



EuroGEOSS Request 2018

Fields marked with * are mandatory.

Request for Expressions of Intent to scale-up and showcase EuroGEOSS Pilot Applications

EuroGEOSS is a regional initiative launched in October 2017 by the European countries, the European Commission and organizations participating to the Group on Earth Observations (GEO). From 2018 onwards, the EuroGEOSS initiative plans to launch periodic Requests for Expressions of Intent. All organizations located in European GEO member countries which are involved in developing, promoting or deploying innovative EO derived solutions are invited to come forward with voluntary Expressions of Intents for networking with other stakeholders along the value chain and scaling-up their activities within a timeframe of maximum three years.

This EuroGEOSS Request provides the online form to submit your Expression of Intent to the EuroGEOSS initiative. Submissions are accepted until 30 June 2018.

Why to submit an Expression of Intent?

- To share good practice, benchmark experiences and scale them up across different local contexts and across the EU;
- To network including with users and other stakeholders not yet involved in European Research and innovation EO activities;
- To get high visibility and recognition - including in GEO and Copernicus events - and take part in a more strategic dissemination at European and international level under the EuroGEOSS flag;
- To benefit from EuroGEOSS as a regional gateway to GEO;
- To link with important EO projects and programmes in Europe including Copernicus, Horizon 2020 and its follow-up programme after 2020;
- To benefit from and contribute to a reinforced European EO marketplace;
- To get regularly informed on funding opportunities;

- To participate in a European-wide, lasting partnership where shared competences, resources and skills are combined.

The Expressions of Intent should build upon the combination of existing funded developments. They must address the EuroGEOSS scoping priorities and selection criteria annexed to the text of the EuroGEOSS Request 2018.

All Expressions of Intent submitted online to the EuroGEOSS Request 2018 will be analyzed by the EuroGEOSS Coordination Group.

Action Groups will be established for each of those application areas where critical mass and market potential is identified from the submitted Expressions of Intent. Being selected for an Action Group is the prime mechanism to get your activity labelled as a EuroGEOSS activity. Each Action Groups shall facilitate upscaling of a specific EO applications characterized by a Technology Readiness Levels (TRLs) equal or above 5.

The Action Groups are not subject to a contractual basis. They represent ad hoc voluntary partnerships aiming at advancing the EuroGEOSS innovation agenda on a best effort basis and for a period of maximum three years.

For more information on this survey - including the EuroGEOSS selection criteria - see the *"Request 2018 for Expressions of Intent"* and the related *Frequently Asked Questions (FAQ)* available from the [EuroGEOSS](#) web site. You can also send your eventual questions to RTD-EUROGEOSS@ec.europa.eu.

Disclaimer

The European Commission is not responsible for the content of questionnaires created using the EUSurvey service - it remains the sole responsibility of the form creator and manager. The use of EUSurvey service does not imply a recommendation or endorsement, by the European Commission, of the views expressed within them.

Data protection related to this survey: *personal data protection will be ensured (please click [here](#) for further information).*

Specific Privacy Statement: *is available [here](#).*

DEADLINE FOR SUBMISSIONS: 30 June 2018

FEEDBACK BY EMAIL TO CONTRIBUTORS: end August 2018

LAUNCH OF SELECTED ACTION GROUPS: mid September 2018

1 PARTNERSHIP SUPPORTING THE EXPRESSION OF INTENT

1.1 LEAD ORGANISATION

* Lead organisation name

100 character(s) maximum

European Union Satellite Centre (SatCen)

* Lead organisation address (Address, city, country)

100 character(s) maximum

Apdo de Correos 511, Torrejón de Ardoz, 28850 Madrid, SPAIN

* Lead organisation URL/website

100 character(s) maximum

<https://www.satcen.europa.eu/>

Lead organisation profile in relation to GEO and/or Copernicus

If applicable, please describe briefly the links between your organisation and the GEO initiative and/or the Copernicus programme.

1000 character(s) maximum

The European Union Satellite Centre (SatGen) is participating in the H2020 project NextGEOSS, (topic SC5-20-2016: European data hub of the GEOSS information system). NextGEOSS is the European data hub and cloud platform contributing to the evolution of GEOSS at regional, European, level. The pilot application described here is integrated in the NextGEOSS system. The pilot application demonstrates the usage of the NextGEOSS Data Hub for discovery and access of Copernicus Sentinel-1 and Sentinel-2 data, as well as their exploitation for the detection of changes occurring at different temporal and spatial scales. Furthermore, SatGen is one of the Participating Organizations in GEO, where it is leading the GEO Space and Security Community Activity, and is actively participating in the EuroGEOSS initiative. Finally, SatGen is one of the Entities entrusted by the EC with respect to the Copernicus Security Service.

* Contact person (Name and firstname)

50 character(s) maximum

Sergio Albani

* Contact person e-mail

Sergio.albani@satcen.europa.eu

1.2 OTHER ORGANISATIONS

Name of other organisations (Please include the name and country of the other organisations separated by comma.)

1000 character(s) maximum

Types of organisations (Please select all types of organisations participating in your coalition)

- International organisation
- Public authority
- Research
- Business

- Non-governmental organisation
- Interest group
- Other (please specify below)

Are you looking for additional, specific expertise along the value chain?

- Yes
- No

2 YOUR EXPRESSION OF INTENT

*** Descriptive title**

200 character(s) maximum

Multi-scale Change Detection for Space and Security

Acronym (optional)

20 character(s) maximum

*** Abstract/executive summary (including the overall description of the intended EuroGEOSS pilot application)**

2000 character(s) maximum

Europe is facing challenges that are more diverse, less visible, and less predictable than before. Unanticipated pressures are sensed in natural and urban habitats, as a results of urbanization, migration, climate change and political instability, making a wide range of societal sectors concerned with Security issues (e.g. preparedness for, resilience to and mitigation of human or natural threats). Geospatial (and collateral) data constitute a rich, reliable and sustainable resource for Security applications addressing these needs. However, as the EO data are constantly growing in terms of variety, volume, velocity, veracity and value, the key challenge in the Space and Security domain is to improve the capacity to access, process and analyse this big heterogeneous data to provide decision-makers with timely, clear and useful information.

This pilot is being developed and integrated in NextGEOSS and builds on technological and algorithmic results achieved in the frame of two H2020 projects: Big Data Europe (Integrating Big Data, Software & Communities for Addressing Europe’s Societal Challenges) and EVER-EST (European Virtual Environment for Research – Earth Science Themes). EO datasets allow to identify features and to characterise their dynamics at various spatial and temporal scales. Change Detection is a transversal technique enabling long-term and large-scale monitoring of the changes occurring over urban, built-up and natural habitats within user-defined areas of interest. Information provided by change detection maps can directly support decision-making in environmental, scientific, humanitarian, security or political issues.

Within this context, the objectives of the Space and Security pilot in NextGEOSS are threefold: to provide tools for detecting and characterizing changes occurring on the Earth’s surface, to explore methods for extracting information on changes at different scales and to foster extensive exploitation of the NextGEOSS data hub.

EXPECTED INNOVATION OUTCOMES

(to tick one or several options from the form)

*What main EuroGEOSS innovation outcomes?

- Real life, user-driven demonstrated EO applications
- Reviews of user-related experience and questions
- Catalogues of good practices available in different languages
- Strategies for scaling-up new services including critical success factors
- Guidelines for business models, evidences on return on investment
- Innovative procurements of interoperable innovative solutions
- Innovation deals in the field of service solutions
- Reference site with high potential for replication in Europe
- Inter-regional cooperation
- Cooperation with H2020 projects
- Awareness raising campaigns
- Emerging themes of novel interest for European research & innovation.
- Education and training modules, including for trainers
- Other (please specify below)

EuroGEOSS POLICY PRIORITIES ADDRESSED BY YOUR INTENT (to tick relevant options from the form)

* **EuroGEOSS priorities**

- | | |
|---|--|
| <input type="checkbox"/> SDG2: Zero hunger | <input type="checkbox"/> SDG 14: Life below water / SDG 15: Life on land |
| <input type="checkbox"/> SDG 3: Good health and well-being | <input type="checkbox"/> SDG 13: Climate action - Paris agreement |
| <input type="checkbox"/> SDG 6: Clean water and sanitation | <input type="checkbox"/> SDG 13: climate action Paris agreement |
| <input type="checkbox"/> SDG 7: Affordable and clean energy | <input checked="" type="checkbox"/> Sendai Framework |
| <input checked="" type="checkbox"/> SDG 9: Industry innovation and infrastructure | <input type="checkbox"/> EU policies |
| <input checked="" type="checkbox"/> SDG 11: Sustainable cities and communities | |

* **Link to GEO SBAs**

- | | |
|---|--|
| <input type="checkbox"/> Food sustainability and sustainable agriculture | <input checked="" type="checkbox"/> Sustainable urban development |
| <input type="checkbox"/> Public health surveillance | <input type="checkbox"/> Biodiversity and ecosystem sustainability |
| <input type="checkbox"/> Water resources management | <input type="checkbox"/> Crosscutting: climate change and impact |
| <input type="checkbox"/> Energy and mineral resource management | <input checked="" type="checkbox"/> Disaster resilience |
| <input checked="" type="checkbox"/> Infrastructure and transport management | |

Is your Intent supporting directly the implementation of a specific EU policy?

- Yes
 No

EO application domains

- | | |
|--|--|
| <input type="checkbox"/> EO for sustainable agriculture | <input checked="" type="checkbox"/> EO for resilient cities |
| <input type="checkbox"/> EO for public health surveillance | <input type="checkbox"/> EO for nature conservation |
| <input type="checkbox"/> EO for sustainable water management | <input type="checkbox"/> EO for climate services |
| <input type="checkbox"/> EO for renewable energies and energy efficiency | <input checked="" type="checkbox"/> EO for disaster risk reduction |
| <input checked="" type="checkbox"/> EO tracking human settlement | |

* End user dimension (Who are the end users? How are they involved? How consolidated are the user needs?)

1500 character(s) maximum

SatCen supports the decision making and actions of the European Union in the field of Common Foreign and Security Policy (CFSP), in particular Common Security and Defence Policy (CSDP), by providing products and services resulting from the exploitation of relevant space assets and collateral data, including satellite imagery and aerial imagery, and related services. Main users of SatCen services are the European External Action Service, EU Member States, EU missions and operations, the European Commission, other EU Entities and international organisations such as the UN and OSCE.

SatCen is maintaining a continuous dialogue with key stakeholders. One of the instruments for stakeholder engagement is the GEO Space and Security Community Activity (where ESA and UNESCO-IHE are contributors) which enables a consistent collection of user requirements, helping to identify observational gaps to be filled and addressed by new space assets, technologies and solutions. The dialogue with stakeholders is conducted mainly in the frame of:

- Technical Working Group and Expert User Forum Meetings held several times per year at SatCen premises with the participation of Member States and relevant EU Entities;
- The Big Data From Space Conference (biannual event) organized jointly with ESA and JRC;
- The Big Data in Secure Societies Workshop (yearly event) organized by the EU SatCen.

* Market potential (Please document the level of already established market/uptake potential?)

1000 character(s) maximum

The change detection methodology for Sentinel-1 is in pre-operational stage, and is already being used within SatCen in support of other operational tools. The Sentinel-2 change detection component is currently being evaluated within SatCen, to assess the level at which it could bring the maximum added value to existing methodologies and to design the suitable utilization in operational environment.

* Targeted Technology Readiness Level (TRL) (What level of service demonstration/validation have you achieved /do you aim to achieve?)

1000 character(s) maximum

The pilot is being demonstrated in NextGEOSS which is TRL 7 for the overall system. The technical implementation of the pilot consists in the integration of workflows in the NextGEOSS platform, running the processing chains over Copernicus datasets (discoverable through the NextGEOSS data hub) and harvesting the resulting products by the data hub, in order to make them accessible to the Space and Security community. The pilot is structured in two implementation phases out of which one is currently at Beta version (TRL 5) the second is in Prototyping phase, with expected TRL 7 at the end of the pilot. The validation against the requirements of the domain of applicability was previously performed in the scope of projects EVER-EST and Big Data Europe.

* Description of planned upscaling activities (e.g. wider user base, extended service quality with additional data sources, transnational

deployment in Europe, closer-to-market activity, service replication/incubation, other upscaling activity?)

1500 character(s) maximum

In NextGEOSS the pilot will demonstrate the usability of Sentinel-1 and Sentinel-2 for long term monitoring and assessment of Land Use/Land Cover changes. The demonstration is initially planned for selected Areas of Interest. Through scale-up of cloud computing resources the pilot application will permit replication of processing over larger spatial areas and temporal intervals. This will enable demonstrations at larger scale, addressing a larger community of users.

* Link to GEO and GEOSS (How do you intend to take advantage of GEOSS data/GEO activities?)

800 character(s) maximum

The pilot is being developed by SatCen which is leading the GEO Space and Security Community Activity (SSCA), and is a GEO Participating Organization. The pilot will constitute one of the cornerstones for joint initiatives performed in the frame of SSCA between SatCen and other contributors (e.g. ESA, UNESCO-IHE), exploiting the transversal nature of the topic addressed (change detection).

* Leveraging Copernicus (How about exploiting existing data/services/platforms/resources from the Copernicus programme?)

1000 character(s) maximum

The pilot application is already leveraging Copernicus data sets and will benefit from the integration of the NextGEOSS platform with other platforms (e.g. Copernicus DIAS).

Duration(starting from September 2018)

- One-year duration
- Two-year duration
- Three-year duration

* Funding resources (Reference to existing/upcoming funding resources or projects supporting your Expression of Intent)

50 character(s) maximum

H2020 NextGEOSS project

Comments (optional)

1000 character(s) maximum

3 ABOUT THE EuroGEOSS REQUEST 2018

* How did you learn about this EuroGEOSS Request?

300 character(s) maximum

From EuroGEOSS Coordination group

Suggestions in view of future EuroGEOSS Requests (optional).

We would like to give you the opportunity to comment on this survey.

This will be taken into account for subsequent EuroGEOSS Requests after 2018.

1000 character(s) maximum

THANK YOU FOR YOUR COOPERATION.

Background Documents

[EuroGEOSS Request 2018 for Expressions of Intent.pdf](#)

[EuroGEOSS concept paper.pdf](#)

[FAQ](#)

[SpecificPrivacyStatement - EuroGEOSS 2018.pdf](#)

Contact

RTD-EUROGEOSS@ec.europa.eu
