



## 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](mailto: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**

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### **1.1 LEAD ORGANISATION**

\* Lead organisation name

*100 character(s) maximum*

Institute of Astronomy, Astrophysics, Space Applications & Remote Sensing / National Observatory of Athens

\* Lead organisation address (Address, city, country)

*100 character(s) maximum*

Lofos Nymphon - Thissio, 11810, Athens, Greece

\* Lead organisation URL/website

*100 character(s) maximum*

<https://www.astro.noa.gr/en/main/>

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*

IAASARS/NOA is coordinating GEO-CRADLE, upgraded to a GEO Work Programme Community Activity. It coordinates and integrates state-of-the-art Earth Observation (EO) capacities in North Africa, Middle East, and Balkans in support to the implementation of GEOSS and Copernicus in the regions. GEO-CRADLE addresses priorities in relation to Climate Change, Food Security, Raw Materials, and Energy, sustains a Networking Platform with >300 stakeholders and operates a Regional Data Hub fully interoperable with the GEOSS portal. IAASARS/NOA is also involved in the ESA initiative EO4SD on climate change resilience. Moreover IAASARS operates several DataHubs, federated with the Integrated Ground Segment of Copernicus, namely the Hellenic Mirror Site, the IntHub, the CollHub, the DIASHub, and the TmpHub, providing Sentinel data to the global EO stakeholder community. IAASARS/NOA supports the EMS and EFFIS components of Copernicus CS, and hosts the Greek GEO Office, the focal point of Greece in GEO.

\* Contact person (Name and firstname)

*50 character(s) maximum*

KONTOES Haris

\* Contact person e-mail

kontoes@noa.gr

## 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*

1. University of Thessaly,GR: a) Medical Faculty,Department of Hygiene&Epidemiology (<http://epidem.med.uth.gr>), b) Faculty of Veterinary Science,Department of Microbiology&Parasitology ([www.vet.uth.gr](http://www.vet.uth.gr)), c) Faculty of Agriculture Crop Production&Rural Environment,Laboratory of Entomology&Agricultural Zoology ([www.agr.uth.gr/index.php?option=com\\_content&task=view&id=48&Itemid=29&lang=en](http://www.agr.uth.gr/index.php?option=com_content&task=view&id=48&Itemid=29&lang=en))
2. National&Kapodistrian University of Athens,Medical School,Department of Hygiene, Epidemiology&Medical Statistics,GR (<http://dehems.med.uoa.gr>)
3. Hellenic Center for Disease Control&Prevention,MinistryofHealth,GR ([www.keelpno.gr](http://www.keelpno.gr))
4. Médecins Sans Frontières,GR ([www.msf.gr](http://www.msf.gr)) operating in>70 countries
5. Ecodevelopment,GR (<http://ecodev.gr>)
6. GEOAPIKONISIS,GR (<http://geoapikonisis.gr/>)
7. Imperial College London,FacultyofMedicine,SchoolofPublicHealth, UK ([www.imperial.ac.uk/school-public-health](http://www.imperial.ac.uk/school-public-health))
8. CEDARE,EG ([www.web.cedare.org](http://www.web.cedare.org))
9. Alexandria University,FacultyofMedicine,EG ([www.med.alexu.edu.eg](http://www.med.alexu.edu.eg))

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

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\* Descriptive title

*200 character(s) maximum*

Earth Observation for Epidemics of Vector-borne Diseases

Acronym (optional)

*20 character(s) maximum*

EO4EViDence

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

*2000 character(s) maximum*

Vector-borne diseases are caused by major human pathogens such as plasmodia (Malaria) and flaviviruses (Zika, Dengue, West Nile), and consist a global threat to public health with far-reaching socio-economic impacts. Vector-borne pathogens move between humans and animals by means of vectors-insects rendering the control of their spread into a major challenge. In order to design an efficient prevention strategy we need to know WHERE and WHEN these pathogens are more likely to emerge. Beside population movements, their transmission risk is highly dependent on the integrated ecology of host and vector populations, the later presenting geographic and seasonal patterns affected by climate/environmental factors.

The West Nile Virus (WNV) which has a global distribution, has relatively recently emerged into SE Europe. The virus is maintained in bird population reservoirs and is transmitted to humans through mosquitos of the culex genus.

EO is valuable to address this challenge as it systematically provides updated information on climatic and environment variables e.g. rainfall, soil temperature, wind, humidity, habitats, vegetation, water, soil moisture, urbanization, and geo-morphological parameters affecting the number and survival rate of vectors transmitting pathogens.

EO4EViDence studies the WNV as a proof of concept in a Greek site building upon the MALWEST project. It integrates in-situ collected data that will allow calibration and validation of risk modeling and early warning alerts. The early warning application integrates data from disparate fields (climate, environment, population and bird movements, transportation data, epidemiology & molecular epidemiology) to model the transmissibility risk of WNV.

The meteorological radar systems of NOA's climate change station in Antikythera will detect as aerial plankton migrating birds and insects. The radar based observations are the proxy to identify the spatiotemporal patterns of WNV spread from Africa to Europe.

## 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 checked="" 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 checked="" type="checkbox"/> SDG 13: climate action Paris agreement |
| <input type="checkbox"/> SDG 7: Affordable and clean energy                    | <input checked="" type="checkbox"/> Sendai Framework                       |
| <input 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 checked="" type="checkbox"/> Public health surveillance           | <input type="checkbox"/> Biodiversity and ecosystem sustainability          |
| <input type="checkbox"/> Water resources management                      | <input checked="" type="checkbox"/> Crosscutting: climate change and impact |
| <input type="checkbox"/> Energy and mineral resource management          | <input checked="" type="checkbox"/> Disaster resilience                     |
| <input type="checkbox"/> Infrastructure and transport management         |   |

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

- Yes  
 No

In case of support to EU policies, please specify

*500 character(s) maximum*

EO4EViDence supports the EU policy in response to the threat of communicable diseases, which focuses on surveillance, rapid detection, and rapid response ([https://ec.europa.eu/health/communicable\\_diseases/overview\\_en](https://ec.europa.eu/health/communicable_diseases/overview_en)). Relevant decisions include: Decision 2119/98/EC which was repealed and replaced by Decision No 1082/2013/EU, Decision No 2000/96/EC, Decision No 2002/253/EC, and Commission Implementing Decision (EU) 2017/253.

**EO application domains**

- |  |  |
|--|--|
| <input type="checkbox"/> EO for sustainable agriculture                  | <input type="checkbox"/> EO for resilient cities                   |
| <input checked="" 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 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*

The end users are on the one hand the relevant public authorities, such as the Hellenic Center for Disease Control & Prevention, Ministry of Health, Greece (<http://www.keelpno.gr/en-us/home.aspx>), and on the other hand the relevant non-governmental organizations, such as Médecins Sans Frontières, Greece (<http://www.msf.gr/en>) operating in more than 70 countries.

The end users are involved as consultants giving valuable input based on their long-term expertise in the field of epidemics, and their needs.

The user needs are consolidated, even defined by their mandate and mission. They need to receive all the useful information available including the information derived from EO data that helps to monitor the vector-borne diseases such as the WNV and facilitate the prevention of its outbreaks, the early detection of its activity, the prediction of its spreading, and the mitigation of its impact on public health.

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

*1000 character(s) maximum*

The early warning application will greatly support the national or regional competent authorities conducting programs for mosquito control, and help them in their decision making about the appropriate time of specific interventions. There is high potential for penetrating the health and mosquito repellent market, increasingly affecting untapped markets of rural regions for affordable management.

Additionally, the proposed application has significant impact in the agriculture sector especially linked to decision making about the appropriate time for pesticides application. Moreover, its impact in livestock is enormous in regards to early detection of exotic zoonotic diseases.

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

*1000 character(s) maximum*

The techniques developed in the MALWEST project ([www.malwest.gr](http://www.malwest.gr)) for WNV modelling combining wild bird serological surveillance data with environmental factors, integrated with the proposed EO and Copernicus based data and techniques together with the in-situ collected data for mosquitos and birds (traps, radar), and the EO based assimilations for deriving essential model parameters are in the overall level of TRL4-5. With EO4EviDence we aim to achieve the level of TRL6.

\* 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*

The outcomes of EO4EviDence will be upscaled to a wider user base, both inside Europe and in the neighbouring countries affected by the West Nile virus. The GEO-CRADLE Network in the Balkans, North Africa and Middle East will be exploited in this direction (<http://geocradle.eu/platform/>).

The service quality will be extended with additional data sources, both EO and in-situ, in selected countries. More specifically, the application will be used in other EU and non EU Mediterranean countries with similar epidemiological profile and risk for vector borne diseases. Climate change may increase the list of countries at risk for vector borne diseases. Additional data will increase the predictive value of the model both in time and space, and will make it applicable in other sectors as well (e.g. agriculture and livestock). The early warning application will be used to indicate resistance to insecticides.

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

800 character(s) maximum

EO4EViDence on the one hand will use GEOSS data, and on the other hand will produce data fully interoperable with the GEOSS portal.

Moreover all the data will be uploaded on the GEO-CRADLE Regional Data Hub (<http://datahub.geocradle.eu/>), which serves as a gateway with free and open access focused on the regions of Balkans, North Africa and Middle East.

EO4EviDence is linked to the GEO 2017-2019 Work Programme, especially with the Community Activities: Earth Observations for Health (EO4HEALTH) ([www.earthobservations.org/activity.php?id=143](http://www.earthobservations.org/activity.php?id=143)) which includes vector borne infectious diseases, Copernicus Atmospheric Monitoring Service (CAMS) ([www.earthobservations.org/activity.php?id=81](http://www.earthobservations.org/activity.php?id=81)), and Copernicus Climate Change Service (C3S) ([www.earthobservations.org/activity.php?id=82](http://www.earthobservations.org/activity.php?id=82)).

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

1000 character(s) maximum

EO4EViDence will exploit the Copernicus programme both in terms of data (Sentinels high resolution satellite images) and in terms of platforms (DIAS cloud processing).

Moreover EO4EviDence will leverage two important Copernicus Services: the Copernicus Atmospheric Monitoring Service (CAMS) ([www.earthobservations.org/activity.php?id=81](http://www.earthobservations.org/activity.php?id=81)), and the Copernicus Climate Change Service (C3S) ([www.earthobservations.org/activity.php?id=82](http://www.earthobservations.org/activity.php?id=82)).

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

Own in-kind contribution & seek upcoming funding.

Comments (optional)

1000 character(s) maximum

### 3 ABOUT THE EuroGEOSS REQUEST 2018

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\* How did you learn about this EuroGEOSS Request?

300 character(s) maximum

GEO-CRADLE Project Coordinator Dr Haris Kontoes (NOA, Greece) was invited by the EC to the Workshop on the EuroGEOSS 2018 Request for Expressions of Intent which was organised on June 6th 2018 in Brussels, Belgium.



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](#)

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## **Contact**

RTD-EUROGEOSS@ec.europa.eu

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