

I. Excellent Science

Bolster the EU's position as a world **leader in science**, attracting the best brains and helping our scientists collaborate and share **ideas across Europe**

- European Research Council (ERC)
- Future and emerging technologies (FET)
- Marie Skłodowska-Curie Actions
- Research infrastructure

II. Industrial Leadership

Speed up **development of technologies** and **innovations** that will underpin tomorrow's **businesses** and help innovative European SMEs to grow into world-leading companies

- Leadership in enabling and industrial technologies (LEIT)
- Access to risk finance
- Innovation in SMEs

III. Societal Challenges

Seven priority challenges where targeted investment in research and innovation can have a real **impact benefitting the citizen**

- Health, demographic change and wellbeing
- Food security, agriculture, bio-economy
- Energy
- Transport
- Environment
- Societies
- Security

Public-Public Partnerships (P2P)

ERA-Nets

Joint Programming

Art. 185 Actions

IV. Science with and for Society

V. Spreading Excellence and Widening Participation

VI. EURATOM

VII. European Institute of Innovation and Technology (EIT)

I. Excellent Science



European Research Council (ERC)

ERC Starting Grant		
■	ERC-2019-StG	tba (Autumn 2018)
ERC Consolidator Grant		
■	ERC-2018-CoG	15.02.18
ERC Advanced Grant		
■	ERC-2018-AdG	30.08.18
ERC Synergy Grant		
■	ERC-2019-SyG	tba (Autumn 2018)
ERC Proof of Concept Grant		
■	ERC-2018-PoC	16.01.18 18.04.18 11.09.18

Future and Emerging Technologies (FET)

FET Open – Novel ideas for radically new technologies		
■	FETOPEN-01-2018-2019-2020: FET Open challenging current thinking	16.05.18 24.01.19 18.09.19 13.05.20
●	FETOPEN-02-2018: FET-Open Coordination and Support Actions	11.04.18
●	FETOPEN-03-2018-2019-2020: FET Innovation Launchpad	16.10.18 08.10.19 14.10.20
FET Proactive - Boosting emerging technologies		
■	FETPROACT-01-2018: FET Proactive: emerging paradigms and communities	22.03.18 tbc 2020
●	FETPROACT-02-2018: Community building in Neuromorphic Computing Technologies	22.03.18
	FETPROACT-03-2018: FET ERA-NET Cofund	18.12.18
FET Proactive – High Performance Computing		
■	FETHPC-01-2018: International Cooperation on HPC	15.05.18
■ ●	FETHPC-02-2019: Extreme scale computing technologies, methods and algorithms for key applications and support to the HPC ecosystem	24.09.19
	HPC PPP - Co-design of extreme scale HPC systems and applications	tbc 2020
FET FLAGSHIPS – Tackling grand interdisciplinary science and technology challenges		
●	FETFLAG-01-2018: Preparatory Actions for new FET Flagships	20.02.18 [®]
	FETFLAG-02-2018: ERA-NET Cofund for FET Flagships	17.04.18
● ■	FETFLAG-03-2018: FET Flagship on Quantum Technologies	20.02.18
	Quantum Flagship – QuantERA II ERA-NET Cofund	tbc 2020

I. Excellent Science



Marie Skłodowska-Curie Actions (MSCA)

MSCA Innovative Training Networks		
	MSCA-ITN-2018: Innovative Training Networks	17.01.18
	MSCA-ITN-2019: Innovative Training Networks	15.01.19
	MSCA-ITN-2020: Innovative Training Networks	09.01.20

MSCA Individual Fellowships		
	MSCA-IF-2018: Individual Fellowships	12.09.18
	MSCA-IF-2019: Individual Fellowships	11.09.19
	MSCA-IF-2020: Individual Fellowships	09.09.20

MSCA Research and Innovation Staff Exchange		
	MSCA-RISE-2018: Research and Innovation Staff Exchange	21.03.18
	MSCA-RISE-2019: Research and Innovation Staff Exchange	02.04.19
	MSCA-RISE-2020: Research and Innovation Staff Exchange	07.04.20

MSCA Co-Funding of regional, national and international programmes		
	MSCA-COFUND-2018: Co-funding of regional, national and international programmes	27.09.18
	MSCA-COFUND-2019: Co-funding of regional, national and international programmes	26.09.19
	MSCA-COFUND-2020: Co-funding of regional, national and international programmes	29.09.20

MSCA European Researchers' Night		
●	MSCA-NIGHT-2018: European Researchers' Night	14.02.18
	MSCA-NIGHT-2020: European Researchers' Night	08.01.20

I. Excellent Science



European Research Infrastructures (including e-Infrastructures)

Development and long-term sustainability of new pan-European research infrastructures		
■	INFRADEV-01-2019-2020: Design Studies	12.11.19
●	INFRADEV-02-2019-2020: Preparatory Phase of new ESFRI projects	29.01.19 tbc 2020
■	INFRADEV-03-2018-2019: Individual support to ESFRI and other world-class research infrastructures	22.03.18 20.03.19
Implementing the European Open Science Cloud		
■	INFRAEOSC-01-2018: Access to commercial services through the EOSC hub	22.03.18
■	INFRAEOSC-02-2019: Prototyping new innovative services	29.01.19
	INFRAEOSC-03-2020: Integration and consolidation of pan-European access mechanisms to public e-infrastructures and commercial services through the EOSC hub	tbc 2020
■	INFRAEOSC-04-2018: Connecting ESFRI infrastructures through Cluster projects	22.03.18
■ ●	INFRAEOSC-05-2018-2019: Support to the EOSC Governance	19.06.18 21.11.18
■	INFRAEOSC-06-2019-2020: Enhancing the EOSC portal and connecting thematic clouds	20.03.19 tbc 2020
Integrating and opening research infrastructures of European interest		
■	INFRAIA-01-2018-2019: Integrating Activities for Advanced Communities	22.03.18 20.03.19
	INFRAIA-02-2020: Integrating Activities for Starting Communities	tbc 2020
	INFRAIA-03-2020: Pilot for a new model of Integrating Activities	tbc 2020
European Data Infrastructure		
■	INFRAEDI-01-2018: Pan-European High Performance Computing infrastructure and services (PRACE)	22.03.18
■ ●	INFRAEDI-02-2018: HPC PPP - Centres of Excellence on HPC	22.03.18
●	INFRAEDI-03-2018: Support to the governance of High Performance Computing Infrastructures	22.03.18
	INFRAEDI-04-2020: Support to Public Procurement of innovative HPC systems	tbc 2020
Demonstrating the role of Research Infrastructures in the translation of Open Science into Open Innovation		
■	INFRAINNOV-01-2019: Stimulate the innovation potential of SMEs	29.01.19
●	INFRAINNOV-02-2019: Network of research infrastructure Industrial Liaison and Contact Officers	20.03.19
	INFRAINNOV-03-2020: Co-Innovation platform for research infrastructure technologies	tbc 2020
	INFRAINNOV-04-2020: Innovation pilots	tbc 2020
Support to policy and international cooperation		
■ ●	INFRASUPP-01-2018-2019: Policy and international cooperation measures for research infrastructures	22.03.18 20.03.19
	INFRASUPP-02-2020: Strengthening the human capital of research infrastructures	tbc 2020

II. Industrial Leadership



Leadership in enabling and industrial technologies (LEIT) – Information and Communication Technologies (ICT)

ICT - Technologies for Digitizing European Industry		
■●	ICT-01-2019: Computing technologies and engineering methods for cyber-physical systems of systems	28.03.19
■	ICT-02-2018: Flexible and Wearable Electronics	17.04.18
◆	ICT-03-2018-2019: Photonics manufacturing pilot lines for photonic components and devices	17.04.18 28.03.19
◆■	ICT-04-2018: Photonics based manufacturing, access to photonics, datacom photonics and connected lighting	17.04.18
■◆●	ICT-05-2019: Application driven photonics components	28.03.19
■	ICT-06-2019: Unconventional nanoelectronics	28.03.19
■◆●	ICT-07-2018: Electronic Smart Systems (ESS)	17.04.18
■	ICT-08-2019: Security and resilience for collaborative manufacturing environments	28.03.19
■◆●	ICT-09-2019-2020: Robotics in application areas	28.03.19 tbc 2020
■	ICT-10-2019-2020: Robotics core technology	28.03.19 tbc 2020
	ICT-36-2020 Disruptive photonics technologies driven photonics components and the innovation ecosystem	tbc 2020
	ICT-37-2020 Advancing photonics technologies and application	tbc 2020
	ICT-38-2020 Artificial intelligence for manufacturing	tbc 2020
	ICT-39-2020 Digital advances for local/urban manufacturing	tbc 2020
	ICT-09-2020 Robotics in Applications Areas	tbc 2020
	ICT-10-2020 Robotics Core Technology	tbc 2020

ICT - European Data Infrastructure: HPC, Big Data and Cloud technologies		
◆	ICT-11-2018-2019: HPC and big data enabled large-scale test-beds and applications	17.04.18 14.11.18
■●	ICT-12-2018-2020: Big data technologies and extreme-scale analytics	17.04.18 tbc 2020
■◆●	ICT-13-2018-2019: Supporting the emergence of data markets and the data economy	17.04.18 28.03.19
■	ICT-14-2019: Co-designing Extreme scale Demonstrators (EsD)	14.11.18
■●	ICT-15-2019-2020: Cloud computing	28.03.19 tbc 2020
■◆●	ICT-16-2018: Software technologies	17.04.18
	ICT-40-2020: Advanced testbeds for innovative cloud technologies	tbc 2020

ICT - 5G		
■	ICT-17-2018: 5G End to End Facility	31.01.18
◆	ICT-18-2018: 5G for cooperative, connected and automated mobility (CCAM)	17.04.18
■●	ICT-19-2019: Advanced 5G validation trials across multiple vertical industries	14.11.18
■	ICT-20-2019-2020: 5G Long term evolution	28.03.19 tbc 2020
●	ICT-21-2018: EU-US Collaboration for advanced wireless platforms	17.04.18
■	ICT-22-2018: EU-China 5G collaboration	31.01.18
■	ICT-23-2019: EU-Taiwan 5G collaboration	15.01.19
	ICT-41-2020: Network innovations with 5G third party services	tbc 2020
	ICT-42-2020: 5G core technologies innovation	tbc 2020
	ICT-43-2020: EU-Brazil 5G collaboration	tbc 2020

ICT - Next Generation Internet (NGI)		
■●	ICT-24-2018-2019: Next Generation Internet - an open Internet initiative	17.04.18 28.03.19
■●	ICT-25-2018-2020: Interactive technologies	17.04.18 14.11.18 tbc 2020
■	ICT-26-2018-2020: Artificial Intelligence	17.04.18 tbc 2020
●	ICT-27-2018-2020: Internet of Things	17.04.18 tbc 2020
■◆●	ICT-28-2018: Future hyper-connected sociality	17.04.18
◆■	ICT-29-2018: A multilingual Next Generation Internet	17.04.18
●◆	ICT-30-2019-2020: An empowering, inclusive Next Generation Internet	28.03.19 tbc 2020
●■	ICT-31-2018-2019: EU-US collaboration on NGI	17.04.18 28.03.19
	ICT-44-2020: Next Generation Media	tbc 2020

II. Industrial Leadership



ICT - Cross-cutting activities		
● ■	ICT-32-2018: STARTS – The Arts stimulating innovation	17.04.18
● ●	ICT-33-2019: Startup Europe for Growth and Innovation Radar	28.03.19
★	ICT-34-2018-2019: Pre-Commercial Procurement open	17.04.18
●	ICT-35-2018: Fintech: Support to experimentation frameworks and regulatory compliance	17.04.18
	ICT-45-2020: Reinforcing European presence in international ICT standardisation: Standardisation Observatory and Support Facility	tbc 2020



Digitising and transforming European industry and services: Digital innovation hubs and platforms - Support to Hubs		
● ●	DT-ICT-01-2019: Smart Anything Everywhere	02.04.19
● ●	DT-ICT-02-2018: Robotics - Digital Innovation Hubs (DIH)	17.04.18
●	DT-ICT-03-2020: I4MS (phase 4) - uptake of digital game changers and digital manufacturing platforms	tbc 2020
●	DT-ICT-04-2020: Photonics Innovation Hubs	tbc 2020
●	DT-ICT-05-2020: Big Data Innovation Hubs	tbc 2020
●	DT-ICT-06-2018: Coordination and Support Activities for Digital Innovation Hub network	17.04.18

Digitising and transforming European industry and services: Digital innovation hubs and platforms - Platforms and Pilots		
● ●	DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories	17.04.18 02.04.19
●	DT-ICT-08-2019: Agricultural digital integration platforms	14.11.18
●	DT-ICT-09-2020: Digital service platforms for rural economies	tbc 2020
●	DT-ICT-10-2018-19: Interoperable and smart homes and grids	14.11.18
●	DT-ICT-11-2019: Big data solutions for energy	02.04.19
●	DT-ICT-12-2020: The smart hospital of the future	tbc 2020
●	DT-ICT-13-2019: Digital Platforms/Pilots Horizontal Activities	14.11.18

Call - Cybersecurity		
●	SU-ICT-01-2018: Dynamic countering of cyber-attacks	28.08.18
■	SU-ICT-02-2020: Building blocks for resilience in evolving ICT systems	19.11.19
●	SU-ICT-03-2020: Advanced cybersecurity and digital privacy technologies	tbc 2020
●	SU-ICT-04-2019: Quantum Key Distribution testbed	28.08.18

Call - EU-Japan Joint Call		
■	EUJ-01-2018: Advanced technologies (Security/Cloud/IoT/BigData) for a hyper-connected society in the context of Smart City	31.01.18
■	EUJ-02-2018: 5G and beyond	31.01.18

Call - EU-Korea Joint Call		
■	EUK-01-2018: Cloud, IoT and AI technologies	31.01.18
■	EUK-02-2018: 5G	31.01.18



II. Industrial Leadership



Leadership in enabling and industrial technologies (LEIT) – Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing (NMBP)

Foundations for tomorrow's industry: Open innovation test beds		
◆	DT-NMBP-01-2018: Open Innovation Test Beds for Lightweight, nano-enabled multifunctional composite materials and components	23.01.18 [®]
◆	DT-NMBP-02-2018: Open Innovation Test Beds for Safety Testing of Medical Technologies for Health	23.01.18 [®]
◆	DT-NMBP-03-2019: Open Innovation Test Beds for nano-enabled surfaces and membranes	22.01.19 [®]
◆	DT-NMBP-04-2020: Open Innovation Test Beds for bio-based nano-materials and solutions	tbc 2020
◆	DT-NMBP-05-2020: Open Innovation Test Beds for functional materials for building envelopes	tbc 2020
◆	DT-NMBP-06-2020: Open Innovation Test Beds for nano-pharmaceuticals production	tbc 2020
Foundations for tomorrow's industry: Materials characterisation and computational modeling		
◆	DT-NMBP-07-2018: Open Innovation Test Beds for Characterisation	23.01.18 [®]
■	DT-NMBP-08-2019: Real-time nano-characterisation technologies	22.01.19 [®]
◆	DT-NMBP-09-2018: Accelerating the uptake of materials modelling software	23.01.18 [®]
■	DT-NMBP-10-2019: Adopting materials modelling to challenges in manufacturing processes	22.01.19 [®]
◆	DT-NMBP-11-2020: Open Innovation Test Beds for Materials Modelling	tbc 2020
●	DT-NMBP-12-2019: Sustainable Nano-Fabrication	03.09.19
Foundations for tomorrow's industry: Governance, science-based risk assessment and regulatory aspects		
■	NMBP-13-2018: Risk Governance of nanotechnology	23.01.18 [®]
■	NMBP-14-2018: Nanoinformatics: from materials models to predictive toxicology and ecotoxicology	23.01.18 [®]
■	NMBP-15-2019: Safe by design, from science to regulation: metrics and main sectors	22.01.19 [®]
■	NMBP-16-2020: Safe by design, from science to regulation: behaviour of multi-component nanomaterials	tbc 2020
■	NMBP-17-2020: Regulatory science for medical technology products	tbc 2020
Transforming European industry: Factories of the Future (FOF)		
●	DT-FOF-01-2018: Skills needed for new Manufacturing jobs	22.02.18
■	DT-FOF-02-2018: Effective Industrial Human-Robot Collaboration	22.02.18
■	DT-FOF-03-2018: Innovative manufacturing of opto-electrical parts	22.02.18
◆	DT-FOF-04-2018: Pilot lines for metal Additive Manufacturing	22.02.18
◆	DT-FOF-05-2019: Open Innovation for collaborative production engineering	21.02.19
◆	DT-FOF-06-2019: Refurbishment and re-manufacturing of large industrial equipment	21.02.19
■	DT-FOF-07-2020: Reliable and accurate assembly of micro parts	tbc 2020
◆	DT-FOF-08-2019: Pilot lines for modular factories (IA 50%)	21.02.19
◆	DT-FOF-09-2020: Holistic energy-efficient factory management	tbc 2020
◆	DT-FOF-10-2020: Pilot lines for large-part high-precision manufacturing (IA 50%)	tbc 2020
◆	DT-FOF-11-2020: Quality control in smart manufacturing	tbc 2020
■	DT-FOF-12-2019: Handling systems for flexible materials	22.01.19
◆	DT-NMBP-18-2019: Materials, manufacturing processes and devices for organic and large area electronics	22.01.19 [®]
◆	DT-NMBP-19-2019: Advanced materials for additive manufacturing	22.01.19 [®]
◆	DT-NMBP-20-2018: A digital 'plug and produce' online equipment platform for manufacturing	08.03.18
Transforming European industry: Biotechnology		
●	BIOTEC-01-2018: Standardisation in Synthetic Biology	22.02.18
■	BIOTEC-02-2019: Boosting the efficiency of photosynthesis	22.01.19 [®]
■	BIOTEC-03-2018: Synthetic biology to expand diversity of nature's chemical	23.01.18 [®]

II. Industrial Leadership



Transforming European industry: Biotechnology		
	production	
■	CE-BIOTEC-04-2018: New biotechnologies for environmental remediation	25.04.18
■	CE-BIOTEC-05-2019: Microorganism communities for plastics bio-degradation	24.04.19
◆	BIOTEC-06-2020: Reprogrammed microorganisms for biological sensors	tbc 2020
■	BIOTEC-07-2020: Multi-omics for the optimisation of genotype-phenotype associations	tbc 2020
Transforming European industry: Medical technology innovations		
■	NMBP-21-2020: Custom-made biological scaffolds for specific tissue regeneration and repair	tbc 2020
■	NMBP-22-2018: Osteoarticular tissues regeneration	23.01.18 [®]
■	DT-NMBP-23-2020: Next generation organ-on-chip	tbc 2020
Industrial sustainability: Sustainable process industry (SPIRE)		
◆	CE-SPIRE-01-2020: Industrial symbiosis	tbc 2020
◆	CE-SPIRE-02-2018: Processing of material feedstock using non-conventional energy sources	22.02.18
◆	CE-SPIRE-03-2018: Energy and resource flexibility in highly energy intensive industries (IA 50%)	22.02.18
◆	CE-SPIRE-04-2019: Efficient integrated downstream processes	21.02.19
◆	CE-SPIRE-05-2019: Adaptation to variable feedstock through retrofitting (IA 50%)	21.02.19
◆	DT-SPIRE-06-2019: Digital technologies for improved performance in cognitive production plants	21.02.19
◆	CE-SPIRE-07-2020: Recovery of industrial water, thermal energy and substances contained therein	tbc 2020
■	CE-SPIRE-08-2020: Improved Industrial Processing using novel high-temperature resistant materials	tbc 2020
◆	CE-SPIRE-09-2020: Making the most of mineral waste, by-products and recycled material as feed for high volume production	tbc 2020
◆	CE-SPIRE-10-2018: Efficient recycling processes for plastic containing materials	22.02.18
Industrial sustainability: Catalysing the circular economy		
■	CE-NMBP-24-2018: Catalytic transformation of hydrocarbons	23.01.18 [®]
■	CE-NMBP-25-2019: Photocatalytic synthesis	22.01.19 [®]
■	CE-NMBP-26-2018: Smart plastic materials with intrinsic recycling properties by design	23.01.18 [®]
Industrial sustainability: Clean energy through innovative materials		
■	LC-NMBP-27-2019: Strengthening EU materials technologies for non-automotive battery storage	22.01.19 [®]
◆	LC-NMBP-28-2020: Advanced materials for innovative multilayers for durable photovoltaics	tbc 2020
■	LC-NMBP-29-2019: Materials for non-battery based energy storage	22.01.19 [®]
■	LC-NMBP-30-2018: Materials for future highly performant electrified vehicle batteries	23.01.18 [®]
◆	LC-NMBP-31-2020: Materials for off shore energy	tbc 2020
■	LC-NMBP-32-2019: Smart materials, systems and structures for energy harvesting	22.01.19 [®]
Industrial Sustainability: Cultural Heritage		
◆	NMBP-33-2018: Innovative and affordable solutions for the preventive conservation of cultural heritage	23.01.18 [®]
Industrial Sustainability: Energy-Efficient Buildings (EEB)		
◆	LC-EEB-01-2019: Integration of energy smart materials in non-residential buildings	21.02.19
■	LC-EEB-02-2018: Building information modelling adapted to efficient renovation	22.02.18
◆	LC-EEB-03-2019: New developments in plus energy houses	21.02.19
◆	LC-EEB-04-2020: Industrialisation of building envelope for the renovation market	tbc 2020
◆	LC-EEB-05-2019-20: Integrated storage systems for residential buildings	21.02.19
◆	LC-EEB-06-2018-20: ICT enabled, sustainable and affordable residential building	22.02.18

II. Industrial Leadership



Industrial Sustainability: Energy-Efficient Buildings (EEB)

[construction, design to end of life \(IA 50%\)](#)

Leadership in enabling and industrial technologies (LEIT) – Space

Earth Observation

◆	DT-SPACE-01-EO-2018-2020: Copernicus market uptake	06.03.18 12.03.19 tbc 2020
●	LC-SPACE-02-EO-2018: Copernicus evolution – mission exploitation concepts	06.03.18
■	LC-SPACE-03-EO-2018: Copernicus evolution - preparing for the next generation of Copernicus Marine Service ocean models	06.03.18
■	LC-SPACE-04-EO-2019-2020: Copernicus evolution – services	12.03.19 tbc 2020
■	LC-SPACE-05-EO-2019: Copernicus evolution – research activities in support to a European operational monitoring system for fossil CO2 emissions	12.03.19
■	DT-SPACE-06-EO-2019: International Cooperation Copernicus – designing EO downstream applications with international partners	12.03.19
	LC-SPACE-24-EO-2020: Copernicus evolution - mission exploitation concepts	tbc 2020
	DT-SPACE-25-EO-2020: Copernicus big data algorithm factory	tbc 2020

Space business, entrepreneurship, outreach and education

●	DT-SPACE-07-BIZ-2018: Space hubs for Copernicus	06.03.18
●	DT-SPACE-08-BIZ-2018: Space outreach and education	06.03.18
●	DT-SPACE-09-BIZ-2019: Space hubs (support to start-ups)	12.03.19
	DT-SPACE-26-BIZ-2020: Space hubs (support to start-ups)	tbc 2020

Space technologies, science and exploration

■	SPACE-10-TEC-2018-2020: Technologies for European non-dependence and competitiveness	06.03.18 12.03.19 tbc 2020
■	SPACE-11-TEC-2018: Generic space technologies	06.03.18
■	SPACE-12-TEC-2018: SRC – Space robotics technologies	06.03.18
■	SPACE-13-TEC-2019: SRC – In-Space electrical propulsion and station keeping	12.03.19
■	LC-SPACE-14-TEC-2018-2019: Earth observation technologies	06.03.18 12.03.19
■	SPACE-15-TEC-2018: Satellite communication technologies	06.03.18
■	SPACE-16-TEC-2018: Access to space	06.03.18
■	SPACE-17-TEC-2019: Access to space	12.03.19
■	SPACE-18-TEC-2019-2020- IOV/IOD – Mission design, integration and implementation	12.03.19 tbc 2020
■	SPACE-20-SCI-2018: Scientific instrumentation and technologies enabling space science and exploration	06.03.18
	SPACE-27-TEC-2020: SRC - Space robotics technologies	tbc 2020
	SPACE-28-TEC-2020: SRC - In space electrical propulsion and station keeping	tbc 2020
	SPACE-29-TEC-2020: Satellite communication technologies	tbc 2020
	SPACE-30-SCI-2020: Scientific data exploitation	tbc 2020

Secure and safe space environment

	SU-SPACE-21-SEC-2020 - Exploring concept for Space traffic Management	tbc 2020
■	SU-SPACE-22-SEC-2019: Space Weather	12.03.19
	SU-SPACE-23-SEC-2020 – Near Earth Objects	tbc 2020

EGNSS market uptake 2019-2020

◆	LC-SPACE-EGNSS-1-2019-2020: EGNSS applications fostering green, safe and smart mobility	05.03.19 tbc 2020
◆	DT-SPACE-EGNSS-2-2019-2020: EGNSS applications fostering digitisation	05.03.19 tbc 2020
◆	SU-SPACE-EGNSS-3-2019-2020: EGNSS applications fostering societal resilience and protecting the environment	05.03.19 tbc 2020
●	SPACE-EGNSS-4-2019: Awareness Raising and capacity building	05.03.19 tbc 2020

II. Industrial Leadership



Innovation in small and medium-sized enterprises

For a better innovation support to SMEs		
◆	INNOSUP-01-2018-2020: Cluster facilitated projects for new industrial value chains	12.04.18 [®] 03.04.19 [®] tbc 2020 [®]
●	INNOSUP-02-2019-2020: European SME innovation Associate - pilot	17.01.19 tbc 2020
●	INNOSUP-03-2018: Blockchain and distributed ledger technologies for SMEs	15.05.18
●	INNOSUP-04-2019: Workplace innovation uptake by SMEs	17.01.19
●	INNOSUP-05-2018-2020: Peer learning of innovation agencies	15.03.18 18.10.18 13.03.19 16.10.19 tbc 2020
●	INNOSUP-06-2018: Supporting experimentation in innovation agencies	27.03.18 [®]
●	INNOSUP-07-2019: European Open Innovation network in advanced technologies	01.08.19
●	INNOSUP-08-2020: Pan-European advanced manufacturing assistance and training for SMEs	tbc 2020
●	INNOSUP-09-2018: Design and development of a tool to support and improve the decision making process of investors for financing high-growth potential innovative SMES	28.02.18

SC1 Health, demographic change and wellbeing

Better Health and care, economic growth and sustainable health systems:		
Personalised Medicine		
■	SC1-BHC-01-2019: Understanding causative mechanisms in co- and multimorbidities	02.10.18 [®]
■	SC1-BHC-02-2019: Systems approaches for the discovery of combinatorial therapies for complex disorders	02.10.18 [®]
■	SC1-BHC-03-2018: Exploiting research outcomes and application potential of the human microbiome for personalised prediction, prevention and treatment of disease	18.04.18
	SC1-BHC-04-2018: Rare Disease European Joint Programme Cofund	18.04.18
■	SC1-BHC-05-2018: International flagship collaboration with Canada for human data storage, integration and sharing to enable personalised medicine approaches	18.04.18
	SC1-BHC-06-2020 : Digital diagnostics – developing tools for clinical decisions integrating in vitro and in vivo diagnostics	tbc 2020
●	SC1-HCO-01-2018-2019-2020: Actions in support of the International Consortium for Personalised Medicine	18.04.18 16.04.19 tbc 2020
●	SC1-HCO-02-2018: Data integration and data-driven in-silico models for enabling personalised medicine - a European standardization framework	18.04.18
	SC1-HCO-03-2020 : Improving EU-13 participation in EU-supported health research programmes	tbc 2020
	SC1-HCO-04-2018: ERA-NET to support the Joint Programming in Neurodegenerative Diseases strategic plan (JPND)	18.04.18
	SC1-HCO-14-2020 : ERA-NET Place holder 2	tbc 2020
Better Health and care, economic growth and sustainable health systems:		
Innovative health and care industry		
■	SC1-BHC-07-2019: Regenerative medicine: from new insights to new applications	16.04.19
	SC1-BHC-08-2020 : New therapies for Non Communicable Diseases	tbc 2020
■	SC1-BHC-09-2018: Innovation platforms for advanced therapies of the future	18.04.18
★	SC1-BHC-10-2019: Innovation Procurement: Next generation sequencing (NGS) for routine diagnosis	16.04.19
	SC1-BHC-11-2020 : New, animal-free regulatory test methods for human safety testing at the horizon of 2030	tbc 2020
	SC1-BHC-12-2020 : Boosting the translation of results of health research into validated, innovative applications	tbc 2020
●	SC1-HCO-05-2018: Strengthen Regulatory Sciences and support for regulatory Scientific Advice	18.04.18
Better Health and care, economic growth and sustainable health systems:		
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	16.04.19
■	SC1-BHC-14-2019: Stratified host-directed approaches to improve prevention, treatment and/or cure of infectious diseases	02.10.18 [®]
■	SC1-BHC-15-2018: New anti-infective agents for prevention and/or treatment of neglected infectious diseases (NID)	06.02.18 [®]
■	SC1-BHC-16-2018: Global Alliance for Chronic Diseases (GACD) - Scaling-up of evidence-based health interventions at population level for the prevention, detection, and management of hypertension and/or diabetes	18.04.18
	SC1-BHC-17-2020 : Global Alliance for Chronic Diseases (GACD)	tbc 2020
■	SC1-BHC-18-2018: Translational collaborative cancer research between Europe and the Community of Latin American and Caribbean States (CELAC)	18.04.18
■	SC1-BHC-19-2019: Implementation research for maternal and child health	02.10.18 [®]
	SC1-BHC-20-2020 : Using pre-commercial procurements and public procurement of innovative solutions in health care systems to: - reduce the risk of hospital-acquired infections and/or - improve integrated care	tbc 2020
■	SC1-BHC-21-2018: Research on HIV, tuberculosis (TB) and/or hepatitis C (HCV) in patients with mono-, co-infections and/or comorbidities in the context of fostering collaboration with the Russian Federation	18.04.18

III. Societal Challenges



Better Health and care, economic growth and sustainable health systems: Infectious diseases and improving global health		
●	SC1-HCO-06-2018: Establishment of an International Network of Social Sciences Research Centres to help address governance and other challenges in the preparedness for and the response to infectious threats	18.04.18
	SC1-HCO-07-2020 : ERA-NET Place holder 1	tbc 2020
●	SC1-HCO-08-2018: Creation of a European wide sustainable clinical research network for infectious diseases	18.04.18
●	SC1-HCO-09-2018: Building international efforts on population and patient cohorts	18.04.18
●	SC1-HCO-10-2018: Coordinating European brain research and developing global initiatives	18.04.18
●	SC1-HCO-11-2018: Strategic collaboration in health research and innovation between EU and China	18.04.18

Better Health and care, economic growth and sustainable health systems: Innovative health and care systems – Integration of care		
■	SC1-BHC-22-2019: Mental health in the workplace	02.10.18 [®]
■	SC1-BHC-23-2018: Novel patient-centred approaches for survivorship, palliation and/or end-of-life care	18.04.18
	SC1-BHC-24-2020 : Healthcare interventions for the management of the elderly multimorbid patient	tbc 2020
◆	SC1-BHC-25-2019: Demonstration pilots for implementation of personalised medicine in healthcare	02.10.18 [®]
■	SC1-BHC-26-2018: HTA research to support evidence-based healthcare	18.04.18
●	SC1-HCO-12-2018: Innovation in healthcare - a CSA towards using pre-commercial procurement and public procurement of innovative solutions in healthcare systems	18.04.18

Better Health and care, economic growth and sustainable health systems: Decoding the role of the environment, including climate change, for health and well-being		
■	SC1-BHC-27-2018: New testing and screening methods to identify endocrine disrupting chemicals	18.04.18
■	SC1-BHC-28-2019: The Human Exposome Project: a toolbox for assessing and addressing the impact of environment on health	16.04.19
	SC1-BHC-29-2020 : Environment, climate change and health – novel mitigating measures for improving population health	tbc 2020
●	SC1-HCO-13-2018: Setting the priorities for a European environment, climate and health research agenda	18.04.18

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	24.04.19
■	SC1-DTH-02-2020: Personalised early risk prediction, prevention and intervention	tbc 2020
■	SC1-DTH-03-2018: Adaptive smart working and living environments supporting active and healthy ageing	24.04.18
	SC1-DTH-04-2020: International cooperation in digital solutions and robotics for independent living	tbc 2020
▲	SC1-DTH-05-2019: Large scale implementation of digital innovation for health and care in an ageing society	24.04.19
	SC1-DTH-06-2020: Accelerating the uptake of in-silico methods for testing medicines with dermatological	tbc 2020
■	SC1-DTH-07-2018: Exploiting the full potential of in-silico medicine research for personalised diagnostics and therapies in cloud-based environments	24.04.18
■	SC1-DTH-08-2018: Prototyping a European interoperable Electronic Health Record (EHR) exchange	24.04.18
◆	SC1-DTH-09-2019: Scaling up the univocal Identification of Medicinal Products	24.04.19
★	SC1-DTH-10-2019-2020: Digital health and care services	14.11.18 tbc 2019, 2020
◆	SC1-DTH-11-2019: Large Scale pilots of personalised & outcome based integrated care	24.04.19
●	SC1-HCC-01-2018: Supporting investment in smart living environments for ageing well through certification	24.04.18

III. Societal Challenges



Digital transformation in Health and Care		
●	SC1-HCC-02-2019: Support for the large scale uptake of open service platforms in the Active and Healthy Ageing domain	24.04.19
●	SC1-HCC-03-2018: Support to further development of international cooperation in digital transformation of health and care	24.04.18
●	SC1-HCC-04-2018: Digital health and care services – support for strategy and (early) adoption	24.04.18
●	SC1-HCC-05-2018: Support to a Digital Health and Care Innovation initiative in the context of Digital Single Market strategy	24.04.18
	SC1-HCC-06-2020: Support to eHealth Innovation ecosystems in Europe	tbc 2020
	SC1-HCC-07-2020: Support for European eHealth Interoperability roadmap deployment	tbc 2020
	SC1-HCC-08-2020: Scaling up innovation for active and healthy ageing	tbc 2020
	SC1-HCC-09-2020: Supporting deployment of eHealth in developing countries for better health outcomes	tbc 2020

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	14.11.18
	DT-ICT-12-2020: The smart hospital of the future	tbc 2020

Trusted digital solutions and Cybersecurity in Health and Care: 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	24.04.18
●	SU-TDS-03-2018: Raising awareness and developing training schemes on cybersecurity in hospitals	24.04.18
	DT-TDS-04-2020: Demonstrating the potential and benefits of a European Digital Health Infrastructure for Personalised Medicine	tbc 2020

III. Societal Challenges



SC2 Food security, agriculture, forestry, water research and the bioeconomy

Sustainable Food Security: From functional ecosystems to healthy food		
■	SFS-01-2018-2019-2020: Biodiversity in action: across farmland and the value chain	13.02.18 [®] 23.01.19 [®] tbc 2020
	SFS-02-2020 - Healthy livestock gut ecosystem for sustainable production	tbc 2020
◆	LC-SFS-03-2018: Microbiome applications for sustainable food systems	13.02.18
■	SFS-04-2019-2020: Integrated health approaches and alternatives to pesticide use	23.01.19 [®] tbc 2020
■	SFS-05-2018-2019-2020: New and emerging risks to plant health	13.02.18 [®] 23.01.19 [®] tbc 2020
■	SFS-06-2018-2020: Stepping up integrated pest management	13.02.18 [®] tbc 2020
■	SFS-07-2018: Making European beekeeping healthy and sustainable	13.02.18 [®]
■	SFS-08-2018-2019: Improving animal welfare	13.02.18 [®]
◆	SFS-08-2018-2019: Improving animal welfare	23.01.19
	SFS-09-2020 - Husbandry for quality	tbc 2020
	SFS-10-2020 - Epidemiology of contagious animal diseases	tbc 2020
■	SFS-11-2018-2019: Anti-microbials and animal production	13.02.18 [®] 23.01.19 [®]
◆	SFS-12-2019: A vaccine against African swine fever	23.01.19
	SFS-13-2020 - Genome enabled breeding	tbc 2020
◆	DT-SFS-14-2018: Personalized Nutrition	13.02.18
●	LC-SFS-15-2018: Future proofing our plants	13.02.18
■	SFS-16-2018: Towards healthier and sustainable food	13.02.18 [®]
◆	LC-SFS-17-2019: Alternative proteins for food and feed	23.01.19
	SFS-18-2020 - Food systems pilot action	tbc 2020

Sustainable Food Security: Environment and climate-smart food production and consumption		
■	LC-SFS-19-2018-2019: Climate-smart and resilient farming	13.02.18 [®] 23.01.19 [®]
	LC-SFS-20-2019: European Joint Programme on agricultural soil management	23.01.19
	SFS-21-2020 - Soils going global	tbc 2020
■	LC-SFS-22-2020 - Forest soils Research and Innovation Action	tbc 2020
■	SFS-23-2019: Integrated water management in small agricultural catchments	23.01.19 [®]
◆	CE-SFS-24-2019: Innovative and citizen-driven food system approaches in cities	23.01.19
◆	CE-SFS-25-2018: Integrated system innovation in valorising urban biowaste	13.02.18

Sustainable Food Security: Building capacities		
◆	DT-SFS-26-2019: Food Cloud demonstrators	23.01.19
■	SFS-27-2018: Monitoring food R&I investments and impacts	13.02.18 [®]
●	SFS-28-2018-2019-2020: Genetic resources and pre-breeding communities	13.02.18
■	SFS-28-2018-2019-2020: Genetic resources and pre-breeding communities	23.01.19 [®]
■	SFS-29-2018: Innovations in plant variety testing	13.02.18 [®]
■	SFS-30-2018-2019-2020: Agri-Aqua Labs	13.02.18 [®] 23.01.19 [®] tbc 2020
	SFS-31-2019: ERANETs in agri-food	23.01.19

Sustainable Food Security: Targeted international cooperation		
●	SFS-32-2018: Supporting microbiome coordination and the International Bioeconomy Forum	13.02.18
●	SFS-33-2018: Support to the implementation of the EU-Africa Research and Innovation Partnership on Food and Nutrition Security & Sustainable Agriculture (FNSSA)	13.02.18
■	LC-SFS-34-2019: Food Systems Africa	23.01.19 [®]
■	SFS-35-2019-2020: Sustainable Intensification in Africa	23.01.19 [®] tbc 2020
	CE-SFS-36-2020 - Diversifying farmers' income through small bio-based concepts	tbc 2020
■	SFS-37-2019: Integrated approaches to food safety controls across the food chain (EU-China FAB Flagship initiative)	23.01.19 [®]
■	SFS-38-2018: Highly efficient management of soil quality and land resources (EU-	13.02.18 [®]

III. Societal Challenges



Sustainable Food Security: Targeted international cooperation		
	China FAB Flagship initiative)	
◆	CE-SFS-39-2019: High-quality organic fertilisers from biogas digestate (EU-China FAB Flagship initiative)	23.01.19
	SFS-40-2020 - Healthy soils for healthy food production (EU-China FAB Flagship initiative)	tbc 2020

Blue Growth		
●	BG-01-2018: Towards a Baltic and North Sea research and innovation programme	13.02.18
	BG-02-2018: Blue Bioeconomy Public-Public Partnership	13.02.18
■	LC-BG-03-2018: Sustainable harvesting of marine biological resources	13.02.18 [®]
◆	DT-BG-04-2018-2019: Sustainable European aquaculture 4.0: nutrition and breeding	13.02.18 23.01.19
◆	BG-05-2019: Multi-use of the marine space, offshore and near-shore: pilot demonstrators	23.01.19
◆	CE-BG-06-2019: Sustainable solutions for bio-based plastics on land and sea	23.01.19
◆	BG-07-2019-2020: The Future of Seas and Oceans Flagship Initiative	23.01.19 tbc 2020
■	BG-08-2018-2019: All Atlantic Ocean Research Alliance Flagship	13.02.18 [®] 23.01.19 [®]
●	BG-08-2018-2019: All Atlantic Ocean Research Alliance Flagship	13.02.18
●	LC-BG-09-2019: Coordination of marine and maritime research and innovation in the Black Sea	23.01.19
	BG-10-2020 - Fisheries in full ecosystem context	tbc 2020
	BG-11-2020 - Oceans Innovation Pilot	tbc 2020
	BG-12-2020 - Black Sea Research and Innovation Action	tbc 2020

Rural Renaissance: From farm to society: Understanding dynamics and modernizing policies		
■	RUR-01-2018-2019: Building modern rural policies on long-term visions and societal engagement	13.02.18 [®] 23.01.19 [®]
●	RUR-01-2018-2019: Building modern rural policies on long-term visions and societal engagement	13.02.18
■	RUR-02-2018: Socio-economic impacts of digitisation of agriculture and rural areas	13.02.18 [®]
■	RUR-03-2018: Contracts for effective and lasting delivery of agri-environmental public goods	13.02.18 [®]
■	RUR-04-2018-2019: Analytical tools and models to support policies related to agriculture and food	13.02.18 [®] 23.01.19 [®]
	RUR-05-2020 - Connecting consumers and producers in innovative supply chains	tbc 2020
	RUR-06-2020 - Innovative agri-food chains	tbc 2020
	RUR-07-2020 - Reducing food losses along the value chain	tbc 2020

Rural Renaissance: Organising sustainable food and non-food value chains under changing conditions		
◆	CE-RUR-08-2018-2019-2020: Closing nutrient cycles	23.01.19
■	CE-RUR-08-2018-2019-2020: Closing nutrient cycles	13.02.18 [®]
●	RUR-09-2018: Realising the potential of regional and local bio-based economies	13.02.18
◆	CE-RUR-10-2019: Circular bio-based business models for rural communities	23.01.19
◆	LC-RUR-11-2019-2020: Sustainable wood value chains	23.01.19

Rural Renaissance: Taking advantage of the digital revolution		
◆	DT-RUR-12-2018: ICT Innovation for agriculture – Digital Innovation Hubs for Agriculture	13.02.18
●	RUR-13-2018: Enabling the farm advisor community to prepare farmers for the digital age	13.02.18
◆	RUR-14-2018: Digital solutions and e-tools to modernise the CAP	13.02.18

Rural Renaissance: Boosting innovation and enhancing the human and social capital in rural areas		
●	RUR-15-2018-2019-2020: Thematic networks compiling knowledge ready for practice	13.02.18 23.01.19 tbc 2020
●	RUR-16-2019: Fuelling the potential of advisors for innovation	23.01.19

III. Societal Challenges



Rural Renaissance: Boosting innovation and enhancing the human and social capital in rural areas		
	RUR-17-2020 - Networking European farms to boost thematic knowledge exchanges and close the innovation gap	tbc 2020

III. Societal Challenges



SC3 Secure, clean and efficient energy

Energy efficiency: Upgrading buildings' energy performance and smartness		
◆	LC-SC3-EE-1-2018-2019-2020: Decarbonisation of the EU building stock: innovative approaches and affordable solutions changing the market for buildings renovation	04.09.18 03.09.19
●	LC-SC3-EE-2-2018-2019: Integrated home renovation services	04.09.18 03.09.19
●	LC-SC3-EE-3-2019-2020: Stimulating demand for sustainable energy skills in the construction sector	03.09.19
◆	LC-SC3-EE-4-2018-2020: Upgrading smartness of existing buildings through innovations for legacy equipment	03.09.19
◆●	LC-SC3-EE-5-2018-2019-2020: Next-generation of Energy Performance Assessment and Certification	04.09.18 03.09.19
Energy efficiency: Energy efficient industry and services		
◆●	LC-SC3-EE-6-2018-2019-2020: Business case for industrial waste heat/cold recovery	04.09.18 03.09.19
	LC-SC3-EE-7-2020: Increasing energy efficiency of small data centres	tbc 2020
●	LC-SC3-EE-8-2018-2019: Capacity building programmes to support implementation of energy audits	04.09.18 03.09.19
Energy efficiency: Energy efficiency is an investment		
●	LC-SC3-EE-9-2018-2019: Innovative financing for energy efficiency investments	04.09.18 03.09.19
●	LC-SC3-EE-10-2018-2019-2020: Mainstreaming energy efficiency finance	04.09.18 03.09.19
●	LC-SC3-EE-11-2018-2019-2020: Aggregation - Project Development Assistance	04.09.18 03.09.19
	LC-SC3-EE-12-2020: Innovation procurement for energy efficiency	tbc 2020
Energy efficiency: Energy efficiency is an energy source		
◆◆	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	04.09.18 03.09.19
■	LC-SC3-EE-14-2018-2019-2020: Socio-economic research conceptualising and modelling energy efficiency and energy demand	04.09.18 03.09.19
Energy efficiency: Support for policy-driven innovations		
●	LC-SC3-EE-15-2018: New energy label driving and boosting innovation in products energy efficiency	04.09.18
●	LC-SC3-EE-16-2018-2019-2020: Supporting public authorities to implement the Energy Union	04.09.18 03.09.19
●	LC-SC3-EE-17-2019: European City facility - European Cities as key innovation hubs to unlock finance for energy efficiency	05.02.19
Global leadership in renewables: Next Renewable energy solutions		
■	LC-SC3-RES-1-2019-2020: Developing the next generation of renewable energy technologies	16.10.18 [®]
■	LC-SC3-RES-2-2018: Disruptive innovation in clean energy technologies	19.04.18
	LC-SC3-RES-3-2020: International Cooperation with USA on alternative renewable fuels for energy and transport	tbc 2020
Global leadership in renewables: Renewable energy solutions for implementation at consumer scale		
■	LC-SC3-RES-4-2018: Renewable energy system integrated at the building scale	31.01.18 [®]
◆	LC-SC3-RES-5-2018: Increased performance of technologies for local heating and cooling solutions	13.02.18
◆	LC-SC3-RES-6-2018: Demonstrate significant cost reduction for Building Integrated PV (BIPV) solutions	13.02.18
■	LC-SC3-RES-7-2019: Solar Energy in Industrial Processes	27.08.19

III. Societal Challenges



Global leadership in renewables: Renewable energy solutions for implementation at consumer scale		
◆	LC-SC3-RES-8-2019: Combining Renewable Technologies for a Renewable District Heating and/or Cooling System	11.12.18
	LC-SC3-RES-9-2020: Next generation of thin-film photovoltaic technologies	tbc 2020
	LC-SC3-RES-10-2020: Pre-Commercial Procurement for a 100% Renewable Energy Supply	tbc 2020

Global leadership in renewables: Renewable energy solutions for energy system level implementation		
■	LC-SC3-RES-11-2018: Developing solutions to reduce the cost and increase performance of renewable technologies	31.01.18 [®]
◆	LC-SC3-RES-12-2018: Demonstrate highly performant renewable technologies for combined heat and power (CHP) generation and their integration in the EU's energy system	13.02.18
◆	LC-SC3-RES-13-2018: Demonstrate solutions that significantly reduce the cost of renewable power generation	13.02.18
■	LC-SC3-RES-14-2019: Optimising manufacturing and system operation	16.10.18 [®]
◆	LC-SC3-RES-15-2019: Increase the competitiveness of the EU PV manufacturing industry	11.12.18
■	LC-SC3-RES-16-2019: Development of solutions based on renewable sources that provide flexibility to the energy system	27.08.19
◆	LC-SC3-RES-17-2019: Demonstration of solutions based on renewable sources that provide flexibility to the energy system	11.12.18
	LC-SC3-RES-18-2020: Demonstration of the solutions based on renewable sources that provide flexibility to the energy system	tbc 2020
	LC-SC3-RES-19-2020: Demonstration of floating wind farms	tbc 2020
	LC-SC3-RES-20-2020: Efficient combination of concentrated solar power (CSP) and desalination (with particular focus on the Gulf Cooperation Council (GCC) region)	tbc 2020

Global leadership in renewables: Renewable Fuels for transport		
■	LC-SC3-RES-21-2018: Development of next generation biofuels and alternative renewable fuel technologies for road transport	13.02.18
◆	LC-SC3-RES-22-2018: Demonstration of cost effective advanced biofuel pathways in retrofitted existing industrial installations	05.04.18
■	LC-SC3-RES-23-2019: Development of next generation biofuel and alternative renewable fuel technologies for aviation and shipping	27.08.19
◆	LC-SC3-RES-24-2019: Boosting pre-commercial production of advanced aviation biofuels	11.12.18

Global leadership in renewables: Diversifying feedstock		
	LC-SC3-RES-25-2020: Development of next generation biofuel and alternative renewable fuel technologies from CO2 and renewable energy (Power and Energy to Fuels)	tbc 2020
	LC-SC3-RES-26-2020: Demonstration of advanced biofuels production from aquatic biomass	tbc 2020
	LC-SC3-RES-27-2020: Demonstration of advanced biofuels production from aquatic biomass	tbc 2020

Global leadership in renewables: Market Uptake Support		
●	LC-SC3-RES-28-2018-2019-2020: Market Uptake support	13.02.18 11.12.18

Smart and clean energy for consumers		
●	LC-SC3-EC-1-2018-2019-2020: The role of consumers in changing the market with informed decision or collective actions	04.09.18 03.09.19
●	LC-SC3-EC-2-2018-2019-2020: Mitigating household energy poverty	04.09.18 03.09.19
	LC-SC3-EC-3-2020: Consumer engagement and demand response	tbc 2020

III. Societal Challenges



Smart citizen-centred energy system		
◆	LC-SC3-ES-1-2019: Flexibility and retail market options for the distribution grid	05.02.19
◆	LC-SC3-ES-2-2019: Solutions for increased regional cross-border cooperation in the transmission grid	05.02.19
◆	LC-SC3-ES-3-2018-2020: Integrated local energy systems (Energy islands)	05.04.18
◆	LC-SC3-ES-4-2018-2020: Decarbonising energy systems of geographical Islands	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	05.04.18
■	LC-SC3-ES-6-2019: Research on advanced tools and technological development	05.02.19
●	LC-SC3-ES-7-2018: Pan-European Forum for R&I on Smart Grids, Flexibility and Local Energy Networks	05.04.18
●	LC-SC3-ES-8-2019: European Islands Facility - Unlock financing for energy transitions and supporting islands to develop investment concepts	05.02.19

Smart Cities and Communities		
◆	LC-SC3-SCC-1-2018-2019-2020: Smart Cities and Communities	05.04.18 05.02.19

Enabling near-zero CO2 emissions from fossil fuel power plants and carbon intensive industries		
■	LC-SC3-NZE-1-2018: Advanced CO2 capture technologies	06.09.18
■	CE-SC3-NZE-2-2018: Conversion of captured CO2	06.09.18
●	LC-SC3-NZE-3-2018: Strategic planning for CCUS development	06.09.18
◆	LC-SC3-NZE-4-2019: Integrated solutions for flexible operation of fossil fuel power plants through power-to-X-to-power and/or energy storage	27.08.19
◆	LC-SC3-NZE-5-2019-2020: Low carbon industrial production using CCUS	27.08.19
	LC-SC3-NZE-6-2020: Geological Storage Pilots	tbc 2020

Joint Actions		
	LC-SC3-JA-1-2018: Joint programming actions to foster innovative energy solutions (ERA-NET Cofund)	11.09.18
●	LC-SC3-JA-2-2018: Support to the realisation of the Implementation Plans of the SET Plan	11.09.18
★	LC-SC3-JA-3-2019: European Pre-Commercial Procurement Programme for Wave Energy Research & Development	27.08.19
●	LC-SC3-JA-4-2018: Support action in preparation of a Joint Programming activity	31.01.18
	LC-SC3-JA-5-2019: Joint Programming with EU and African partners for a R&I actions in the area of renewable energy (ERA-NET Cofund)	27.08.19

Cross-cutting issues		
■	LC-SC3-CC-1-2018-2019-2020: Social Sciences and Humanities (SSH) aspects of the Clean-Energy Transition	06.09.18 27.08.19
■	LC-SC3-CC-2-2018: Modelling in support to the transition to a Low-Carbon Energy System in Europe	06.09.18
●	LC-SC3-CC-3-2019: Support for the opening of low-carbon energy research databases in Europe	27.08.19
●	LC-SC3-CC-4-2018: Support to sectorial fora	19.04.18
●	LC-SC3-CC-5-2018: Research, innovation and educational capacities for energy transition	06.09.18
●	LC-SC3-CC-6-2018: Transition in coal intensive regions	06.09.18

SC4 Smart, Green and Integrated Transport

Mobility for Growth: Building a low-carbon, climate resilient future: Low-carbon and sustainable transport		
■	LC-MG-1-1-2018: InCo flagship on reduction of transport impact on air quality	30.01.18 [Ⓜ]
■	LC-MG-1-2-2018: Sustainable multi-modal inter-urban transport, regional mobility and spatial planning	30.01.18 [Ⓜ]
■ ●	LC-MG-1-3-2018: Harnessing and understanding the impacts of changes in urban mobility on policy making by city-led innovation for sustainable urban mobility	30.01.18 [Ⓜ] 04.04.18
■	LC-MG-1-4-2018: Hardening vehicle environmental protection systems against tampering	30.01.18 [Ⓜ]
■	LC-MG-1-5-2019: Advancements in aerodynamics and innovative propulsion systems for quieter and greener aircrafts	16.01.19 [Ⓜ]
■	LC-MG-1-6-2019: Aviation operations impact on climate change	24.04.19
■	LC-MG-1-7-2019: Future propulsion and integration: towards a hybrid/electric aircraft	24.04.19
■ ♠	LC-MG-1-8-2019: Retrofit Solutions and Next Generation Propulsion for Waterborne Transport	16.01.19 [Ⓜ]
■	LC-MG-1-9-2019: Upgrading transport infrastructure in order to monitor noise and emissions	16.01.19 [Ⓜ]
■	LC-MG-1-10-2019: Logistics solutions that deal with requirements of the 'on demand economy' and for shared-connected and low-emission logistics operations	16.01.19 [Ⓜ]

Mobility for Growth: Safe, integrated and resilient transport systems		
■	MG-2-1-2018: Human Factors in Transport Safety	30.01.18 [Ⓜ]
■ ♠	MG-2-2-2018: Marine Accident Response	30.01.18 [Ⓜ]
●	MG-2-3-2018: Airworthiness of mass-market drones	04.04.18
●	MG-2-4-2018: Coordinating national efforts in modernizing transport infrastructure and provide innovative mobility services	04.04.18
■	MG-2-5-2018: Innovative technologies for improving aviation safety and certification in icing conditions	04.04.18
■	MG-2-6-2019: Moving freight by Water: Sustainable Infrastructure and Innovative Vessels	16.01.19 [Ⓜ]
■	MG-2-7-2019: Safety in an evolving road mobility environment	16.01.19 [Ⓜ]
■	MG-2-8-2019: Innovative applications of drones for ensuring safety in transport	16.01.19 [Ⓜ]
■	MG-2-9-2019: Integrated multimodal, low-emission freight transport systems and logistics (Inco Flagship)	16.01.19 [Ⓜ]
	MG-2-10-2020: Towards full automated infrastructure construction and maintenance	tbc 2020
	MG-2-11-2020: Jointly implementing innovation in the areas of safety, connectivity and infrastructure (ERA-net Co-fund)	tbc 2020

Mobility for Growth: Global leadership and competitiveness		
■	MG-3-1-2018: Multidisciplinary and collaborative aircraft design tools and processes	30.01.18 [Ⓜ]
♠	MG-3-2-2018: The Autonomous Ship	30.01.18 [Ⓜ]
■	MG-3-3-2018: "Driver" behaviour and acceptance of connected, cooperative and automated transport	30.01.18 [Ⓜ]
	MG-3-04-2020: Enhanced avionics, operations and door-to-door user-experience through higher connectivity and automation	tbc 2020
	MG-3-05-2020: Towards a high-speed global air transportation demonstration	tbc 2020
	MG-3-06-2020: Next Generation Multifunctional and Intelligent Aerostructures – from manufacturing to maintenance and recycling	tbc 2020
	MG-3-07-2020: Improved Production Processes in Ship building	tbc 2020

III. Societal Challenges



Mobility for Growth: Accounting for the people		
●	MG-4-1-2018: New regulatory frameworks to enable effective deployment of emerging technologies and business/operating models for all transport modes	04.04.18
●	MG-4-2-2018: Building Open Science platforms in transport research	04.04.18
■	MG-4-3-2018: Demographic change and participation of women in transport	04.04.18
●	MG-4-4-2018-2019: Support for dissemination events in the field of Transport Research	04.04.18 24.04.19
■	MG-4-5-2019: An inclusive digitally interconnected transport system meeting citizens' needs	24.04.19
	MG-4-6-2019: Supporting Joint Actions on sustainable urban accessibility and connectivity (ERA-NET Cofund)	24.04.19
	MG-4-07-2020: Digitisation of the transport system: data sharing, analytics	tbc 2020
	MG-4-08-2020: Advanced methods and tools in support of transport/mobility researchers, planners and policy makers	tbc 2020

Mobility for Growth: Blue growth		
■	MG-BG-01-2018: Unmanned and autonomous survey activities at sea	04.04.18
■	MG-BG-02-2019: Ship emission control scenarios, marine environmental impact and mitigation	24.04.19
	MG-BG-03-2020: Under water noise mitigation and environmental impact	tbc 2020

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	04.04.18
■ ●	DT-ART-02-2018: Support for networking activities and impact assessment for road automation	04.04.18
■	DT-ART-03-2019: Human centred design for the new driver role in highly automated vehicles	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	24.04.19
	DT-ART-05-2020: Efficient and safe connected and automated heavy-duty vehicles in real logistics operations	tbc 2020
	DT-ART-06-2020: Large-scale, cross-border demonstration of highly automated driving functions for passenger cars	tbc 2020

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	04.04.18
■	LC-GV-02-2018: Virtual product development and production of all types of electrified vehicles and components	04.04.18
◆	LC-GV-03-2019: User centric charging infrastructure	24.04.19
◆	LC-GV-04-2019: Low-emissions propulsion for long-distance trucks and coaches	24.04.19
◆	LC-GV-05-2019: InCo flagship on "Urban mobility and sustainable electrification in large urban areas in developing and emerging economies"	24.04.19
	LC-GV-06-2020: Next generation and realisation of battery packs for BEV and HEV	tbc 2020
	LC-GV-07-2020: Advanced light materials and their production processes for automotive applications	tbc 2020
	LC-GV-08-2020: Reducing the environmental impact of hybrid light duty vehicles	tbc 2020
	LC-GV-09-2020: Next generation electrified vehicles for urban use	tbc 2020

SC5 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-01-2018: Supporting the development of climate policies to deliver on the Paris Agreement, through Integrated Assessment Models (IAMs)	27.02.18 [®]
■	LC-CLA-02-2019: Negative emissions and land-use based mitigation assessment	19.02.19 [®]
	<i>Indicative: LC-CLA-09-2020: Achieving long-term climate goals and sustainable development (deep decarbonisation pathways and sustainable development at national and global level; the role of lifestyle change and consumption patterns on climate change mitigation)</i>	tbc
	<i>Indicative: LC-CLA-10-2020: Innovative nature-based solutions for carbon neutral cities and improved air quality</i>	tbc

Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement:

Climate adaptation, impacts and services

■	LC-CLA-03-2018: Climate change impacts in Europe	27.02.18 [®]
■	LC-CLA-04-2018: Resilience and sustainable reconstruction of historic areas to cope with climate change and hazard events	27.02.18 [®]
■	LC-CLA-05-2019: Human dynamics of climate change	19.02.19 [®]
	<i>Indicative: LC-CLA-11-2020: Advancing climate services (seasonal to sub-seasonal [S2D] and seasonal to decadal ([S2D] forecasting; climate services prototypes)</i>	tbc
	<i>Indicative: LC-CLA-12-2020: Climate resilience of coastal cities</i>	tbc
	<i>Indicative: LC-CLA-13-2020: Pre-commercial procurement of solutions for climate change resilience</i>	tbc

Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement:

Inter-relations between climate change, biodiversity and ecosystem services

■	LC-CLA-06-2019: Inter-relations between climate change, biodiversity and ecosystem services	19.02.19 [®]
	<i>Indicative: LC-CLA-14-2020: Understanding water-energy-food nexus and streamlining water-related policies</i>	tbc
	<i>Indicative: LC-CLA-15-2020: Nature based solutions for forest fires risk reduction and multi-hazard risk management in the E.U.</i>	tbc

Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement:

The Cryosphere

■ ●	LC-CLA-07-2019: The changing cryosphere: uncertainties, risks and opportunities	19.02.19 [®] 19.02.19
	<i>Indicative: LC-CLA-16-2020: Polar climate: understanding the polar processes in a global context</i>	tbc

Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement:

Knowledge gaps

■	LC-CLA-08-2018: Addressing knowledge gaps in climate science, in support of IPCC reports	27.02.18 [®]
	<i>Indicative: LC-CLA-17-2020: Developing the next generation of Earth System Models</i>	tbc

Greening the economy in line with the Sustainable Development Goals (SDGs):

Connecting economic and environmental gains – the circular economy

■	CE-SC5-01-2018: Methods to remove hazardous substances and contaminants from secondary raw materials	27.02.18 [®]
■	CE-SC5-02-2018: Independent testing programme on premature obsolescence	27.02.18 [®]
◆	CE-SC5-03-2018: Demonstrating systemic urban development for circular and regenerative cities	27.02.18 [®]
◆	CE-SC5-04-2019: Building a water-smart economy and society	19.02.19 [®]
●	CE-SC5-05-2018: Coordinated approaches to funding and promotion of research and innovation for the circular economy	27.02.18
	<i>Indicative: CE-SC5-22-2020: Improving the recovery and recycling of materials from</i>	tbc

III. Societal Challenges



Greening the economy in line with the Sustainable Development Goals (SDGs): Connecting economic and environmental gains – the circular economy		
	<i>composite and multi-layer products</i>	
	<i>Indicative: CE-SC5-23-2020: Understanding the transition to circular economy and its implications</i>	<i>tbc</i>

Greening the economy in line with the Sustainable Development Goals (SDGs): Raw materials		
■	CE-SC5-06-2018: New technologies for the enhanced recovery of by-products	27.02.18 [®]
◆	CE-SC5-07-2018-2019-2020: Raw materials innovation for the circular economy: sustainable processing, reuse, recycling and recovery schemes	27.02.18 [®] 19.02.19 [®]
●	CE-SC5-08-2018-2019-2020: Raw materials policy support actions for the circular economy	27.02.18 19.02.19
■	SC5-09-2018-2019: New solutions for the sustainable production of raw materials	27.02.18 [®] 19.02.19 [®]
◆	SC5-10-2019-2020: Raw materials innovation actions: exploration and Earth observation in support of sustainable mining	19.02.19 [®]
	<i>Indicative: CE-SC5-07-2020: Raw materials innovation for the circular economy</i>	<i>tbc</i>
	<i>Indicative: CE-SC5-08-2020: Raw materials policy support actions for the circular economy: expert network on Critical Raw Materials</i>	<i>tbc</i>

Greening the economy in line with the Sustainable Development Goals (SDGs): Water for our environment, economy and society		
◆	SC5-11-2018: Digital solutions for water: linking the physical and digital world for water solutions	27.02.18 [®]
■	SC5-12-2018: EU-India water co-operation	27.02.18

Greening the economy in line with the Sustainable Development Goals (SDGs): Innovating cities for sustainability and resilience		
■	SC5-13-2018-2019: Strengthening international cooperation on sustainable urbanisation: nature-based solutions for restoration and rehabilitation of urban ecosystems	27.02.18 [®] 19.02.19 [®]
◆	SC5-14-2019: Visionary and integrated solutions to improve well-being and health in cities	19.02.19 [®]

Greening the economy in line with the Sustainable Development Goals (SDGs): Protecting and leveraging the value of our natural and cultural assets: Earth observation		
◆	SC5-15-2018: Strengthening the benefits for Europe of the Global Earth Observation System of Systems (GEOSS) - establishing 'EuroGEOSS'	27.02.18 [®]
●◆	SC5-16-2019: Development of commercial activities and services through the use of GEOSS and Copernicus data	19.02.19 19.02.19 [®]
	<i>Indicative: LC-CLA-18-2020: GEOSS observations supporting the EU in its international commitment in the domain of climate change</i>	<i>tbc</i>
	<i>Indicative: LC-CLA-19-2020: Supporting the GEOSS Cold Regions Initiative</i>	<i>tbc</i>

Greening the economy in line with the Sustainable Development Goals (SDGs): Protecting and leveraging the value of our natural and cultural assets: Nature-based solutions, disaster risk reduction and natural capital accounting		
■	SC5-17-2018: Towards operational forecasting of earthquakes and early warning capacity for more resilient societies	27.02.18 [®]
●	SC5-18-2018: Valuing nature: mainstreaming natural capital in policies and in business decision-making	27.02.18

Greening the economy in line with the Sustainable Development Goals (SDGs): Protecting and leveraging the value of our natural and cultural assets: Heritage alive		
●	SC5-19-2018: International network to promote cultural heritage innovation and diplomacy	27.02.18
◆	SC5-20-2019: Transforming historic urban areas and/or cultural landscapes into hubs of entrepreneurship and social and cultural integration	19.02.19 [®]
	SC5-21-2019-2020: ERA-NET Cofund action(s) for climate action, environment, resource efficiency and raw materials	19.02.19

SC6 Europe in a changing world – Inclusive, innovative and reflective societies

Migration		
■	MIGRATION-01-2019: Understanding migration mobility patterns: elaborating mid and long-term migration scenarios	14.03.19
■	MIGRATION-02-2018: Towards forward-looking migration governance: addressing the challenges, assessing capacities and designing future strategies	13.03.18
■	MIGRATION-03-2019: Social and economic effects of migration in Europe and integration policies	14.03.19
	MIGRATION-04-2020: Inclusive and innovative practices for the integration of migrants in urban areas	tbc 2020
■	MIGRATION-05-2018-2020: Mapping and overcoming integration challenges for migrant children	13.03.18
◆	DT-MIGRATION-06-2018-2019: Addressing the challenge of migrant integration through ICT-enabled solutions	13.03.18 14.03.19
	MIGRATION-06-2018-2020-continued: Mapping and overcoming integration challenges for migrant children	tbc 2020
■	MIGRATION-07-2019: International protection of refugees in a comparative perspective	14.03.19
■	MIGRATION-08-2018: Addressing the challenge of forced displacement	13.03.18
	MIGRATION-09-2020: Narratives on migration and its impact: past and present	tbc 2020
	MIGRATION-10-2020: Innovative solutions and evidence-based recommendations on migration	tbc 2020

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	13.03.18
■	DT-TRANSFORMATIONS-02-2018-2019-2020: Transformative impact of disruptive technologies in public services	13.03.18 14.03.19
● ■	TRANSFORMATIONS-03-2018-2019: Innovative solutions for inclusive and sustainable urban environments	13.03.18 14.03.19
● ■	TRANSFORMATIONS-04-2019-2020: Innovative approaches to urban and regional development through cultural tourism	14.03.19 tbc 2020
●	TRANSFORMATIONS-05-2018: Cities as a platform for citizen-driven innovation	13.03.18
■	TRANSFORMATIONS-06-2018: Inclusive and sustainable growth through cultural and creative industries and the arts	13.03.18
● ■	DT-TRANSFORMATIONS-07-2019: The impact of technological transformations on children and youth	14.03.19
■	TRANSFORMATIONS-08-2019: The societal value of culture and the impact of cultural policies in Europe	14.03.19
●	SU-TRANSFORMATIONS-09-2018: Social platform on endangered cultural heritage and on illicit trafficking of cultural goods	13.03.18
	TRANSFORMATIONS-10-2020 - Evolving European cultural symbols and identities	tbc 2020
■	DT-TRANSFORMATIONS-11-2019: Collaborative approaches to cultural heritage for social cohesion	14.03.19
◆	DT-TRANSFORMATIONS-12-2018-2020: Curation of digital assets and advanced digitisation	13.03.18
■	TRANSFORMATIONS-13-2019: Using big data approaches in research and innovation policy making	14.03.19
■	TRANSFORMATIONS-14-2018: Supply and demand-oriented economic policies to boost robust growth in Europe – Addressing the social and economic challenges in Europe	13.03.18
	TRANSFORMATIONS-15-2020 - ERA-Net CO-FUND (EUR 10 million)	tbc 2020

Governance for the future		
■	GOVERNANCE-01-2019: Trust in governance	14.03.19
■	GOVERNANCE-02-2018-2019: Past, present and future of differentiation in European governance	13.03.18

III. Societal Challenges



Governance for the future		
●	GOVERNANCE-02-2018-2019: Past, present and future of differentiation in European governance	14.03.19
■	GOVERNANCE-03-2018: Addressing populism and boosting civic and democratic engagement	13.03.18
■	GOVERNANCE-04-2019: Enhancing social rights and EU citizenship	14.03.19
■	DT-GOVERNANCE-05-2018-2019-2020: New forms of delivering public goods and inclusive public services	14.03.19
●	DT-GOVERNANCE-05-2018-2019-2020: New forms of delivering public goods and inclusive public services	13.03.18
■	GOVERNANCE-06-2018: Trends and forward-looking scenarios in global governance	13.03.18
	SU-GOVERNANCE-07-2020: The Common Foreign and Security Policy and the expanding scope of the EU's external engagement	tbc 2020
●	GOVERNANCE-08-2018: Partnering for viability assessments of innovative solutions for markets outside Europe	13.03.18
	SU-GOVERNANCE-09-2020: Addressing radicalisation through social inclusion	tbc 2020
■	SU-GOVERNANCE-10-2019: Drivers and contexts of violent extremism in the broader MENA region and the Balkans	14.03.19
●	SU-GOVERNANCE-11-2018: Extreme ideologies and polarisation	13.03.18
◆	DT-GOVERNANCE-12-2019-2020: Pilot on using the European cloud infrastructure for public administrations	14.03.19
■	DT-GOVERNANCE-13-2019: Digitisation, Digital Single Market and European culture: new challenges for creativity, intellectual property rights and copyright	14.03.19
	GOVERNANCE-14-2018: ERA-Net Co-fund - Renegotiating democratic governance in times of disruptions	13.03.18
●	GOVERNANCE-15-2018: Taking lessons from the practices of interdisciplinarity in Europe	13.03.18
	GOVERNANCE-15-2020 - International Dimension of Open Innovation	tbc 2020

SC7 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	23.08.18 22.08.19 tbc 2020
◆	SU-INFRA02-2019: Security for smart and safe cities, including for public spaces	22.08.19
Security: Disaster-Resilient Societies		
■	SU-DRS01-2018-2019-2020: Human factors, and social, societal, and organisational aspects for disaster-resilient societies	23.08.18 22.08.19 tbc 2020
■	SU-DRS02-2018-2019-2020: Technologies for first responders	23.08.18 22.08.19 tbc 2020
◆	SU-DRS03-2018-2019-2020: Pre-normative research and demonstration for disaster-resilient societies	23.08.18 22.08.19 tbc 2020
■	SU-DRS04-2019-2020: Chemical, biological, radiological and nuclear (CBRN) cluster	22.08.19 tbc 2020
◆	SU-DRS05-2019: Demonstration of novel concepts for the management of pandemic crises	22.08.19
Security: Fight against Crime and Terrorism		
■	SU-FCT01-2018-2019-2020: Human factors, and social, societal, and organisational aspects to solve issues in fighting against crime and terrorism	23.08.18 22.08.19 tbc 2020
■	<i>Sub-topic 1: [2018] New methods to prevent, investigate and mitigate trafficking of human beings and child sexual exploitation – and on the protection of victims</i>	
■	<i>Sub-topic 2: [2019] Understanding the drivers of cybercriminality, and new methods to prevent, investigate and mitigate cybercriminal behaviour</i>	
■	<i>Sub-topic 3: [2020] Developing comprehensive multi-disciplinary and multi-agency approaches to prevent and counter violent radicalisation and terrorism in the EU</i>	
■	SU-FCT02-2018-2019-2020: Technologies to enhance the fight against crime and terrorism	23.08.18 22.08.19 tbc 2020
◆	SU-FCT03-2018-2019-2020: Information and data stream management to fight against (cyber)crime and terrorism	23.08.18 22.08.19 tbc 2020
	SU-FCT04-2020: Explosives: detection, intelligence, forensics	tbc 2020
Security: Border and External Security		
■	SU-BES01-2018-2019-2020: Human factors, and social, societal, and organisational aspects of border and external security	23.08.2018 22.08.2019 tbc 2020
■	<i>Sub-topic 1: [2018] Detecting security threats possibly resulting from certain perceptions abroad, that deviate from the reality of the EU</i>	
■	<i>Sub-topic 2: [2019] Modelling, predicting, and dealing with migration flows to avoid tensions and violence</i>	
■	<i>Sub-topic 3: [2020] Developing indicators of threats at the EU external borders on the basis of sound risk and vulnerability assessment methodologies</i>	
■	SU-BES02-2018-2019-2020: Technologies to enhance border and external security	23.08.2018 22.08.2019 tbc 2020
■	<i>Sub-topic 1: [2018] Providing integrated situational awareness and applying augmented reality to border security</i>	
■	<i>Sub-topic 2: [2018] Detecting fraud, verifying document validity, and alternative technologies to identifying people</i>	
■	<i>Sub-topic 3: [2019] Security on-board passenger ships</i>	
■	<i>Sub-topic 4: [2019] Detecting threats in the stream of commerce without disrupting business</i>	
■	<i>Sub-topic 5: [2020] Disruptive sensor technologies for border surveillance</i>	
◆	SU-BES03-2018-2019-2020: Demonstration of applied solutions to enhance border and external security	23.08.2018 22.08.2019 tbc 2020
◆	<i>Sub-topic 1: [2018] Remotely piloted aircrafts and underwater autonomous platforms to be used from on-board offshore patrol vessels</i>	
◆	<i>Sub-topic 2: [2019] New concepts for decision support and information systems</i>	
◆	<i>Sub-topic 3: [2020] Improved systems for the detection, identification and tracking of</i>	

III. Societal Challenges



Security: Border and External Security		
	<i>small boats</i>	

Security: General Matters		
●	SU-GM01-2018-2019-2020: Pan-European networks of practitioners and other actors in the field of security	23.08.2018 22.08.2019 tbc 2020
●	SU-GM02-2018-2020: Strategic pre-commercial procurements of innovative, advanced systems to support security	23.08.2018 tbc 2020
●	<i>Sub-topic 1: [2018] Common requirements specifications for innovative, advanced systems to support security</i>	
●	<i>Sub-topic 2: [2020] Procurement of prototype systems among those specified as a result of Sub-topic 1</i>	
★	SU-GM03-2018-2019-2020: Pre-commercial procurements of innovative solutions to enhance security	23.08.2018 22.08.2019 tbc 2020

Digital Security: Cybersecurity, Digital Privacy and data protection		
◆	SU-DS01-2018: Cybersecurity preparedness - cyber range, simulation and economics	23.08.18

Digital Security: Management of cyber-attacks and other risks		
◆	SU-DS02-2020: Management of cyber-attacks and other risks	tbc 2020
◆	SU-DS03-2019-2020: Digital Security and privacy for citizens and Small and Medium Enterprises and Micro Enterprises	22.08.2019
◆	SU-DS04-2018-2020: Cybersecurity in the Electrical Power and Energy System (EPES): an armour against cyber and privacy attacks and data breaches	23.08.18 tbc 2020
◆	SU-DS05-2018-2019: Digital security, privacy, data protection and accountability in critical sectors	23.08.18 22.08.2019 tbc 2020
■	SU-DS05-2018-2019: Digital security, privacy, data protection and accountability in critical sectors	22.08.2019

Science with and for Society

Strategic orientation 1: Accelerating and catalyzing processes of institutional change		
●	SwafS-01-2018-2020: Open schooling and collaboration on science education	10.04.18 [®] 02.04.19 [®] tbc 2020
●	SwafS-02-2018: Innovative methods for teaching ethics and research integrity	10.04.18
●	SwafS-03-2018: Developing research integrity standard operating procedures	10.04.18
■	SwafS-04-2018: Encouraging the re-use of research data generated by publically funded research projects	10.04.18
●	SwafS-05-2018-2020: Grounding RRI practices in research and innovation funding and performing organisations	10.04.18 02.04.19 tbc 2020
●	SwafS-06-2018: Science4Refugees	10.04.18
●	SwafS-07-2019: EURAXESS TOP V	02.04.19
●	SwafS-08-2019-2020: Research innovation needs & skills training in PhD programmes	02.04.19 tbc 2020
	SwafS.23.2020: The Ethics of Organoids	tbc 2020
	SwafS.24.2020: The Ethics of technologies with high socio-economic impact	tbc 2020
Strategic orientation 2: Stepping up support to Gender Equality in Research & Innovation Policy		
●	SwafS-09-2018-2020: Supporting research organisations to implement gender equality plans	10.04.18 02.04.19 tbc 2020
■	SwafS-10-2018: Analysing gender gaps and biases in the allocation of grants	10.04.18
■	SwafS-11-2019: Scenarios for an award/certification system for gender equality in research organisations and universities in Europe	02.04.19
■	SwafS-12-2019: The gender perspective of science, technology and innovation (STI) in dialogue with third countries	02.04.19
●	SwafS-13-2018: Gender Equality Academy and dissemination of gender knowledge across Europe	10.04.18
	SwafS.25.2020: Gender-based violence in research organisations and universities	tbc 2020
Strategic orientation 3: Building the territorial dimension of SwafS partnerships		
●	SwafS-14-2018-2020: Supporting the development of territorial Responsible Research and Innovation	10.04.18 02.04.19 tbc 2020
●	SwafS-22-2018: Mobilising Research Excellence in EU Outermost Regions (OR)	10.04.18
Strategic orientation 4: Exploring and supporting citizen science		
●	SwafS-15-2018-2020: Exploring and supporting citizen science	10.04.18 tbc 2020
■	SwafS-15-2018-2020: Exploring and supporting citizen science	10.04.18 02.04.19 tbc 2020
●	SwafS-16-2019: Ethics of Innovation: the challenge of new interaction modes	02.04.19
Strategic orientation 5: Building the knowledge base for SwafS		
■	SwafS-17-2019: Consolidating and expanding the knowledge base on citizen science	02.04.19
■	SwafS-18-2018: Taking stock of the application of the precautionary principle in R&I	10.04.18
■	SwafS-19-2018-2020: Taking stock and re-examining the role of science communication	10.04.18 02.04.19 tbc 2020
■	SwafS-20-2018-2020: Building the SwafS knowledge base	10.04.18 [®] 02.04.19 [®] tbc 2020 [®]
■	SwafS-21-2018: Advancing the Monitoring of the Evolution and Benefits of Responsible Research and Innovation	10.04.18

V. Spreading Excellence and Widening



WIDESPREAD		
●	WIDESPREAD-01-2018-2019: Teaming Phase 2	15.11.2018
●	WIDESPREAD-02-2018: Support to JPI Urban Europe	15.11.2018
●	WIDESPREAD-03-2018: Twinning	15.11.2018
●	WIDESPREAD-04-2019: ERA Chairs	15.11.2018
●	WIDESPREAD-05-2020: Twinning	tbc 2020
●	WIDESPREAD-06-2020: ERA Chairs	tbc 2020

Widening Fellowships		
	WF-01-2018: Widening Fellowships (Career Restart panel)	12.09.18
	WF-01-2018: Widening Fellowships (Reintegration panel)	12.09.18
	WF-01-2018: Widening Fellowships (Society and Enterprise panel)	12.09.18
	WF-01-2018: Widening Fellowships (Standard European Fellowships)	12.09.18
	WF-02-2019: Widening Fellowships (Career Restart panel)	11.09.19
	WF-02-2019: Widening Fellowships (Reintegration panel)	11.09.19
	WF-02-2019: Widening Fellowships (Society and Enterprise panel)	11.09.19
	WF-02-2019: Widening Fellowships (Standard European Fellowships)	11.09.19
	WF-03-2020: Widening Fellowships	tbc 2020

Nuclear Fission, Fusion and Radiation Protection Research

Nuclear safety		
■	NFRP-2018-1: Safety assessments to improve accident management strategies for Generation II & III reactors	27.09.18
■	NFRP-2018-2: Model development and safety assessments for Generation IV reactors	27.09.18
■	NFRP-2018-3: Research on the safety of Light Water Small Modular Reactors	27.09.18
■	NFRP-2018-4: Improved nuclear data for energy and non-energy modelling applications	27.09.18
Decommissioning and environmental remediation		
●	NFRP-2018-5: Development of a roadmap for decommissioning research aiming at safety improvement, environmental impact minimisation and cost reduction	27.09.18
Radioactive waste management		
	NFRP-2018-6: European Joint Research Programme in the management and disposal of radioactive waste	27.09.18
Education and Training		
●	NFRP-2018-7: Availability and use of research infrastructures for education, training and competence building	27.09.18
Radiation protection		
■	NFRP-2018-8: Radiation protection research	27.09.18
●	NFRP-2018-9: Strategy for the exploitation of research results funded under Euratom Research and training Programmes in the field of radiation protection	27.09.18
Innovation in nuclear safety		
◆	NFRP-2018-10: Encouraging innovation in nuclear safety for the benefit of European citizen	27.09.18
Fusion research		
●	NFRP-2018-11: Open data access for fusion research	27.09.18

VII. European Innovation Council (EIC)



European Innovation Council (EIC)

SME Instrument		
	EIC-SMEInst-01-2018-2020: SME instrument phase 1	
	2018	08.02.2018 03.05.2018 05.09.2018 07.11.2018
	2019	13.02.19 07.05.2019 05.09.2019 06.11.2019
	2020	12.02.2020 06.05.2020 02.09.2020 04.11.2020
	EIC-SMEInst-01-2018-2020: SME instrument phase 2	
	2018	10.01.2018 14.03.18 23.05.18 10.10.18
	2019	09.01.2019 03.04.19 05.06.19 09.10.19
	2020	08.01.20 18.03.20 19.05.20 07.10.2020

Fast Track to Innovation (FTI)		
	EIC-FTI-2018-2020: Fast Track to Innovation	
	2018	21.02.2018 31.05.2018 23.10.2018
	2019	21.02.19 23.05.19 22.10.19
	2020	19.02.20 09.06.20 27.10.20

FET-Open Novel ideas for radically new technologies		
■	FETOPEN-01-2018-2019-2020	16.05.2018 24.01.2019 18.09.2019 13.05.2020
●	FETOPEN-02-2018	11.04.2018
●	FETOPEN-03-2018-2019-2020	16.10.2018 08.10.2019 14.10.2020

Horizon Prizes		
	EIC Horizon Prize for 'Innovative Batteries for eVehicles'	Q4/2020
	EIC Horizon Prize for 'Fuel from the Sun: Artificial Photosynthesis'	Q1/2021
	EIC Horizon Prize for 'Early Warning for Epidemics'	Q3/2020
	EIC Horizon Prize for 'Blockchain for Social Good'	Q2/2019
	EIC Horizon Prize for 'Low Cost Space Launch'	Q4/2020
	EIC Horizon Prize for 'Affordable High Tech for Humanitarian Aid'	Q1/2020

Shift2Rail

CALL: SHIFT2RAIL JU CALL FOR PROPOSALS 2018 Call identifier: H2020-S2RJU-2018		
■	S2R-CFM-CCA-01-2018: Virtual certification & smart planning	24.04.2018
■	S2R-CFM-IP1-01-2018: Development of technology demonstrators for the next generation of traction systems and adhesion management systems	24.04.2018
■	S2R-CFM-IP1-02-2018: Implementing new technologies for the TCMS	24.04.2018
◆	S2R-CFM-IP2-01-2018: Advanced Signalling, Automation and Communication System (IP2 and IP5)	24.04.2018
◆	S2R-CFM-IP3-01-2018: Research into optimized and future railway infrastructure	24.04.2018
◆	S2R-CFM-IP4-01-2018: Passenger service platform specifications for an enhanced multi-modal transport eco-system including Mobility as a Service (MaaS)	24.04.2018
◆	S2R-CFM-IP5-01-2018: Technology demonstrators for competitive, intelligent rail freight operation	24.04.2018
■	S2R-OC-IP1-01-2018: Technical solutions for the next generation of TCMS	24.04.2018
■	S2R-OC-IP2-01-2018: Analysis for Moving Block and implementation of Virtual Coupling concept	24.04.2018
■	S2R-OC-IP2-02-2018: Modern methodologies and verifications for GNSS in Railways and virtual test environment	24.04.2018
■	S2R-OC-IP2-03-2018: Communication environment assessment and validation	24.04.2018
◆	S2R-OC-IP3-01-2018: Measuring and monitoring devices for railway assets	24.04.2018
■	S2R-OC-IP4-01-2018: Semantic framework for multimodal transport services	24.04.2018
■	S2R-OC-IP4-02-2018: Supporting the implementation of the IP4 multi-modal transport ecosystem	24.04.2018
■	S2R-OC-IP5-01-2018: Radio communication and simulation of train dynamics for Distributed Power within long trains	24.04.2018
■	S2R-OC-IPX-01-2018: Paradigm shifts for railway	24.04.2018
●	S2R-OC-IPX-02-2018: Transversal exploratory research activities and knowledge transfer	24.04.2018
●	S2R-OC-IPX-03-2018: Innovative/breakthrough mobility concepts (with rail as backbone)	24.04.2018

Fuel Cells and Hydrogen Joint Undertaking (FCH JU)

CALL: FCH2 JU CALL FOR PROPOSALS 2018 Call identifier: H2020-JTI-FCH-2018-1		
◆	FCH-01-1-2018: Large Scale Demonstration of H2 fueled HD Trucks with High Capacity Hydrogen Refueling Stations (HRS)	24.04.2018
◆	FCH-01-2-2018: Demonstration of Fuel Cell applications for mid-size passenger ships or inland freight	24.04.2018
■	FCH-01-3-2018: Strengthening of the European supply chain for compressed storage systems for transport applications	24.04.2018
■	FCH-01-4-2018: Fuel cell systems for the propulsion of aerial passenger vehicle	24.04.2018
■	FCH-01-5-2018: Next generation automotive MEA development	24.04.2018
■	FCH-01-6-2018: Game changer fuel cell stack for automotive applications	24.04.2018
■	FCH-01-7-2018: Improvement of innovative compression concepts for large scale transport applications	24.04.2018
◆	FCH-02-1-2018: Demonstration of a large-scale (min. 20MW) electrolyser for converting renewable energy to hydrogen	24.04.2018
◆	FCH-02-2-2018: Demonstration of large-scale steam electrolyser system in industrial market	24.04.2018
◆	FCH-02-3-2018: Robust, efficient long term remote power supply	24.04.2018
■	FCH-02-4-2018: Thermochemical Hydrogen Production from Concentrated Sunlight	24.04.2018
■	FCH-02-5-2018: Hydrogen carriers for stationary storage of excess renewable energy	24.04.2018
■	FCH-02-6-2018: Cost-effective novel architectures of interconnects	24.04.2018
■	FCH-02-7-2018: Efficient and cost-optimised biogas-based co-generation by high-temperature fuel cells	24.04.2018
■	FCH-02-8-2018: Waste-stream based power balancing plants with high efficiency, high flexibility and power-to-X capability	24.04.2018
■	FCH-03-1-2018: Developing Fuel Cell applications for port/harbour ecosystems	24.04.2018
■	FCH-04-1-2018: PNR for safety of hydrogen driven vehicles and transport through tunnels and similar confined spaces	24.04.2018
■	FCH-04-2-2018: Hydrogen admixtures in the natural gas grid	24.04.2018
■	FCH-04-3-2018: Accelerated Stress Testing (AST) protocols for Solid Oxide Cells (SOC)	24.04.2018
●	FCH-04-4-2018: Strengthening public acceptance and awareness of FCH-technologies by educating pupils at schools	24.04.2018

Bio-Based Industries Joint Undertaking (BBI JU)

BBI JU 2018 Call expected for April 2018		
	BBI JU Annual Work Plan and Budget 2018	Expected: 06.09.2018