

Terms of Reference

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

Sea level is one of the critical variables of our environment and clearly one of the marine parameters with more impact on the coastal population. Its measurement along the coasts has been made since the early XIX century by means of tide gauges that still today represent one of the fundamental methods of determination of trends in mean sea level and extremes (and their relation to climate change), tidal computation, geodetic applications, harbour operations and navigation and, more recently, integration in new sea level hazards warning systems (tsunamis and storm surges).

This critical and increasing need for tide gauge data, based on recent coastal disasters and the projections of sea level changes in the future, has yielded the establishment in 2015 of this task team, that has the role of bringing together the European and adjacent seas tide gauge community by: compiling information on existing sea level networks, sharing expertise and experience across this community, providing expertise on tide gauge observations to operators and scientists and supporting national and regional sea level initiatives to maintain a permanent and sustainable system. The initiative is not trying to replicate existing efforts but fostering collaboration, scientific and technological development and by this enhancing the European and adjacent countries capacity, under the new umbrella of international programs of data exchange such as CMEMS, as well as the existing ones such as the Global Sea Level Observing System (GLOSS) or the Permanent Service for Mean Sea Level (PSMSL). Activities will be aligned with the EuroGOOS strategy and will promote mutual co-operation wider EuroGOOS entities e.g. other task teams, working groups and Regional Ocean Observing Systems (ROOS)

2. Target Audience and Expected Impact

The target audience of the Tide Gauge Task Team are the different Regional Ocean Observing Systems (ROOSs), national tide gauge operators, sea level scientists, data portals, main European programmes (CMEMS and EMODnet) the global sea level community (GLOSS), altimetry community, tsunami and storm surge warning systems, modelling community and local users such as harbours and hydrographers.

The priority is to construct a framework to increase the collaboration between the different actors and avoid duplication of efforts while maintaining the adequate and relevant information available and easy to access for the different purposes/applications.

3. Aim and Objectives

The EuroGOOS Tide Gauge Task Team will address the following objectives:

1. As a European Tide Gauge Network assist in the standardization of tide gauge operations, data processing and management and data applications of a multi-purpose network, based on GLOSS and ICG/NEAMTWS and other user requirements, and fulfilling the following basic needs:
 - Sea level trends, variability and climate change
 - Sea level related hazards warning systems (storm surge, tsunamis)

- Validation of numerical models and forecasts
 - Comparison with satellite altimetry and other sources of geodetic data
 - Determination of coastal Mean Dynamic Topography to contribute to the unification of different height systems
 - Fulfill the requirements of operational users.
2. Contribute to the development of the European Ocean Observing System (EOOS) with the identification of duplication and/or gaps on the geographical coverage and on the existing sea level data portals in Europe.
 3. Work with other EuroGOOS entities (ROOS, task teams and working groups) towards internal integration e.g. sharing best practices, developing common standards and processes, facilitating product development etc.
 4. Promote the integration of tide gauge networks in ongoing and future European initiatives and identify relevant products required by sea level users.
 5. Act as a link between national agencies of tide gauge operators and data providers, the ROOSs data portals and as the European component in GLOSS.
 6. Promote research and tests of new sea level monitoring technologies.
 7. Promote the recovery of historical data and related studies relevant for Europe including North African countries.
 8. Acknowledge existing data portals and ensure data availability according to the different applications. Assure delivery of tide gauge data to the ROOS data portals.
 9. Promote the co-localization and use of additional instrumentation relevant for sea level applications such as ocean bottom pressure sensors, land movement monitoring stations (GNSS), atmospheric parameters, or tsunami sensors.
 10. Ensure the implementation of new requirements on sea level quality control and data processing.
 11. Provide recommendations (from operators to end-users) on:
 - Data structure, format and dissemination (interoperability of datasets)
 - Quality control procedures
 - Validation procedures
 - Technological solutions
 - Complementary instrumentation (through interaction with other groups, e.g. GNSS).
 12. Collaborate with the satellite altimetry community for a better understanding of altimeter and tide gauge data calibration.
 13. Be a framework for:
 - collation of a single database describing the in-situ monitoring equipment and its status across Europe, ensuring conformance with an internationally agreed data policy and adoption of a common citation.
 - sharing success stories and difficulties including analysis of the funding strategies and importance placed on this work in the different countries
 - providing and exchanging open source tools (data analysis, applications...)
 - promoting the installation and/or inclusion of further stations from Northern Africa
 - promoting scientific synergies for key questions

- promotion of joint proposals through networking (e.g. create synergies between different local consortium INTERREGs...).

4. Composition and Operation

The Task Team is composed of a Chair, a co-Chair(s) and voluntary members representing the sea level community. Chair is supported by a dedicated officer at the EuroGOOS office.

4.1 Chair's nomination process, mandate, responsibilities

Chair must be a representative of a EuroGOOS member organization¹. A Chair can be supported by one or two co-Chair(s). In this case, the mandate and role and responsibilities are the same as for the Chair. The Chair is nominated by the EuroGOOS General Assembly or the EuroGOOS Executive Directors Board, or a broader EuroGOOS community. The Chair is approved by the EuroGOOS Executive Directors Board. The Chair's mandate is for three years, renewable once, upon re-election for another two-year term. A co-Chair will be elected at the kick-off meeting. Call for nominations for co-Chair will be sent out together with the call of nominations for Task Team membership.

Chair and co-Chair(s) are responsible for:

- Oversight of the Task Team;
- Alignment of the Task Team's work with its Terms of Reference (ToR) and with the EuroGOOS strategy;
- Developing the Task Team yearly implementation plan in line with the above;
- Reporting to the EuroGOOS General Assembly and EuroGOOS Executive Directors Board (including both at physical meetings and in writing);
- Regularly reviewing the membership of the Task Team (e.g. once a year);
- Regularly liaise with the EuroGOOS office to follow up on the Task Team's alignment with the other EuroGOOS activities (at least monthly);
- Represent the Task Team at external meetings.

4.2 Members nomination and selection process, mandates, responsibilities

Members are selected based on a call for nominations to the EuroGOOS members. If there is not enough expertise within the EuroGOOS member organizations, Task Team members can be selected through an external call for expression of interest.

Members are selected based on 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 on the group.

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 Task Team activities;

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

- 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 Task Team meetings;
- Follow-up on the developments related to the Task Team’s activity, to ensure the Task Team’s work is timely and topical.

5. Mode of Operation

The Terms of Reference for the Task Team are developed by the EuroGOOS office in liaison with the Chair and submitted first to the EuroGOOS Directors Board and then to the EuroGOOS General Assembly for approval.

Once approved at the EuroGOOS General Assembly, the Task Team Chair and the EuroGOOS office launch a call for member nominations (see item 3.2).

When the membership of the Task Team is established, the Task Team is regarded as operational. In most cases, a physical 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 Task Team activities. To this end, the Task Team implementation plan should be cognisant of the EuroGOOS communication strategy.

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

6. Deliverables

1. Delivery of GNSS-IR data portal hosted at the Permanent Service for Mean Sea Level (PSMSL), funded by EuroSea WP3. Distribute data flow questionnaire and collate responses to support GLOSS data mapping activity
2. Development of the Tide Gauge Inventory, funded by EuroSea WP3
3. Deliver 2nd EuroSea Tide Gauge Workshop, focussed on quality control of tide gauge data.

7. Indicative Timetable (Gantt chart)

	M/Yr	M/Yr	M/Yr
Selection of Chair / co-Chair	7/24		
Annual Meeting	Summer 22	Summer 23	Summer 24
Distribute data flow questionnaire within task team	12/21		
Collate data flow responses for GLOSS data mapping	01/22		

GNSS-IR data portal available	10/21		
2nd EuroSea Tide Gauges Workshop	11/22		
Tide Gauge Inventory available	04/23		