National Oceanography Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

EU survey on Earth observation in a global context

A public consultation on possible EU actions in relation to global coordination of Earth observations via the Group on Earth Observations (GEO)

Fields marked with * are mandatory.

Why this survey?

This survey builds on consultations conducted by the European Commission in 2013 & 2014 with the aim to provide the state of play regarding the implementation of the Global Earth Observation System of Systems (GEOSS) by the Group on Earth Observations (GEO) during the last ten years. As an outcome of these previous consultations (see reference documents accessible from this survey), several preliminary issues & possible actions at EU level have been identified in view of accelerating the evolution of the GEOSS into a system that could effectively contribute to EU policies, generate business opportunities for the EU industry & bring benefits to European society as a whole.

Through this EU public consultation, the European Commission is actively seeking contributions by all those in Europe interested in the global context of Earth observation in order to help:

- estimate general awareness of & stance on Earth observations (EO), GEO & GEOSS;
- appreciate how to maximize EU benefits from an increased Earth observation coordination through GEO;
- collect views on a set of possible actions at EU level in the field of global Earth observation & GEO.

Contributions are expected until 20/04/2015.

Background & reference documents

The Earth's atmosphere, oceans & landscapes are changing rapidly, with human activities being a major driver. Monitoring & modeling these changes are critical because they allow governments, society & the private sector to make informed decisions about climate, energy, food security, natural hazards, health & other societal challenges.

Earth Observations (EO) are remote sensing or in situ measurements collected by a wide diversity of sensors on-board various monitoring platforms such as ships, buoys, aircrafts, balloons, drones, or satellites. They can also be ground-based or acquired by citizens using for instance their smart phones or other mobile devices. Such monitoring sensors & the related Earth observation information systems are managed by a high diversity of public & private entities around the world. For decades, this situation has led to a fragmented global landscape for Earth system monitoring.

Aiming at improving Earth observations, the intergovernmental Group on Earth Observations (GEO) provides a framework where governments & international organisations can develop new projects & coordinate their strategies & investments. GEO's main role is to develop & implement a Global Earth Observation System of Systems (GEOSS) which aims to facilitate discovery, access & integration of global Earth observations in order to improve environmental decision-making. In January 2014, the Ministers & other heads of delegations from the GEO Member governments have resolved to continue the GEO voluntary partnership. They have

decided to renew the GEO mandate for another period of 10 years. The next GEO decade (period 2016-2025) will be crucial in order to intensify use & exploitation of a more robust GEOSS & bring more benefits to the users of global Earth observations also to the European society.

Reference documents:

The Commission Staff Working Document entitled "Global Earth Observation System of Systems (GEOSS): Achievements to date & challenges to 2025" (SWD(2014) 292 final of 25 September 2014);

The Conclusion report of the Workshop "Engaging the Private Sector in GEOSS – A European Perspective" organised in Brussels in September 2014;

Brochure on EU Research on Earth Observations (2013)

DATA PROTECTION: Personal data protection will be ensured - please click here for further information.
SPECIFIC PRIVACY STATEMENT: please click here for further information.

A. Awareness of & stance on Earth observations, GEO & GEOSS.

As regards Earth observations, are you primarily on the supply side (interested in providing EO data, information and/or products to meet other users' needs) or the demand side (with an interest in identifying EO-based solutions to your own questions or issues)?*

- [ ] EO supply side
- [ ] EO demand side
- [x] Both supply & demand sides
- [ ] I don't know

What kind of role do Earth observations play in your current activities?*

- [x] Central
- [ ] Occasional
- [ ] Peripheral
- [ ] No specific role, but I have a general interest in Earth Observations

How would you rate your interest in the following sources of EO data?

	High interest	Moderate interest	Low interest	No interest
Airborne Earth observations*		x		
Ground-based Earth observations*		x		
Seaborne Earth	x			

observations*				
Space-borne Earth Observations*	x			

Do you see these emerging Earth observation data flows as future strategic assets for environmental monitoring? *

	Yes, I entirely agree	Yes, I agree to some extent	No, I disagree to some extent	No, I entirely disagree	I don't know
Observation data from personal mobile devices*		x			
Data from drones*	x				
Data extracted from social media*		x			
Data output from models or simulators*	X				
Data from objects linked to the internet (e.g. sensor and actuators)*	X				
Other significant emerging EO data streams (please specify)	x				

Please specify.*

500 character(s) maximum

Global navigation & communication satellites are other EO data streams. Mobiles & social media may be useful in coastal environments (e.g. beach litter maps), but less so offshore due to access limitations. Offshore observation data from marine drones is evolving rapidly & will be a future asset. Real time telemetry, sensors & models will be further strategic assets. EO may ensure quick data delivery to decision makers allowing rapid response to emergency situations or monitoring/enforcement.

Is global cooperation essential for easy access to Earth observation systems & open data?*

- [x] Yes, I entirely agree
- [ ] Yes, I agree to some extent
- [ ] No, I disagree to some extent
- [ ] No, I entirely disagree
- [ ] I don't know
- [ ] No

Are you aware of the Group on Earth Observations (GEO)?*

- [x] Yes
- [ ] No

If so, have you visited its website before this consultation?*

- [x] Yes
- [ ] No

If you belong to an organisation, is it directly involved in GEO activities?*

- [x] Yes
- [ ] No
- [ ] I don't know
- [ ] I don't belong to an organisation

Are you aware of the Global Earth Observation System of Systems (GEOSS)?*

- [x] Yes
- [ ] No

If so, have you ever used the GEOSS portal to search for, access to or contribute Earth observation data, information or services?*

- [x] Yes
- [ ] No

Are you aware of the collection of datasets shared by the GEO Community on a full, open & unrestricted basis (the "GEOSS Data Collection of Open Resources for Everyone" or GEOSS Data CORE)?*

- [x] Yes
- [ ] No

Are you aware of the EU's Copernicus programme & the Earth observation data & thematic services which it is increasingly providing?*

- [x] Yes
- [ ] No

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B. Assessing benefits from & barriers to a stronger EU coordination of Earth observation through the Group on Earth Observations (GEO)

Which of the following GEO-related features are most relevant to your situation?

	High interest	Moderate interest	Low interest	I don't know
International cooperation on Earth observations to tackle global challenges*	x			
Achieving international, national &/or local policy goals using Earth observations shared by the GEO community*	x			
Developing Earth observation products & services exploiting the full & open Earth observation data shared via the GEOSS information system*	x			
Better coordination of public-sector initiatives concerning Earth observation in Europe, to make Europe's contribution to GEO more coherent*	x			
GEOSS as a tool for marketing & advertising EO assets & services internationally & expanding networks, to open up global markets*		X		
Achieving a robust monitoring capacity & sound knowledge base on the Earth system, to help meet the Sustainable Development Goals*	x			
GEO as a tool for sharing responsibility for EO capacity building (e.g. training, education & equipment for EO		x		

monitoring & processing) & the costs it entails*				
Identifying monitoring gaps & research questions relating to the Earth system*	x			
Other (please specify)	x			

Please specify:*

Text of 1 to 500 characters will be accepted

Oceanography is a global field, thus it is a priority to facilitate international cooperation to address global scientific problems. Furthermore to ensure continued funding marine scientific observation programs must ensure societal impact by aligning work with policy drivers. As such ensuring international work aligns with policy goals is of use as well. Furthermore ensuring transforming into useable products for operational oceanography purposes help better link industry & academia.

What are the key reasons justifying a stronger EU approach to GEO & global Earth observations, & what opportunities would such an approach offer? Please specify.

	Yes, I entirely agree	Yes, I agree to some extent	No, I disagree to some extent	No, I entirely disagree	I don't know
Many of the environmental issues facing Europe are global in nature, calling for EO-based EU action in cooperation with other regions.*	x				
GEO helps promote research & innovation. It is a unique forum for coordinating the whole observation community.*		x			
GEO is a way of leveraging existing EO-related infrastructure, programmes, projects & activities; it boosts its major contributors' international standing.*		X			
The EU's Copernicus programme for Earth observation can be promoted worldwide as a key EU contribution to GEOSS.*	x				
The EU could benefit from the current data revolution & the Internet of Things, which have huge potential for innovative uses of EO data & products.*	x				
The full & open data access to remote sensing & in-situ observations advocated by GEO	x				

offers opportunities for innovation & growth.*					
Other (please specify)	x				

Please specify.*

500 character(s) maximum

International approaches to EO help understand global scientific problems & further develop research & innovation. Within oceanography there EU funded programmes such as FixO3 & ATLANTOS already work to better coordinate ocean observations, technology innovation & data management. GEO could help to facilitate access to long term funding to ensure that such programmes are sustained into the future beyond the EU funding lifecycle but would need alignment with existing mechanisms.

What are the main barriers to a stronger EU approach to GEO & global Earth observations?

	Yes, I entirely agree	Yes, I agree to some extent	No, I disagree to some extent	No, I entirely disagree	I don't know
Future commitment of resources to GEO in a context of high pressure on public budgets*	x				
GEOSS's added value & impact not demonstrated enough*	x				
General GEOSS usability & data quality documentation*		x			
Perception that GEO might be in competition with existing & new EO-related initiatives*	x				
Lack of an overall framework for engaging the private sector in supporting &/or exploiting the GEOSS information system*		X			
GEO synergies with some UN programmes & initiatives not sufficiently well developed*	x				
Uncertainty about the extent to which GEOSS will be implemented between		x			

2016 & 2025*					
Other (please specify)	x				

Please specify.*

500 character(s) maximum

GEO needs to be clear as to what its mandate is & how it will align itself with existing activities & organizations in order to achieve its goals. For example engagement with IOC, the UN organization for ocean science matters & its associated programmes, would seem to be an obvious route of engagement/alignment. Engagement with the private sector to develop outputs for data is important however this needs to be done in parallel with the engagement of the scientific community.

C. Possible EU-level action in the field of global Earth observation & GEO

For what specific issues relating to global Earth observations & GEO is there a need for a stronger EU approach?
Please rate the following measures according to whether you expect them to have high, medium or low priority for the EU.

	High priority	Medium priority	Low priority	I don't know
Stronger model of European coordination (more formal & structured) vis-à-vis GEO & GEOSS, to maximise GEOSS benefits to the European society*		x		
Benchmarking & promoting successful GEO-related coordination mechanisms, currently implemented at national & regional levels*		x		
Stronger European Research Area in the field of Earth Observation, with more international EO research & innovation activities targeting GEOSS & the EU Copernicus programme*	x			
Stronger operational synergies between GEOSS & the EU's Copernicus programme*		x		
EU action to encourage the private sector in Europe to seize future GEOSS business opportunities*	x			
EU action to improve coordination of the various public bodies & systems in Europe that collect in-situ & socioeconomic data, to provide more structured access to such data*		x		
EU action to accelerate the trend towards open data, with a focus on Earth observations*	x			
Reinforced Community research, benchmarking & pilot deployment activities in the field of EO data management, to support data reuse*	x			
EU action to empower citizens through EO-related citizens' science & citizens' engagement in the collection of environmental data*			x	
EU action to help develop a regional European GEOSS information system that is interoperable with the Copernicus dissemination infrastructure*	x			
Other measures expected to have high EU priority (please specify)	x			

Please specify:*

Text of 1 to 500 characters will be accepted

A strong EU approach is needed to ensure a commitment to sustained funding of EO in the marine environment. Encouragement across the EU for improved data access & management is also needed. In the marine sector there is already a complex world of data management portals & programmes. Guidance as to which portals to use, ensuring maximum data archiving & access in the long term would be of benefit. Engagement with the private sector would help to develop societal impact of EO research.

How important are the following issues to improving the position of the European EO service industry on the world stage?
Please rate the following measures as high, medium or low priority.

	High priority	Medium priority	Low priority	I don't know
Setting up a European GEOSS forum for ongoing dialogue with European businesses*		x		
Demonstrating / promoting new businesses opportunities based on mobile GEO-based applications for local needs by non-expert users*		x		
Setting up public-private partnerships (PPPs) for Earth observation to facilitate GEO engagement & GEOSS take-up by the European EO service industry*	x			
Action to address the full value chain from EO research to innovation & market deployment, including more intensive use of public procurement for innovative solutions & pre-commercial public procurement*			x	
Increasing awareness of GEO & GEOSS in 'local' European companies, especially small & medium-sized firms & start-ups involving young entrepreneurs that could potentially benefit from GEOSS*	x			
Commission support to new business opportunities in the field of Earth observation through financial rewards (prizes) for meeting a specific technological challenge in the GEO area*			x	
Any other high-priority issue (please specify)	x			

Please specify:*

Text of 1 to 500 characters will be accepted

In order to improve the EO service industry globally, improved relationships & connections need to be made between academic & business communities. The needs of each community needs to be properly mapped against one another to fully understand the synergies between the two groups & identify where GEO can play a formative role in bringing science & business closer together.

D. Respondent's profile

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Are you completing this questionnaire on behalf of an organisation, or as an individual?*

- [ ] Individual
- [x] Organisation

If you are completing the questionnaire on behalf of an organisation, is it listed in the EU's Transparency Register?*

- [ ] Yes
- [ ] No
- [x] I don't know

What is your registered ID Number?*

Text of 1 to 100 characters will be accepted

n/a

The content of your response to this EU survey will be made public by the Commission; how would you like your contribution to appear? *

- [x] Under the name supplied in response to the next question
- [ ] Anonymously

Please enter the name of your company / organisation. This information will not be published in case of anonymous contribution.*

Text of 1 to 200 characters will be accepted

National Oceanography Centre, UK

Would you like to receive a summary of the main outcomes of this survey? Please indicate an email address (full address: xxxx@xxx.xx). This information will remain confidential.

Jennifer.Riley@noc.ac.uk

Where are you based?*

United Kingdom

Please specify your country.*

Text of 1 to 200 characters will be accepted

United Kingdom

If you are replying on behalf of an organisation, please specify what type.*

- [ ] International organisation
- [ ] Public authority

- [x] Research
- [ ] Business
- [ ] Non-governmental organisation
- [ ] Interest group
- [ ] Other (please specify)

What type of research organisation?*

- [x] Public research institute
- [ ] Private research
- [ ] University
- [ ] Other (please specify)

E. Overall comments

Do you have any comments or further issues that you would like to mention here?

2,500 character(s) maximum

Coordination of Global Earth Observations through GEO is a worthwhile undertaking. Across Europe there are many existing programmes working to coordinate marine EO. These programmes directly interact with scientists undertaking observational work, & so perhaps have a higher profile than GEO. GEO could raise its profile by increasing the working groups interaction with the wider scientific community.

EU funded programmes (e.g. FixO3 & ATLANTOS) are funded on short timescales (4 years). Funding for individual science projects can be shorter still (1-3 years). Despite this insecurity in sustained funding there continues to be a wide range of marine activities undertaken, many of which are not yet represented in the existing GEO working groups. Working to secure long term funding for sustained ocean observations from both a top down (GEO) perspective & a bottom up (EU/Member State Perspective) would help ensure that marine EO complements the terrestrial & atmospheric long term data sets.

In the UK emphasis is placed on cross-disciplinary research projects, looking at scientific problems/questions, which span the oceans, atmosphere & land (e.g. measuring carbon fluxes). If GEO raised its profile scientists & science coordination programmes would be more aware of interdisciplinary links, bring a more holistic approach to solving EO problems & challenges.

From a marine perspective the structure of GEO overlaps & or complements the ongoing work of the Intergovernmental Oceanographic Commission (IOC). As such it would seem prevalent to ensure that new GEO activities are mapped onto existing programmes, especially in light of the new GEO mandate.

Interaction with companies will help to better demonstrate the societal relevance of EO work. In marine science the process of tailoring data products to industry needs is known as operational oceanography. There is a big push currently in the UK to increase interactions with industry, furthering research & development potential. If the EU facilitated research-industry interactions it would feed into both the international GEO work plan & facilitate individual member state efforts. However, the promotion of academic-industry links should not be undertaken at the expense of blue skies fundamental research work. A balance of blue skies & applied research is needed to ensure a balanced research & development sector.

You can also submit your contribution in free format.

Please upload your file (max. 1MB).

Do not forget to insert the captcha code in order to submit your contribution!