

## **About this document**

This document describes the revised Terms of Reference (ToR) for the EuroGOOS Science Advisory Working Group (SAWG). The last changes consider the **EuroGOOS Strategy 2030** and the outcomes from the EuroGOOS Integration Workshop in November 2019.

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## 1. Background, Rationale, and Link with EuroGOOS Strategic Priorities

Founded in 1994, EuroGOOS fosters European co-operation and participation in the Global Ocean Observing System (GOOS). The core activities of EuroGOOS, i.e., operational oceanography for serving public safety, blue economy, climate change adaptation, and ocean health, are carried out by EuroGOOS members, the five EuroGOOS Regional Operational Oceanographic Systems (ROOSs), i.e. Arctic ROOS, BOOS, NOOS, IBI-ROOS and MONGOOS, EuroGOOS Task Teams (TTs), Working Groups (WGs), and projects. Strong cooperation within these regions, enabling the involvement of many more regional partners and countries, forms the basis of EuroGOOS work, and is combined with high level representation at European and global forums. The EuroGOOS Scientific Advisory Working Group (SAWG) was established in 1996 to develop the EuroGOOS scientific strategy and support consultation with the EuroGOOS bodies.

Recognizing that science is the basis and one of the major driving forces for operational oceanography; that ROOSs are facing common scientific challenges developing new service capacities in **seamless** earth system prediction, understood as an integrated monitoring-modelling capacity for marine subsystems (ocean, waves, ice, atmosphere, sediment, pollutants, biogeochemistry and biology) in seamless spatial scales from sea basin to coastal-estuary and temporal scales from synoptic to seasonal and climate scales; scientific advice is needed in order to transfer the seamless approach to ROOSs, EuroGOOS Task Teams (TTs), and Working Groups (WGs) and help integration of these activities among themselves;

Recognizing that enhanced integration inside EuroGOOS, i.e., between ROOSs, Task Teams and Working Groups is needed to develop integrated competence of EuroGOOS, and that, after the Integration Workshop in November 2019, there is a mandate from the Executive Directors Board to the SAWG to initiate, develop, and propose recommendations on this integration process;

Recognizing the need of breaking existing barriers and increase integration among EuroGOOS operational and non-operational oceanographic communities (e.g., marine environment, fisheries, climate change research, or blue economy sectors) during the process of developing a coordinated and sustained European Ocean Observing System (EOOS) as well as needs for better EU cooperation to serve the UN Sustainable Development Goals and to help the implementation of UN Decade of Ocean Science for Sustainable Development;

Recognizing that operational oceanography services development in European and regional level has been strongly supported by the European Commission via the Copernicus Marine Environment Monitoring Service (CMEMS), the European Marine Observation Data Network (EMODnet) and by research projects funded by EU Horizon 2020/Horizon Europe and the JPIs;

Recognizing that a scientific strategy is needed to implement EuroGOOS Strategy 2020-2030, and the EuroGOOS scientific strategy white paper (She et al., 2016) identified four research priority areas for European operational oceanography, i.e., sustained European ocean observing, operational modelling and forecasting, coastal operational oceanography, and operational ecology;

Recognizing that operational oceanography is a branch of science that requires continuous implementation of the most advanced research findings to comply with ocean user requests, as well as great opportunities and challenges for operational oceanography via its assimilation of satellite and multi-platform *in situ* ocean data;

Recognizing that an active feedback between research and operational sciences needs to be enhanced and maintained, since it is the basis of the improvement of existing services and development of new services. Without this strong feedback, operational oceanography will fail to deliver the high quality products and services required by the growing number of pressing marine environmental and maritime service areas.

EuroGOOS SAWG should thus provide information and guidance on what the research priorities should be at national, regional and European levels, and help to translate these priorities into possible actions to be performed by EuroGOOS members, the different ROOSs, TTs and WGs.

The EuroGOOS SAWG aims to support EuroGOOS members, ROOSs TTs, and WGs on their research (hereafter referred as “EuroGOOS research”) by:

1. Supporting cross-cutting integration among ROOSs, WGs and TTs on scientific and technological aspects;
2. Supporting the implementation of the EuroGOOS strategy and development of EOOS;
3. Giving advice by identifying scientific gaps and addressing on the scientific challenges in developing seamless modelling, monitoring and forecasting capacities, covering full scale marine space, time and parameters, and serving public safety, blue growth, climate change adaptation, and ocean health services;
4. Facilitating scientific gaps and cooperation with relevant external communities, e.g. marine environment, fishery, climate change, or commercial blue-growth sectors.

## 2. Target Audience and Expected Impact

SAWG serves the EuroGOOS members and the subsidiary bodies of the EuroGOOS association, i.e., the ROOSs, Task Teams, and Working Groups. SAWG will analyse the status of the scientific requirements by these groups (among others, via the EuroGOOS integration workshops), and deliver recommendations for an integrated approach in EuroGOOS towards filling the scientific gaps, meeting the opportunities of collaboration, and transferring the EuroGOOS pan-European vision to the national and regional systems.

The target audience of the SAWG activity is the broad EuroGOOS operational oceanography community including EuroGOOS members and the subsidiary bodies. It is expected that the SAWG will:

- i) Provide scientific advice to the EuroGOOS members in developing their national priorities, especially in expanding their service to coastal-estuary continuum, marine climate change, and ocean health services;
- ii) Help EuroGOOS develop integrated competences in the process of ROOS-TT-WG integration on scientific and technological aspects;
- iii) Identify main scientific priorities for the future implementation of EuroGOOS and ROOS strategies including EOOS, and especially in helping ROOSs, TTs and WGs with developing roadmaps and implementation plans with a seamless approach.

[To be agreed and further elaborated in the early stages of Working Group set-up.]

### 3. Aim, Objectives & general approach

A general approach for the EuroGOOS SAWG in the period 2021-2024 (and to be updated every 4 years) is to concentrate efforts on the applied research issues that can **envisage a strategy for integrating ROOSs, WGs and TTs** towards a seamless approach for **the implementation of the EuroGOOS scientific strategy areas in EOOS, operational modelling and forecasting (including climate change), coastal operational oceanography, and operational ecology**, which will lead to an expansion of EuroGOOS services from operational activities to climate change and ocean health.

In view of that, **seven scientific and technological issues** are targeted, including:

1. Define scientific priorities for enhancing internal integration among ROOSs, WGs, TTs, the EuroGOOS members and the EuroGOOS Office;
2. Strategically support the work with ROOSs to identify gaps in developing seamless modelling, monitoring and forecast capacities, including optimizing regional sea and coastal ocean observing systems;
3. Strategically support the work with ROOSs to identify scientific challenges and make recommendations for developing marine climate change adaptation service especially for high-resolution regional, coastal-estuary-flooding climate modelling, impact modelling and indicator service;
4. Strategically support the work together with ROOSs, regional sea conventions, and fishery communities to identify scientific challenges and make recommendations for developing operational ecological service to fit for the purposes on ocean health;
5. Propose the design of a roadmap for developing operational ecology;
6. Support improved communication for scientific cooperation within ROOSs and between ROOSs, WGs and TTs (open and shared science) by sharing best practices in using efficient modern communication tools for dynamic and efficient joint research development.

### 4. Composition and Operation

The working group is composed of a Chair, with potentially a Co-Chair, and members. Chair is supported by a dedicated officer at the EuroGOOS Office.

#### Chair's nomination process, mandate, responsibilities

The Chair of the SAWG must be supported by a Co-Chair. Both Chair and Co-Chair must be a representative of a EuroGOOS member organization<sup>1</sup>. In this case, the mandate, role and responsibilities of the Chair and Co-Chair are the same. Co-Chair takes on the role of Chair if the Chair is unable to act. The Chair is nominated by the EuroGOOS Executive Directors Board and approved by the EuroGOOS General Assembly. The Chair's mandate is for three years, renewable once, upon re-election for a two-year term. The Co-Chair is elected by the members of the group and approved by the EuroGOOS Executive Directors Board.

The Chair is responsible for:

- Oversight of the Working Group;

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<sup>1</sup> <http://eurogoos.eu/about-eurogoos/members>

- Alignment of the Working Group's work with its Terms of Reference and with the EuroGOOS Strategy;
- Developing the Working Group yearly implementation plan in line with the above;
- Reporting to the EuroGOOS General Assembly and Executive Directors Board (including both at physical/virtual meetings and in writing);
- Regularly reviewing the membership of the Working Group (i.e., once a year);
- Regularly liaise with the EuroGOOS Office to follow up on the Working Group's alignment with the other EuroGOOS activities (at least monthly);
- Represent the Working Group at external meetings.

## Members nomination and selection process, mandates, responsibilities

SAWG membership will comprise of representatives of EuroGOOS members as well as Task Teams, WGs, and ROOS.

Two-step SAWG members selection process will be adopted:

1. A call to the EuroGOOS members to nominate SAWG members with relevant expertise;
2. A call to the EuroGOOS TTs, WGs, and ROOSs to ensure their representation in the SAWG and to complement the missing expertise.

Members are selected from the pool of nominations by the Chair and the EuroGOOS Office, keeping in mind the spread and representativeness in expertise, geographical representation, and the gender balance.

Members do not have an established mandate unless the activity is terminated. However, membership is reviewed by the Chair and the EuroGOOS Office on a regular basis and can be terminated if the member does not fulfil the below responsibilities.

Members' responsibilities are to:

- Participate in the Working Group activities;
- Deliver outputs as required, orally or in writing, in a timely manner;
- Represent the activity at external meetings, upon agreement with the Chair and the EuroGOOS Office;
- Attend Working Group meetings;
- Follow-up on the developments related to the Working Group's activity, to ensure the Working Group's work is timely and topical.

## 5. Mode of Operation

The SAWG Terms of Reference are developed by the SAWG Chair in liaison with the EuroGOOS Office and ROOS Chairs and Co-Chairs and submitted to the EuroGOOS Executive Directors Board for approval. Once approved, the Working Group Chair and the EuroGOOS Office launch a call for member nominations.

When the membership of the Working Group is established, the Working Group is regarded as operational. Either a physical or virtual kick-off meeting will be organized to agree the Terms of Reference with all the members and develop the first annual implementation plan. EuroGOOS Office oversees the communication related to the Working Group activities.

The group operates based on its Terms of Reference and annual implementation plans. Its activities are reviewed at the EuroGOOS Executive Directors Board meetings (four times a year) and the EuroGOOS General Assembly (annually).

## 6. Deliverables

The Working Group may have a role as a forum, providing a platform for exchange of expertise and generation of strategic advice. It can also be of a more operational nature, organizing regular meetings, establishing interfaces with communities outside of those of the Working Group, delivering publications and reports. A list of envisaged deliverables is prepared at the Working Group kick-off meeting and is updated as the activity develops.

The deliverables of the WG include:

- A general description of the seamless approach as a guideline for the EuroGOOS members, ROOSs, TTs and WGs;
- A set of science priorities for the EuroGOOS 2030 strategy, e.g., in the areas where there are current gaps;
- Meetings with ROOSs, TTs, and WGs to define and implement the seamless approach for service development in the relevant areas;
- Joint reports (roadmaps) with ROOSs, TTs, and WGs on seamless service development in their relevant areas;
- Contribution to the EU consultations, together with all Chairs, the Executive Directors Board, and the EuroGOOS Office.

## 7. Indicative Timetable (Gantt chart)

The below template is indicative. It will be prepared based on the above guidelines and the implementation plan 2021-2024.

	01/21	06/21	01/22	06/22	01/23	06/23	01/24	06/24
<b>Terms of Reference V0 &amp; 1</b>	X							
<b>Comments by Exec. Board</b>		X						
<b>Comments by General Assembly &amp; EuroGOOS Office</b>		X						
<b>Selection of Chair / Co-Chair</b>		X						
<b>Terms of Reference V2</b>		X						
<b>Approval by Exec. Board</b>		X						
<b>Call for member nominations</b>		X						
<b>Kick-off meeting</b>			X					

<b>A general description of the seamless approach</b>			x	x				
<b>Meetings with ROOSs, TTs, and WGs</b>			X	X	X	X	x	x
<b>Preparing joint reports (roadmaps) with ROOSs, TTs, and WGs</b>				Draft		Final		

\*The ToR v1 was reported in EuroGOOS GA 2020 in Sep. 2020, comments were asked.