20 |  | 22/08/19 | 27/08/20 |
| 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 20.0 | 15/03/18 12/03/20 | 23/08/18 |  | 27/08/20 |
| SU-DS05-2018-2019 | Digital security, privacy, data protection and accountability in critical sectors | 8.5 20.0 | 15/03/18 14/03/19 | 23/08/18 | 22/08/19 |  |
|  | | | | | | |
| European Innovation Council (EIC) Pilot | | | | | | |
| **EIC Accelerator pilot (SME Instrument)** | | | | | | |
| EIC-SMEInst-2018-2020 | SME instrument | 479.74          689.26         654.00 | 07/11/17          07/11/17         07/11/17 | Phase 1:  08/02/18  03/05/18  05/09/18  07/11/18 Phace 2:  10/01/18  14/03/18  23/05/18  10/10/18 | Phase 1:  13/02/19  07/05/19  05/09/19 Phase 2:  09/01/19  03/04/19  05/06/19  09/10/19 | Phase 2:  08/01/20  18/03/20  19/05/20  07/10/20 |
| Fast Track to Innovation (FTI) | | | | | | |
| EIC-FTI-2018-2020 | Fast Track to Innovation (FTI) | 100.0   100.0   100.0 | 07/11/17   07/11/17   07/11/17 | 21/02/18 31/05/18 23/10/18 | 21/02/19 23/05/19 22/10/19 | 19/02/20 09/06/20 27/10/20 |

1. COM(2016) 178 : European Cloud Initiative - Building a competitive data and knowledge economy in Europe [↑](#footnote-ref-1)
2. COM(2016) 180 : Digitising European Industry - Reaping the full benefits of a Digital Single Market [↑](#footnote-ref-2)
3. COM(2016)763 [↑](#footnote-ref-3)