
HORIZON 2020

# SPACE

DG GROW – Internal Market, Industry Entrepreneurship and SMEs

For GROW/I1 - Space Policy and Research Unit

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TAIEX Workshop on Space Applications - Bangkok - 18/19 September 2018

# Multiannual Financial Framework 2014-2020


**~ 1 479 M€**

opernicus
Europe's eyes on Earth

**~ 4 291 M€**

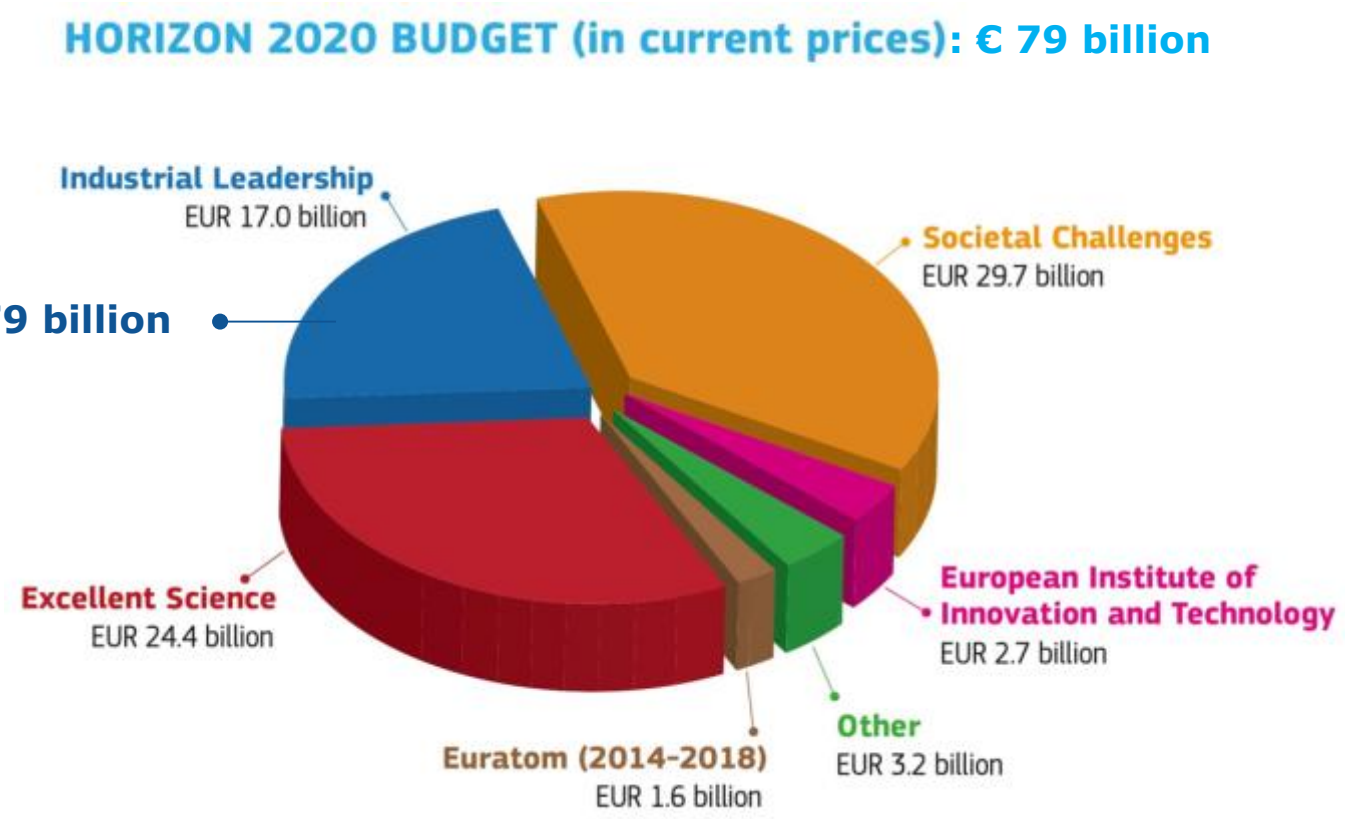
GALILEO EGNOS

**~ 7 071 M€**

**~ 12 841 M€**

# Space in H2020

LEIT-**Space: € 1.479 billion**



# Links to other H2020 parts

## Excellent science

Priority 1 – **Excellent science**

- **European Research Council (ERC)**
- **Future and Emerging Technologies (FET)**
- **Marie Sklodowska-Curie Actions**
- **Research Infrastructures**

## Industrial leadership

Priority 2 – **Industrial leadership**

- **Leadership in enabling and industrial technologies (LEIT)**
  - **Information and Communication Technologies (ICT)**
  - **Nanotechnologies**
  - **Biotechnology**
  - **Advanced manufacturing and Processing**
  - **Space**
- **Access to risk finance**
- **Innovation in SMEs**

## Societal challenges

Priority 3 – **Societal Challenges**

- **SC1 - Health, demographic change and well-being**
- **SC2 - Food security, sustainable agriculture and forestry, Marine, Maritime and Inland water research, and Bioeconomy**
- **SC3 - Secure, clean and efficient energy**
- **SC4 - Smart, green and integrated transport**
- **SC5 - Climate action, Environment, Resource efficiency and Raw materials**
- **SC6 - Europe in a changing world – Inclusive, Innovative and Reflective societies**
- **SC7 - Secure societies – Protecting freedom and Security of Europe and its citizens**

# WP 2017-18
# Implementation calendar



| Calls | Opening dates | Deadlines |
|---|---|---|
| EO-2018<br>COMPET-2018 | November 2017 | Early March 2018 |
| EO-2018 | November 2018 | Early March 2019 |

Work Programme (part 05iii LEIT-Space) is available at the H2020 participant portal:

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

The associated **guidance documents** are available at:

http://ec.europa.eu/growth/sectors/space/research/horizon-2020/

# Horizon 2020 Space 2017-2018 'calls'

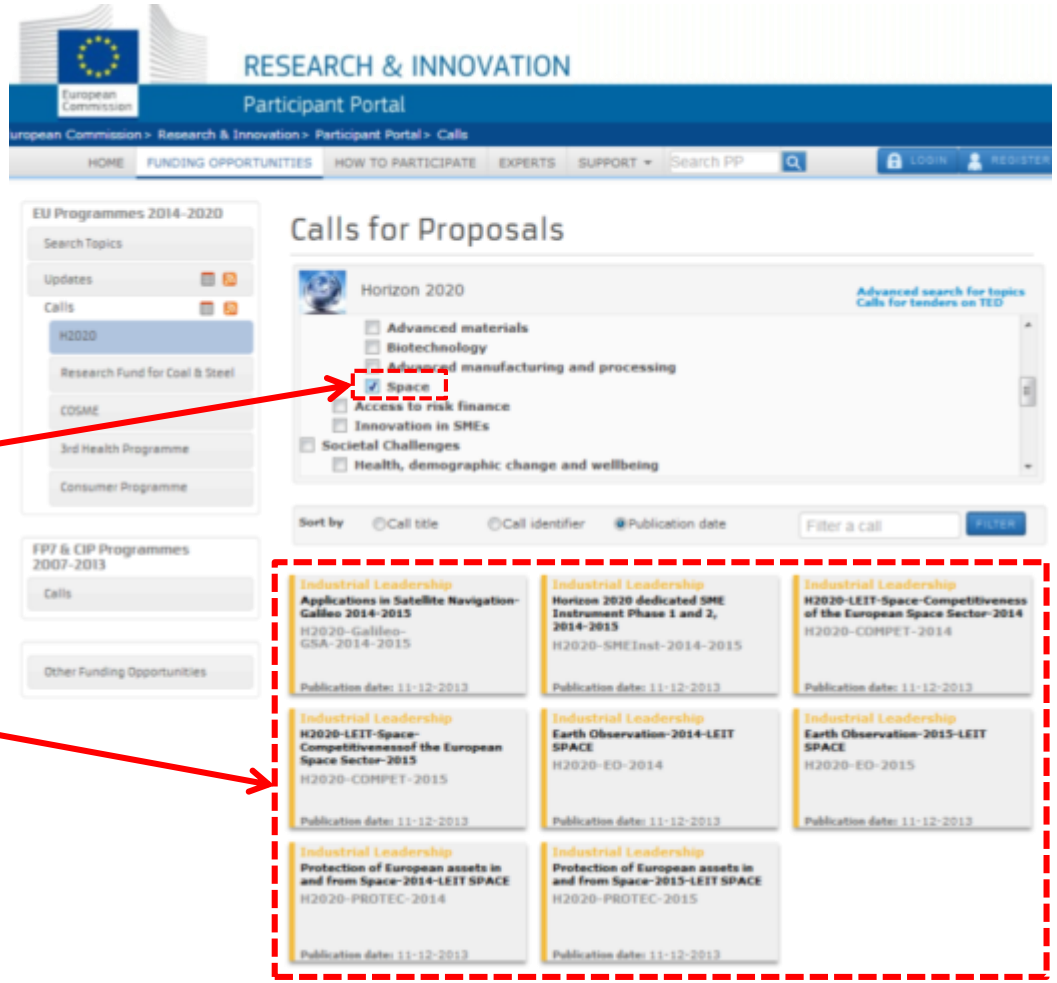


**Horizon 2020 Participants Portal:**

http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/

H2020 Space Work Programme

Calls for proposals



# Types of actions and Funding rates



- **Research and innovation actions** (**Funding rate: 100%**): Projects aiming to establish new knowledge, new or improved technology by possibly including basic and applied research, technology development, testing and validation on a small-scale prototype.

- **Innovation actions** (**Funding rate: 70% - exception: 100% for non-profit legal entities**): Projects aiming to produce plans, arrangements or designs for a new or improved product, design, process or service by possibly including large-scale product validation and market replication.

- **Coordination and support actions** (**Funding rate: 100%**): Projects consisting of accompanying/complementary measures (standardisation, awareness-raising, communication, policy dialogues, networking, studies, etc.)

# H2020 Space building blocks



European Commission

| Satellite Navigation (Galileo and EGNOS) | Earth Observation (Copernicus) | Competitiveness of the European Space sector | Protection of the European Space Assets |
|---|---|---|---|
| Applications | Applications | Technologies for European non-dependence and competitiveness | Space Surveilance and Tracking |
| EGNSS evolution | Data | Independent access to space | Space Weather, Space Debris, Near Earth objects |
| | Copernicus evolution | Space Science and Exploration | |

SME Instrument

# Pillar 3: downstream 3/3

## Building synergies with H2020

European Commission


*H2020 work programme 2018-2020*

| Topic | 2018 | 2019 | 2020 |
|---|---|---|---|
| SPACE-01-EO-Copernicus market uptake | √ | √ | √ |
| SPACE-06-EO-Copernicus International Cooperation | | √ | |
| SPACE-07-BIZ-Copernicus Relays and Academy | √ | | |
| SPACE-08-BIZ-KICs | √ | | |
| SPACE-09-BIZ-Support to start-ups | √ | √ | √ |
| InnovFin Space Equity Pilot | √ | | √ |

# More Info:

- **Participant Portal**

  http://ec.europa.eu/research/participants/portal/desktop/en/home.html
- **Helpdesk**

  http://ec.europa.eu/research/enquiries
- **Expert evaluators needed!**

  http://ec.europa.eu/research/participants/portal/desktop/en/experts/index.html
- **Learn more about Horizon 2020**

  http://ec.europa.eu/horizon2020

# H2020 Calls – Space 2018-2020: Earth Observation

✓DT-SPACE-01-EO-2018-2020: Copernicus Market uptake (IA)

✓LC-SPACE-04-EO-*2019-2020*: Copernicus evolution – Research activities in support of cross-cutting applications between Copernicus services (RIA)

✓LC-SPACE-05-EO-2019: Copernicus evolution – Research activities in support to a European operational monitoring system for fossil CO2 emissions (RIA)

✓DT-SPACE-06-EO-2019: International Cooperation Copernicus – designing EO downstream applications with international partners

European Commission

# Additional slides

# DT-SPACE-01-EO-2018-2020: Copernicus Market uptake

Objective: foster the market development of Copernicus/ EO

- User-centric (user needs and identifiable user communities)
- Use of the Data and Information Access Services (DIAS)
- Integration with other data/ inputs (space or non-space)

Key elements:

- Business plan, evidence of user engagement
- scalability and cost efficiency of the solution
- Innovative in at least one of: market, product, process or business model.

Expected impact: Establish sustainable supply chains for innovative Earth observation products with a commercial value

Type of action: Innovation action

European Commission

# LC-SPACE-04-EO-2019-2020: Copernicus evolution – Research activities in support of cross-cutting applications between Copernicus services

Exploitation of new potential products and applications needs in the cross-cutting cases (not yet realised)

Scope:

- demonstrate the technical operational feasibility of one specific cross-cutting thematic application to improve the Copernicus core services capitalising from the corresponding product portfolio
- Applications areas: energy, agriculture and forestry, health, water resources, security, resilience of built environment, cultural heritage, coastal monitoring, urban planning, climate adaptation, biodiversity and eco-system preservation, exploration and mineral resources, and others.

Expected Impact:

- Enhance European industry's potential to take advantage of emerging market opportunities and capacity to establish leadership in the field;
- Reinforce the link with academic and scientific sector for scientific exploitation of Copernicus data
- Boost competitiveness of the industrial actors

Type of action: Research and Innovation Action

| Budget (EUR million) | Opening | Deadline |
|---|---|---|
| 8 | 16/10/2018 | 12/03/2019 |

European Commission

# LC-SPACE-05-EO-2019: Copernicus evolution – Research activities in support of to a European operational monitoring system for fossil CO2 emissions

Scope:

- to conduct the required R&D activities that will support the development of a European operational monitoring system for fossil fuel $CO_2$ emissions
- all components of the system should be addressed: e.g., atmospheric transport models, re-analysis, data assimilation techniques, bottom-up estimation, in-situ networks, ancillary measurements needed to address the attribution of $CO_2$ emissions.

Expected Impact:

- Improve on the performance and resolutions of regional scale atmospheric transport models
- Support to the evaluation of countries' CO2 emission reduction strategies
- Support the optimal planning of networks of in-situ measurements (in WIGOS programme) and support the development and validation techniques to quantify fossil fuel $CO_2$ emissions.
- Identify the functionalities of a decision support system

Type of action: Research and Innovation Action

| Budget (EUR million) | Opening | Deadline |
|---|---|---|
| 9 | 16/10/2018 | 12/03/2019 |

European Commission

# DT-SPACE-06-EO-2019: International Cooperation Copernicus – designing EO downstream applications with international partners

Objective:

- Developing applications based on EO/Copernicus internationally
- Serving local user needs (public or private)
- Use of the Data and Information Access Services (DIAS) encouraged
- Calibration/ validation activities (local in-situ)

Key elements:

- Link to international arrangements
- Link to GEO activities

Expected impact:

- Establish sustainable supply chains for innovative Earth observation products with international value-added

| Budget (EUR million) | Opening | Deadline |
|---|---|---|
| 5 | 16/10/2018 | 12/03/2019 |

European Commission

# Synergies with other parts of the H2020 Work Programme

*Societal challenges*

Through Copernicus and Earth Observation activities in the Horizon 2020 the European Union also contributes to advancing the **Global Earth Observation Systems of Systems (GEOSS)**

- SC5-15-2018: Strengthening the benefits for Europe of the Global Earth Observation System of Systems (GEOSS) – establishing 'EuroGEOSS'
- SC5-16-2019: Development of commercial activities and services through the use of GEOSS and Copernicus data

*Excellent science – Research Infrastructures*

http://ec.europa.eu/research/infrastructures/index_en.cfm?pg=home

Implementing the European Open Science Cloud

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

Integrating and opening research infrastructures of European interest

- INFRAIA-01-2018-2019: Integrating Activities for Advanced Communities

# Other relevant topics (1/2)

| Call | Topic | Action Type | Deadline |
|---|---|---|---|
| Health, Demographic Change and Wellbeing | | | |
| SC1-BHC-13-2019 | Mining big data for early detection of infectious disease threats driven by climate change and other factors [mentions use of Copernicus) | Research & Innovation | 16.04.19 |
| Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy | | | |
| LC-SFS-34-2019 | Food Systems Africa [mention use of Copernicus and Earth observation data ] | Research & Innovation | 23.01.19 (1st stage) |
| BG-07-2019-2020 | The Future of Seas and Oceans Flagship Initiative [mentions use of GEO/GEOSS and Copernicus Marine Service as well as observation technologies ] | Innovation | 23.01.19 |
| Secure, Clean and Efficient Energy | | | |
| LC-SC3-RES-28-2018-2019-2020 | Market uptake support [Development of tools or services using global earth observation data , (such as those available through Copernicus ), to support development and deployment of renewable energy sources] | Coordination & Support | 13.02.18 |
| LC-SC3-RES-28-2018-2019-2020 | Market uptake support [Development of tools or services using global earth observation data , (such as those available through Copernicus ), to support development and deployment of renewable energy sources] | Coordination & Support | 11.12.18 |
| Smart, Green & Integrated Transport | | | |
| MG-2-8-2019 | Innovative applications of drones for safety in transport [mentions Copernicus] | Research & Innovation | 16.01.19 (1st stage) |

# Other relevant topics (2/2)

| Climate Action, Environment, Resource Efficiency & Raw Materials | | | |
|---|---|---|---|
| LC-CLA-02-2019 | Negative emissions and land-use based mitigation assessment [mentions use of Copernicus ] | Research & Innovation | 19.02.10 (1st stage) |
| LC-CLA-04-2018 | Resilience and sustainable reconstruction of historic areas to cope with climate change and hazard events [actions build upon Copernicus Climate Change Service and Copernicus Emergency Management Service] | Research & Innovation | 27.02.18 (1st stage) |
| LC-CLA-05-2019 | Human dynamics of climate change [mentions use of Copernicus and GEOSS ] | Research & Innovation | 19.02.10 (1st stage) |
| LC-CLA-06-2019 | Inter-relations between climate change, biodiversity and ecosystem services [ actions build upon Copernicus Service ] | Research & Innovation | 19.02.10 (1st stage) |
| CE-SC5-03-2018 | Demonstrating systemic urban development for circular and regenerative cities [mentions use of observational programmes such as Copernicus and GEOSS ] | Research & Innovation | 27.02.18 (1st stage) |
| SC5-10-2019-2020 | Raw materials innovation actions: exploration and Earth observation in support of sustainable mining [mentions use of Copernicus , Earth observation ) | Innovation | 19.02.10 (1st stage) |
| SC5-14-2019 | Visionary and integrated solutions to improve well-being and health in cities [mentions use of Copernicus and GEOSS] | Research & Innovation | 19.02.10 (1st stage) |
| SC5-17-2018 | Towards operational forecasting of earthquakes and early warning capacity for more resilient societies [actions build on Copernicus Emergency Management Service ] | Research & Innovation | 27.02.18 (1st stage) |
| SC5-19-2018 | International network to promote cultural heritage innovation and diplomacy [mentions use of Earth observation data, Copernicus] | Coordination & Support | 27.02.18 |

# Thank you!

**#CopernicusEU**

www.ec.europa.eu/research

www.copernicus.eu

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European Commission