

Introducing the 2018-20 Work Programme of Horizon 2020

EU R&I Day
Seoul, 24 November 2017

Horizon 2020 – Work Programme 2018-2020

Open to the World

- ✓ **600+ topics open for international cooperation**
- ✓ **150+ topics targeting cooperation with specific (group of) countries**
- ✓ **Over €1 billion investment for around 30 international cooperation flagship initiatives:** e.g. Climate action in support of the Paris Agreement; clean energy in context of Mission Innovation; All Atlantic Ocean Research Alliance Flagship; wide range of bilateral cooperation initiatives.
- ✓ Strong international component in **European Research Council** & **Marie Skłodowska-Curie actions**

Targeted opening for international cooperation

- ✓ Topics **strongly encouraging** or **requiring** international cooperation with ***specific country, groups of countries,*** or ***all***
- ✓ Topics implemented through **joint or coordinated call** with specific country, **or** requiring **twinning with projects** funded by specific country/programme

Contributing to:

→ Solve **(global) challenge**

→ Objectives of **(global) multilateral initiative**

- E.g. Mission Innovation, Belmont Forum, GloPID-R ...

→ (European) **Joint Programme/Call**

- E.g. ERA-NET Cofund ...

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Work Programme 2018-2020

Information and Communication Technologies

Topic Code	Topic Title	Targeted countries	Deadline	Indicative budget 2018 (m€)	Indicative budget 2019 (m€)
EUK-02-2018	5G	KR	31/01/2018	4	0
EUK-01-2018	Cloud, IoT and AI technologies	KR	31/01/2018	2,2	0
ICT-06-2019	Unconventional Nanoelectronics	JP, KR, TW, US	28/03/2019	0	30



EU-Korea – ICT R&I

2nd Coordinated ICT Call

Topics:

5G–Next Generation Communication Networks

- ➔ Target1: 5G technological validation in application context
- ➔ Target2: interoperability and integration of 5G vertical testbeds in heterogeneous environments

Joint Research on Cloud, IoT and AI

- ➔ Target: innovative solutions integrating AI with Cloud and IoT technologies to support future AI applications



EU-Korea – ICT R&I

2nd Coordinated ICT Call

Overall budget

- € 6,2 million (2/2/2,2) from EU + 6,2 MEUR from South Korea

Implementation

- Joint evaluation to select the proposals to be funded

Timeline

- Oct 2017: WP approval / publication
- Oct 2017: Call publication (deadline Jan 2018)
- March 2018: Evaluation of proposals
- May-June 2018: New projects implemented

EU-Korea cooperation on Nanoelectronics

- Opportunities for participation of South Korean organisations in Horizon 2020 nanoelectronics projects
- Regular joint workshops to exchange progress and priorities on advanced nanoelectronics R&D
- International forum for roadmapping/ foresight activities on 'Beyond CMOS' nanoelectronics



Work Programme 2018-2020

Nanotechnologies, Materials, Biotechnologies, and Production technologies

Topic Code	Topic Title	Targeted countries	Deadline	Indicative budget 2018 (m€)	Indicative budget 2019 (m€)
NMBP-13-2018	Risk Governance of nanotechnology	US, KR, BR, CA, AU, CN, JP, ZA	23/01/2018	14	0
NMBP-14-2018	Nanoinformatics: from materials models to predictive toxicology and ecotoxicology	US, KR, BR, CA, AU, CN, JP, ZA	23/01/2018	14	0
NMBP-15-2019	Safe by design, from science to regulation: metrics and main sectors	US, KR, BR, CA, AU, CN, JP, ZA	22/01/2019	0	24

Nanosafety

- Nanosafety issues are global and, therefore, international collaboration is strongly encouraged
- In particular, all projects in this area are expected to collaborate with similar projects under the established scheme of Communities of Research with the USA NNI programme and/or to include direct participation of relevant USA entities
- In addition, participation from countries actively involved in the work of OECD-WPMN, the NanoSafety Cluster and the NANoREG9 project (e.g. South Korea, Brazil, Canada, Australia, China, Japan, South Africa) is strongly encouraged



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Space

Topic Code	Topic Title	Targeted countries	Deadline	Indic. budget 2018 (m€)	Indic. budget 2019 (m€)
SPACE- GNSS -4-2019	Awareness Raising and capacity building	All	5/03/2019	0	2
DT-SPACE-06-EO-2019	International Cooperation Copernicus – Designing EO downstream applications with international partners	Partners with Copernicus cooperation arrangement	12/03/2019	0	5
SU-SPACE-22-SEC-2019	Space weather	All	12/03/2019	0	9

EU-Korea bilateral cooperation in GNSS



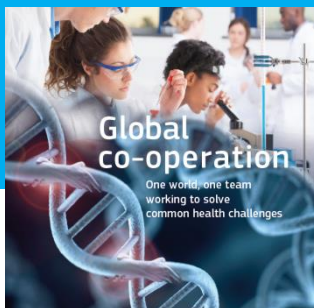
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- 1) Two projects so far under H2020: GNSS.asia 2, which ended on 31 December 2016 and STRIKE3, running until 31 January 2019
 - 2) Possibility for Korean participation under the H2020 GNSS Work Programme 2018-2020: Awareness Raising and capacity building. Calls open 31/11/2018-05/03/2019
 - 3) The EU-Korea GNSS cooperation agreement entered into force in 2016. Following this we have already seen one good example of cooperation in KASS, where a European company is helping implement an SBAS in Korea
 - 4) Good example of the EU's commitment to Korea under its Space Strategy: conference on eCall on 31st October

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Health

Topic Code	Topic Title	Targeted countries	Deadline	Indic. budget 2018 (m€)	Indic. budget 2019 (m€)
SC1-HCC-03-2018	Support to further development of international cooperation in digital transformation of health and care	US, CA, CN, JP, KR	24/04/2018	2	0



Open to the world

Multi-lateral health research activities



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Research and
Innovation

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Energy

Topic Code	Topic Title	Targeted countries	Ddl	Budget 2018 (m€)	Budget 2019 (m€)
LC-SC3-RES-4-2018	Renewable energy system integrated at the building scale	Mission Innovation countries	31/01/2018	27	0
LC-SC3-RES-5-2018	Increased performance of technologies for local heating and cooling solutions	Mission Innovation countries	13/02/2018	10	0
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)	Mission Innovation countries	To be decided	To be decided	To be decided
LC-SC3-CC-1-2018-2019-2020	Social Sciences and Humanities (SSH) aspects of the Clean-Energy Transition	Mission Innovation countries	2 steps: 6/9/2018; 27/8/2019	10	10
CE-SC3-NZE-2-2018	Conversion of captured CO2	Mission Innovation countries	06/09/2018	12	0
LC-SC3-NZE-5-2019-2020	Low carbon industrial production using CCUS	Mission Innovation countries	27/08/2019	0	33
LC-SC3-ES-3-2018-2020	Integrated local energy systems (energy islands)	All	05/04/2018	32	0

Mission Innovation Initiative

- Main driver for the international cooperation in clean energy RD&D

Innovation Challenges

- #1 Smart Grids*
- #2 Off-Grid Access to Electricity*
- #3 Carbon Capture*
- #4 Sustainable Biofuels*
- #5 Converting Sunlight to Storable Solar Fuels (EC co-lead)*
- #6 Clean Energy Materials*
- #7 Affordable Heating and Cooling in Buildings (EC co-lead)*

Possibilities in WP2018-2020

- *Open calls covering whole spectrum of energy technologies*
- *Contribute to the **Innovation Challenges** activities under Mission Innovation*
- *Calls open on*
 - renewable energy sources, heating and cooling in buildings, market uptake support
 - energy systems/smart grids, smart cities and communities, energy consumers, energy efficiency
 - carbon capture utilization and storage



Work Programme 2018-2020

Transport

Topic Code	Topic Title	Targeted countries	Deadline	Indic. budget 2018 (m€)	Indic. budget 2019 (m€)
DT-ART-01-2018	Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data	US, JP, KR, SG, AU	4/04/2018	6	0
DT-ART-02-2018	Support for networking activities and impact assessment for road automation	US, JP, KR, SG, AU	4/04/2018	9	0
DT-ART-03-2019	Human centred design for the new driver role in highly automated vehicles	US, JP, KR, SG, AU	24/04/2019	0	8
DT-ART-04-2019	Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all	US, JP, KR, SG, AU	24/04/2019	0	30
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	All	2 steps: 16/01/2019 12/09/2019	0	10

Automated driving systems

- **The overall objective is to promote a wide market introduction of highly automated driving systems (SAE level 4 - High Automation)**
- **Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data**
 - Research should focus on the development of testing and validation procedures of highly automated driving functions for different use cases in various traffic scenarios, including cross-border travelling
 - The consideration of new testing procedures and tools for reliable and accurate positioning as well as for cyber-security vulnerability assessment would be an asset

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Climate action

Topic Code	Topic Title	Targeted countries	Deadline	Indic. budget 2018 (m€)	Indic. budget 2019 (m€)
LC-CLA-07-2019	The changing cryosphere: uncertainties, risks and opportunities	US, CA, CN, JP, RU, KR, NZ, IN, SG	19/02/2019	0	39
LC-CLA-08-2018	Addressing knowledge gaps in climate science, in support of IPCC reports	All	2 steps: 27/02/2018 04/09/2018	60	0

LC-CLA-07-2019:

The changing cryosphere: uncertainties, risks and opportunities

- **Sea level changes** (Research and Innovation action)
- **Changes in Arctic biodiversity** (Research and Innovation action)
- **Sustainable opportunities in a changing Arctic** (Research and Innovation action)
- **Arctic standards** (Coordination and Support action)

LC-CLA-08-2018:

Addressing knowledge gaps in climate science, in support of IPCC reports

- **Improving the understanding of key climate processes for reducing uncertainty in climate projections and predictions** (Research and Innovation action)
- **Tipping points** (Research and Innovation action)
- **Ice-core drilling in East Antarctica** (Research and Innovation action)

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Secure societies

Topic Code	Topic Title	Targeted countries	Deadline	Indic. budget 2018 (m€)	Indic. budget 2019 (m€)
SU-DRS02-2018-2019-2020	Technologies for first responders	JP, KR	2 steps: 23/8/2018; 22/8/2019	28	21

SU-DRS02-2018-2019-2020: Technologies for first responders

Scope: Proposals are invited to propose novel solutions improving the protection of first responders against multiple and unexpected dangers, or enhancing their capacities by addressing related research and innovation issues

Expected Impact:

Novel tools, technologies, guidelines and methods aimed at facilitating their operations

New knowledge about field-validation of different tools, technologies and approaches involving first responders in (real-life) scenarios

Three thematic sub-topics

- Sub-topic 1: [2018] Victim-detection technologies
- Sub-topic 2: [2019] Innovation for rapid and accurate pathogens detection
- Sub-topic 3: [2020] Methods and guidelines for pre-hospital life support and triage

One general sub-topic

- Sub-topic: [2018-2019-2020] Open
Other technologies for use by first responders may be subject of proposals provided that they involve a large number of first responders' organisations. For instance: communicating and smart wearables; situational awareness and risk mitigation systems; augmented or virtual reality solutions; communication solutions between first responders and victims; etc.

European Research Council



European Research Council

- For excellent researchers wishing to conduct their groundbreaking research in Europe
- Investigator-driven, no thematic priorities, bottom-up approach
- 1 Principal Investigator and team; 1 Host institution in Europe; 1 Selection criterion: Excellence
- At least 50% research to be done in Europe; Project duration: Up to 5 years

Korean researchers can apply to join ERC teams

- So far, more than 1500 ERC principal investigators have expressed interest in temporarily hosting a Korean researcher in their team
- So far, more than 100 Korean researchers on short term visits

Marie Skłodowska-Curie actions

Individual Fellowships (IF):

- Supporting experienced international researchers to do research in Europe for 12-24 months
- Host institutions: from academia or industry

Innovative Training Networks (ITN):

- Networks of organisations offering research and training to early-stage researchers

Research and Innovation Staff Exchange (RISE):

- International and inter-sectoral cooperation

More information:

Participant Portal

<http://ec.europa.eu/research/participants/portal/>

Horizon 2020 National Contact Points

http://ec.europa.eu/research/participants/portal/desktop/en/support/national_contact_points.html

Research Enquiry Service

<http://ec.europa.eu/research/index.cfm?pg=enquiries>