

## OVERVIEW

A focus on Horizon 2020 Space Programme. The 8<sup>th</sup> INCOBRA Factsheet address the open call topics “Space Weather” and “International Cooperation Copernicus – Designing EO downstream applications with international partners”, both encouraging international cooperation in the space sector. For both calls single-stage deadline, 12 March 2019.



## HORIZON 2020 CALL TOPICS “Space Weather” and “International Cooperation Copernicus – Designing EO downstream applications with international partners”

The INCOBRA factsheet #8 is dedicated to the EU-BR opportunities in the space sector, by presenting two call topics now open under the H2020 call on Leadership in Enabling and Industrial Technologies – Space.

According to the [Roadmap for EU - Brazil S&T cooperation](#) “space research has its main objective and challenge to foster a cost-effective competitive and innovative space industry (including SMEs) and research community to develop and exploit space infrastructure to meet future Union policy and societal needs. It is also a key topic identified in Brazil’s National STI Strategy 2016-2019, in line with the National Programme of Space Activities for 2012-2021. Brazil has two launching bases and current efforts are mainly devoted to the development of satellites for earth observation, weather monitoring and communication and research activities. Brazilian space industry is mainly composed of SME’s located in the southeast region of the country”.

Given the relevance of these topics, one of the five EU-BR bilateral cooperation networks granted by INCOBRA specifically works on PRECISE POSITION ESTIMATION FOR APPLICATIONS IN REAL-TIME AT BRAZILIAN LATITUDES ([PEARL NETWORK](#)), discover more about their objectives, activities and experience.

Below the details of the 2 Horizon 2020 call topics in the space sector.

### International Cooperation Copernicus – Designing EO downstream applications with international partners

Topic Identifier: **DT-SPACE-06-EO-2019**

Type of action: RIA, Research and Innovation Action

Deadline model: single-stage

Deadline: 12 March 2019

Budget: EUR 5 million (EUR 1-2 million per proposal)

Link H2020:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/dt-space-06-eo-2019.html>

### 2. Scope

- Proposals shall address a **wide variety of applications stemming from the use of Earth observation and their smart integration with other related technologies**. Copernicus should be considered as part of the solution which may include other space or non-space inputs.
- Applications shall be sustained by a **production process capable of delivering to the user a product which is validated and accepted as a marketable product in the international partner country**.
- Tasks shall include **joint calibration and validation activities or integration of local in-situ systems to enhance the quality of data and service products**. It is important to exploit the added value of integration of EO observation technologies (both satellite, airborne and ground based) with positioning ones, and ICT (enhancing new frontiers opened by cloud computing) from international partner countries through the development of applications, and encourage their insertion into the market.

### 1. Specific Challenge

Cooperation with international partners is key to promoting the **uptake of Copernicus globally**, exploiting possibilities for integrating in-situ, space data and information technologies. Building the Copernicus full, free and open data policy, the **EC seeks to facilitate access to Copernicus data and information for interested international partners**.

Cooperation with partner countries should be fostered with a view to using Copernicus data to jointly develop algorithms, services and/or products which serve local user needs and/or enhance the Copernicus global product quality.

The products need to be shaped according to users’ needs and their **value to users must be openly demonstrated** to the wider user community.

### 3. Expected Impacts

- Establish sustainable supply chains for innovative EO value added products and services with demonstrated commercial value with international client communities;
- Complete integration**, based on international standards, into the customer’s existing business processes and processing chains, as well as the **economic viability of the application is to be demonstrated**;
- Enhance the European industry’s potential** to take advantage of market opportunities and establish leadership in the field and to boost business activity;
- Lead to new or improved products, processes or services** on the market that are capable of generating within 3 years after the end of public funding a **significant turnover for the participants, and create new jobs**;
- Lead to an improved quality of the Copernicus global product, thereby **enhancing the stating of Copernicus data and information in a global environment and GEOSS**.



## Space Weather

Topic Identifier: **SU-SPACE-22-SEC-2019**

Type of action: RIA, Research and Innovation Action

Deadline model: single-stage

Deadline: 12 March 2019

Budget: EUR 9 million (EUR 2-3 million per proposal)

Link H2020:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/su-space-22-sec-2019.html>

## Scope

- Proposals shall address the **development of modelling capabilities and/or the delivery of prototype services** able to interpret a broad range of observations of the Sun's corona and magnetic field, of the Sun-Earth interplanetary space and of the Earth magnetosphere/ionosphere coupling relying on existing observation capacities.
- The goal is to pave the way for **forecasting horizons for space weather events in the order of tens of hours or days and to identify potential indicators (or proxies) of extreme events** potentially through the joint analysis of interdisciplinary data.
- Proposals shall address application domains which may include **space as well as terrestrial infrastructure**.
- Proposals shall include **architectural concepts of possible European space weather services in relation to the application domains addressed** and they shall **demonstrate complementary to and, if relevant, utilize precursor Space Weather services already available** through the Space Situational Awareness programme of ESA[1] and take into account the global space weather service developments by the World Meteorological Organisation (WMO).
- This action is also **open to cooperation with international partners with relevant expertise**.

## Specific Challenge

Commonly occurring space weather events have the potential to impact the performance of critical space and ground infrastructure disrupting operations and communications in multiple sectors of society. Extreme events could have devastating societal and economic consequences with potential costs for disruptions and damages estimated in tens or even hundreds of billions of Euros.

**Space weather must be monitored and forecasted just like terrestrial weather.** However, current space weather services are generally not capable of forecasting events over several days. A longer forecasting horizon would require access to data from new observation infrastructure coupled with new and improved modelling capabilities.

The challenge is to prepare for **a full exploitation of such data by a renewed effort on modelling and forecasting using currently available data.**

The EC announced that its intention to address threats and vulnerabilities including **the impact of space weather on satellites and on ground infrastructure such as transport, energy grids and telecommunication networks.**

## Expected Impacts

- Improved scientific understanding** of the origin and evolution of space weather phenomena;
- New models and forecasting techniques** capable of extending the time horizon of a future space weather forecasting capability to several days;
- Inventory of potential early indicators** of extreme space weather events.

## ZOOM on the focus areas

International Cooperation Copernicus – Designing EO downstream applications with international partners, DT-SPACE-06-EO-2019. FOCUS AREA: [Digitising and transforming European industry and services \(DT\)](#)

There is huge potential still offered by further digitisation of products, services and industrial processes in terms of wellbeing, growth and creation of jobs. Grouping digitisation and related transformation in a single focus area will reinforce coordination, allow to address uptake and investment barriers, and lead to synergies, knowledge transfer and common technological developments and standards that will support platforms and applications across sectors.

Space Weather, SU-SPACE-22-SEC-2019. FOCUS AREA: [Boosting the effectiveness of the Security Union \(SU\)](#)

The development of the EU as a Security Union builds on the European Agenda on Security presented in 2015. This focus area will support implementation of the Security Union: protecting infrastructure against natural and man-made threats, including cyber-attacks; improving resilience to natural and man-made disasters; fighting crime and terrorism; improving border security; digital security and privacy; space-related research; and better understanding of societal contexts and dynamics.