MEETING REPORT

The Global Ocean Observing System

Fourteenth Session of the GOOS Steering Committee (SC-14)

19-21 FEBRUARY 2025
PARIS, FRANCE (HYBRID)

unesco Intergovernmental Oceanographic Commission

WORLD METEOROLOGICAL ORGANIZATION

UN environment United Nations Environment Programme

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Fourteenth Session of the GOOS Steering Committee, SC-14

UNESCO HQ, ROOM IX, Paris, 19-21 February 2025

Event webpage

Final Report

Executive Summary

The Fourteenth Session of the GOOS Steering Committee (SC-14) was held from 19 to 21 February 2025 in Paris, France at the UNESCO Headquarters, with an option for online participation. The goals of the SC-14 was to set GOOS priorities for 2025-2027; draft GOOS SC Work Plan (2025-2027); prioritize activities, outreach and engagement with partners; identify deliverables and resource needs; and elaborate further the approach and proposal to IOC assembly on GOOS Reform. A GOOS cross-panel meeting was organized on 18 February 2025, in advance of the SC-14.

The SC co-chairs identified that the SC, as per its mandate and in consideration of the GOOS 2030 Strategy and the Framework for Ocean Observation, will focus in the next biennium and beyond on steering clear decision making and identification of strategic actions towards a multipurpose and sustained observation system, including transparent organizational and process improvements and changes, to support Member States and the multi-user community of GOOS.

Current resource requirements do not enable GOOS to move at the pace needed and demanded by Member States and society. However, the SC also recognises that there is a need to implement and build clearer and more transparent management, stronger and focused collaboration and well-defined processes, as well as manage change, which is taking place under the GOOS governance reform process.

At SC-14, the SC moved GOOS towards action- and knowledge-driven outputs and outcomes; ensuring GOOS becomes more sustained in its operations with a complementary R&D component; more decisional and more transparent in its deliberations, processes and decisions; more integrated both across its sponsors, and with other communities such as the satellite community and the private sector. The SC will continue to steer GOOS to support a robust system driven by the needs of Member States and other relevant stakeholders that is aligned for strategic effectiveness as well as to support discussions on funding mechanisms for GOOS.

The SC identified the following key areas for the Work Plan 2025-2027:

1. GOOS coordination and management (core activities)
2. Observation system integration, design, development and delivery (GOOS 2030 Strategy, Goal 2)
3. Maintain and strengthen data integration and delivery (new focus area across all 3 goals)

4. System implementation: i) at national and regional level and ii) and applications (GOOS 2030 Strategy, Goal 1)
5. Outreach: projects, partners and communications (GOOS 2030 Strategy, Goals 1 and 3)
6. GOOS Reform (GOOS 2030 Strategy, Goal 3)

The GOOS SC meeting focused on these key issues alongside hearing of ongoing resource and other challenges for the GOOS components and evolving GOOS strategy, outreach and governance to attempt to address some of these challenges. Decisions, recommendations and actions from the meeting are provided in the document and listed in Annex 1: Action Table. List of participants is shown in Annex 2. List of Acronyms can be found in Annex 3.

Report

Note that this is an interactive document with links to recordings, presentations, and background and working documents. Click the blue underlined hyperlinks to reach those resources. The Report covers the discussions and follows the SC-14 Meeting Agenda (here), the decisions, recommendations and/or actions arising from these discussions are noted in the text and compiled in the Actions Table.

Each substantive agenda item below captures a short summary, the main points of discussion and action items of each session.

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Moderators: Balakrishnan Nair and David Legler (GOOS SC Co-Chairs)

1. Opening

Presentations

- Opening and Welcome, Vidar Helgesen, IOC Executive Secretary
- Meeting goals and SC-14 Agenda approval, SC Co-chairs
- GOOS Updates and preparations for IOC Assembly, Joanna Post, GOOS Director
- Outcomes from the GOOS cross-panel meeting, Belén Martín Míguez, OOPC

- Why the ocean matters: WMO observations impact workshop, Albert Fischer, WMO

Additional materials

- Report from GOOS SC-13
- Action table from GOOS SC-13
- Report from GOOS SC inter-sessional meeting December 2024

Summary

Mr Vidar Helgensen, IOC Executive Secretary and UNESCO Assistant Deputy General opened the meeting and highlighted the vital role of GOOS for coordinating the ocean observing system to support Member States and society. GOOS supports ocean management, shaping effective policies, and building capacity. These efforts align with the implementation of the IOC's Medium-term Strategy and the UN Ocean Decade's vision. Mr Helgensen emphasized that ocean observations are essential not only for scientific research but also for broader societal benefits, including addressing extreme weather events, climate impacts, and security concerns. For GOOS, the private sector plays an increasingly critical role. The reform of GOOS governance should enhance efficiency, encourage active participation in shaping the future, and strengthen the development of best practices and standards to provide essential ocean-related information.

Mr David Legler and Mr Balakrishnan Nair, Co-chairs of the GOOS Steering Committee, introduced the goals and agenda of the SC-14. They emphasised the need for clear guidance by GOOS SC to GOOS in support of Member States needs. Based on background papers, the GOOS SC would focus on setting GOOS priorities and drafting a work plan for 2025-2027 to present at the thirty-third meeting of the IOC Assembly (IOC A-33), June 2025. Key goals of the SC-14 included prioritizing activities, outreach, partnerships, governance, deliverables, and resource needs, while refining the proposal for GOOS reform.

The co-chairs emphasised that discussion at SC-14 should be strategic and envision GOOS by 2030 as more authoritative, transparent, integrated, and sustained, with a focus on actionable knowledge, justified priorities, and organizational realignment. Decision-making considerations emphasized fostering measurable progress, identifying priority actions for the 2026-27 work plan, improving funding mechanisms, and refining organizational structures (e.g., revising Terms of Reference) to enhance effectiveness for Member States and diverse users, while cutting unnecessary complexity ("jargondioxide") and boosting critical areas ("oxygenate").

Ms Joanna Post, GOOS Director, provided a brief update on some of the coordination, integration and advocacy work undertaken by the GOOS office and the wider GOOS Management Team. Examples of activities undertaken, in collaboration with OceanOPS, included: engagement with Vendée Globe to enable sensor deployment during the 2024-2025 race, and engagement with the shipping sector to expand the Voluntary Observing Ship (VOS) scheme - work that will continue. On capacity development, a regular activity is the regional DBCP training. She emphasised that the agenda items during the SC-14 would dive into many further topics.

Ms Post also provided updates from the WMO/IOC Joint Collaborative Board (JCB) Meeting (Sep 4–6, 2024). The GOOS SC representative on the board is Jerome Aucan. At the JCB, collaborative Activities were initiated under four key thematic areas: expanding GBON to include further EOVs, strengthening collaboration on data management, coastal resilience, and capacity development.

Ms Post informed the SC of the appointment by the BioEco panel of their new co-chair Audrey Darnoude and thanked, on behalf of the SC, the excellent contributions by the previous co-chair Gabrielle Canonico.

Ms Post outlined the approach to GOOS reform which will pursue a “double diamond” approach, aiming to improve GOOS’ support to Member States by reviewing its components, revising Terms of Reference and MoUs, developing a digital ecosystem and user strategy, and aligning with Decade Challenge 7 and IOC processes. She identified that the workshop on the second day of the SC meeting will help to elaborate what GOOS evolve to (see section 4 below). The proposal for GOOS reform, which was previously discussed with the GOOS SC during virtual sessions in 2024, will be presented to A-33.

Ms Belén Martín Míguez, Scientific Officer for OOPC, presented the outcomes from the GOOS cross-panel meeting which was organized the day before the SC-14 on 18 February 2025. She emphasised the importance of having cross-panel meetings and the focus of many discussions was around connectivity, transparency and impacts. The panels requested GOOS SC to allocate funds to support a cross-panel meeting in 2026, and provide staff support for BioEco, BGC panel and OCG coordination, noting that staff support requires specific skill sets.

Ms Míguez highlighted the key actions agreed at the cross-panel meeting including to consider co-branding of EOV/ECV specification sheets as well as unified messaging about the panels and their role. Relevant plans by expert panels should be reviewed by all panels, such as the biodiversity and carbon plans (see below) as well as that all panels to be involved in the upcoming GCOS ECV rationalization public review. The BioEco and BGC panels have initiated coordination on organic carbon observations to

complement inorganic efforts. Three European projects are currently being undertaken that are relevant to EOVs and regular updates are needed from these projects to all panels. Discussed by the SC was the need for Member States to coordinate with the expert panels at the stage of defining calls for funding, so that they include topics aligned with GOOS mission and vision. Furthermore future GOOS Report Cards should include reporting on the status of the observing network by EOV.

The SC emphasized the need to clearly define operational uses, importance and audience of EOVs. An important next step is the publication of the EOV paper “GOOS Essential Ocean Variables: the backbone of a sustained and evolving global ocean observing system” which, subsequent to the SC-14, has been submitted to Marine Policy journal 3 April 2025. The SC that any updates/changes to EOVs should wait until the publication of the paper and annual review by panels, and should consider the WMO Rolling Review of Requirements (RRR).

Mr Albert Fischer, WMO, presented on the value of ocean observations as highlighted at the 2024 WMO observations impacts workshop and impacts on Numerical Weather Prediction (NWP) to Earth System Prediction. In contrast to the atmosphere, where satellite data contribute 70-80% of numerical weather prediction skills, *in situ* ocean data provide 65% of ocean prediction skill, especially in monthly to seasonal forecasts. The SC discussion highlighted the importance of ocean observations in climate forecasting and early warning systems and AI/Machine Learning (ML) integration in forecasting. Concerns were raised by the SC about the long gap between the 4-yearly workshops. Key topics for the next workshop were discussed including early warning systems for developing countries, integrating satellite technology, and the economic value of weather observations. The SC recognised the need to expand GOOS' role in biological and biogeochemical observations, as well as physical and climate observations, while WMO’s primary focus is on physical and climate meteorological data.

Decisions/Recommendations

GOOS - General

- **Welcomed** the updates on the work undertaken by GOOS
- **Recognised that the actions and activities discussed at the meeting and described in the GOOS work plan require support and can only be undertaken with appropriate resourcing**.

WMO

- **Recommended** that the SC and relevant WMO representatives discuss (in 2026) the topic of the WMO observations impact workshop in preparation for the next workshop.

EXPERT PANELS

- **Welcomed** the updates on the work undertaken by the GOOS expert panels and encouraged them to continue to work across panels.
- **Welcomed** and approved Audrey Darnaude as the new co-chair of the BioEco panel. And note with great thanks the leadership of Karen Evans and Gabrielle Canonico.
- **Supported** the undertaking of a joint panel meeting in 2026, with allocation of budget as needed.
- **Decided** that the specification sheets for relevant EOVs should contain the GCOS logo and invited the GCOS director to invite GCOS to add the GOOS logo to relevant ECVs to ensure co-branding for EOVs that are also ECVs.

2. Observation system design and development

Presentations

- Carbon and GHG Plan, Adrienne Sutton, BGC panel co-chair
- Biodiversity Plan, Clive McMahon, BioEco panel co-chairs
- EOV-led Ocean Indicators, Karina von Schuckmann, OOPC
- RRR and Evolving GBON, Emma Heslop, GOOS Office

Additional materials

Background paper for each of the 4 agenda items:

- Carbon
- Biodiversity
- EOV Ocean Indicators
- RRR/GBON

Summary

Mr Clive McMahon, BioEco panel co-chair, presented the GOOS Biodiversity plan and explained the breadth of the work needed in terms of mobilising and coordinating the

many different communities operating in this space and the need for resources. The discussion clarified that for now it was just a draft that will need to be refined with contributions from other elements of GOOS, in particular the panels, and others. Several initiatives were identified as crucial to engage with when moving this plan forward, such as GEO, MBON, POGO and the DCO for Ocean Data Sharing, as well as OBIS and ODIS. It was noted that the understanding of the partners engagement needed to be broader than just other observation-oriented groups and identifying key partners in a broader group, such as Fugro. Also discussed was that the GOOS Biodiversity Plan should contribute and align with greater coordination of biodiversity activities across the IOC that responds to the IOC Medium Term Strategy, UN mandates, including those where OBIS, GOOS and IOC are specifically identified as contributors such as the Kunming-Montreal Global Biodiversity Framework (GBF) and the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement, as well as other relevant application spaces.

Ms Adrienne Sutton, BGC/IOCCP co-chair presented the Carbon and Greenhouse Gas Plan. In reality this is a suite of activities coordinated by BGC/IOCCP that respond to the mandates from GCOS (2022 GCOS Implementation Plan), the Global Greenhouse Gas initiative (led by WMO) and Integrated Ocean Carbon Research Report IOC-R. These activities fall within three major focal areas: 1) coordination of ocean GHG networks, 2) ongoing core GOOS responsibilities, including definition of best practices and gap analysis and 3) coordination of various ocean carbon network design development activities within the framework of the Carbon exemplar in the Ocean Observing Co-design programme.

Ms Karina von Schuckmann, OOPC panel, presented the work on Ocean Indicators. Ms von Schuckmann stressed the multidisciplinary approach, and the efforts to develop a robust framework, with six pilot indicators already available. A paper is in preparation. Further plans include to fine tune the indicators to make them more relevant for the regions as well as explore integration of indicators into assessment reports such as those led by WOA, IPBES, IPCC and WMO. It was suggested that the group should communicate this work to industry (such as through the Ocean Decade Corporate Data Group) to build awareness, as this work might influence what or how they invest in indicators, in terms of data and information product development.

Ms Emma Heslop, Programme Specialist, GOOS Office, presented recent advances in two areas of collaboration with WMO: the Global Basic Observing Network (GBON) and the Rolling Review of Requirements (RRR). The GBON is designed to meet the requirements for global numerical weather prediction NWP, and includes two ocean variables (SST and SSP) within EEZs. A Task Team is now set up under the Joint Collaborative Board to discuss its expansion beyond EEZs. GOOS (and IOC) could also

be interested in developing a similar concept for applications beyond numerical weather prediction (NWP) and including other variables in non-physical realms. GOOS has been very active leading the RRR team working on an Ocean Pilot developing observational requirements for several oceanic application areas from climate monitoring to marine safety or coastal forecasting. The team has worked very effectively on a first “Statement of Guidance”, providing an assessment of the fitness for purpose of the current observing system and providing recommendations for its improvement. This Statement should be reviewed by GOOS SC Members, as well as ETOOFS.

The Steering Committee stressed the importance of engaging with other programmes and agencies beyond GOOS for the successful accomplishment of the activities above, and recognised this implies additional resources. The active support of SC members will be crucial in advancing these activities, and it is expected that SC members will volunteer for that.

Decisions/Recommendations

BIODIVERSITY PLAN

- Welcomed the proposal to develop a GOOS biodiversity plan by the BioEco panel in collaboration with the other expert panels.
- Recognised the importance of engaging with the IOC (including OBIS), DCO-OO and other Decade offices and programmes, in identification of key partners and requested the GOOS office support the establishment of strategic partnerships.
- Noted that the GOOS biodiversity plan should contribute to and align with greater coordination of biodiversity activities across the IOC that responds to the IOC Medium Term Strategy, UN mandates, including those where OBIS, GOOS and IOC are specifically identified as contributors such as the Kunming-Montreal Global Biodiversity Framework (GBF) and the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement, as well as other relevant application spaces.

GOOS CARBON PLAN

- Welcomed progress on the development of the GOOS Carbon plan and acknowledged its importance in the GOOS response to the GCOS IP and the WMO G3W *(as also requested by the G7FSOI).*
- Encouraged the BGC panel to work with other panels to coordinate organic

carbon observations to complement inorganic carbon efforts.

- Encouraged the BGC and other panels to engage with the Ocean Enterprise Initiative on carbon sensor technology development and operational BGC products and services.

OCEAN INDICATORS

- Recognised the importance and need to continue the work undertaken by members of the OOPC, and other partners, on indicators and to collaborate with partners to identify potential pilot indicators.

RRR/GBON

- Welcomed the lead taken by the GOOS office on the WMO Rolling Review of Requirements (RRR) Ocean Earth System Application Category (ESAC).
- The Co-Chairs will identify 2-3 SC members to support the review (by end Q1 2025) of the Ocean pilot Statement of Guidance developed for the WMO RRR process
- Requested that GOOS communications team coordinate with WMO and IOC colleagues to communicate the outcomes of the work on the RRR.
- Welcomed the outcome from the WMO-IOC Joint Collaborative Board to work together on expanding GBON.
- Decided to hold a virtual meeting (Q3 2025) to identify the opportunities and level of engagement by the SC in the work on GBON expansion and the JCB basic observing networks subgroup.

3. Strengthening data integration and delivery

Presentations

- Strengthening Data Integration and Delivery, Emma Heslop, Lotta Fyrberg, Mathieu Belbeoch, Kevin O'Brien, Pier Luigi Buttigieg, GOOS/IODE

Additional materials

- OCG Cross-Network Data Implementation Strategy
- IODE/GOOS Data Workshop Report, 29 Sep-2 Oct 2024, including executive summary

- Background paper: updates from OCG, OceanOPS, Carbon/IOCCP, and OBIS/BioEco
- Report and Executive Summary, Fifteenth Observations Coordination Group Meeting (OCG-15) May 2024

Summary

Mr Kevin O'Brien, OCG Vice-Chair for Data and Information, presented updates on the work of the Observations Coordination Group (OCG), OceanOPS, data flow coordination under BioEco/ OBIS and IOCCP. He elaborated on the progress made in the Ocean Data Task Team under the OCG, focusing on metadata flows, content, and endpoints. The team also discussed the importance of harmonizing metadata concepts across GOOS networks and the need for adequate resourcing and connectivity to other entities.

Ms Heslop presented on the IOC Data Architecture. In recent years GOOS, IODE and other IOC teams, in dialogue with WMO, have been aligning their developments around broad adoption of open architectures and federated system approach (ODIS, WIS2.0, ERDDAP™), several key IOC data systems are are now ready to be robustly interlinked. The First IODE/GOOS Data Workshop was held at the IOC Project Office for IODE between 30 September and 2 October 2024. It focused on enhancing collaboration between the IODE and GOOS. Post workshop an interim Working Group on the development of the IOC Data Architecture was created and developed the IOC Data Architecture Concept Proposal which will be proposed to IOC A-33.

The SC welcomed the updates and the proposal for the IOC data architecture. The SC discussed the role of GOOS in the broader digital ecosystem. There were clear requirements relevant to GOOS as the Data Architecture work is evolved (highlighted in the recommendation below) as well as the need for better communication about the project's progress and goals as well as demonstration products.

Decisions/Recommendations

- Welcomed the updates on observation coordination by the OCG
- Welcomed the results of the IODE-GOOS Data Workshop and proposal to develop an IOC data architecture jointly with GOOS.
- Asked the IOC data architecture working group that will be set up under the auspices of the IOC to:
    - Articulate what this architecture will enable the community to do that has not been able to do before
    - Develop a more useful diagram to represent the architecture (what it

actually is, how it connects together communities), and what the benefits are, which are not yet articulated clearly enough
    - Define what the architecture will require of GOOS Panels, OCG, GRAs, and other GOOS units. .
    - Maintain open connections to GOOS (including GRAs), as well as the Ocean Decade Data Group, WIS2, IODE data centres to provide feedback/consider functionality.
    - Provide advice on resource needs.
- Noted that demonstration 'products' will help make visible the benefits of ocean observation and related data management/sharing.

4. Working Session on GOOS Reform

Presentations

- Introduction on mandate, Joanna Post, GOOS Office
- Agenda and Working Group Templates, Terry McConnel & Lovisa Bergman
- Setting the scene, Terry McConnel

Additional materials

- Draft governance reform document (which includes links to Smith report, GOOS 2030 Strategy, Terms of reference for GOOS components and a draft proposal for way forward)
- Neville Smith Report, 2021 (GOOS-290) 'Study on Support Provided to Global and Regional Ocean Observing Systems'

Summary

The session aimed to catalyze the discussions and inputs on the future of GOOS, which will be used as feedback stock for GOOS reform. No decisions or recommendations were envisioned at this point of the discussions within the SC.

Ms Post briefly introduced the mandates to this work from the IOC, most recently IOC Decision A-32/4.8.1 and Decision EC-57/4.1, which requested the IOC executive secretary to prepare a proposal for GOOS reform in discussion with GOOS SC, sponsors and Member States (all of whom were represented at the GOOS SC-14). As agreed with the GOOS SC in 2024, evolving GOOS will be in a two-phased approach

("double-diamond"). The first diamond (which will take place in 2025 through a consultancy) will be to discover and define GOOS. The second diamond entails a process to develop and deliver a reformed GOOS (subject to outcomes from the first diamond). The Executive Secretary's proposal will be submitted to the IOC A-33.

This workshop was not intended to provide any decisions, but to discuss the many-faceted challenges facing GOOS and consider the range of options and opportunities for the future. During an initial breakout session, three scenarios were provided to the participants: Business-As-Usual ("Fragmented Observations"), Transformative ("The AI Ocean") and Optimistic ("Ocean Ocean"), defined by different status of data, governance and funding. Further breakout and plenary discussions focused on identifying the most probable scenario and necessary shifts, assessing GOOS's current situation, defining GOOS 2.0 and establishing guardrails to achieve GOOS 2.0. Key uptakes from the breakout discussion are summarized as below:

i. Introduction

The Global Ocean Observing System (GOOS) plays a critical role in coordinating ocean observations funded by nations, steering Essential Ocean Variables (EOVs) (and Essential Climate Variables (ECVs)). As GOOS reforms, it must consider strategically strengthening GOOS's positioning, messaging, and operational efficiency.

ii. Strengthening GOOS's Positioning

Mr Helgesen emphasized the need to present GOOS as a critical infrastructure for society, making its mission clearer and more appealing to funders. The language used must be more accessible to a wider audience to enhance engagement. GOOS should establish itself as an authoritative voice in the ocean community, elevating its credibility and relevance among Member States.

iii. Enhancing GOOS's Communication and Outreach

- GOOS must refine its messaging to emphasize past achievements while ambitiously presenting future goals.
- Financial data and cost-benefit analysis should be incorporated to demonstrate the tangible value of GOOS initiatives.
- The perception of GOOS should be enhanced, either by making it more appealing or by embracing its current positioning while clearly defining its niche and significance.
- Improved marketing strategies are essential, as current efforts are lacking. A focused marketing and communication plan is needed to amplify GOOS's visibility and impact.

iv. Defining Strategic Goals and Priorities

- GOOS has achieved success, but current efforts are insufficient to meet future demands.
- The role of services within GOOS remains unresolved, requiring further discussion.
- Engagement with the private sector should be strategically planned and defined.
- Necessary changes should be documented and prioritized to enhance efficiency and readiness for future expansion.

v. Refining Target Audience and Engagement

- GOOS needs to narrow its target audience by identifying key funders, policymakers, and partners.
- Strengthening relationships with existing and potential partners is crucial, such as with the Decades Foundations Dialogue community.
- Member states should be encouraged to advocate for GOOS within their own governments, UN engagement, and partnerships.
- Philanthropic partnerships should be actively pursued to expand funding opportunities.

vi. Organizational Restructuring and Capacity Building

- The consultancy being contracted should provide guidance on restructuring GOOS to optimize its strengths.
- Efforts should be made to clarify GOOS's value proposition and demonstrate its benefits effectively.
- GOOS is currently understaffed, with an overreliance on volunteerism.
- A skills and expertise gap analysis is required to address deficiencies and ensure effective operations.

vii. Defining GOOS's Boundaries and Operational Scope

- Clearly delineating GOOS's scope and operational limits is necessary.
- Mapping the expertise of GOOS personnel will help optimize resource allocation and responsibilities.
- Communicating the cost-benefit proposition more effectively is key to securing continued support.

viii. Key Success Metric

A major milestone for GOOS will be achieving global accessibility and usability of its ocean data. This would mark a significant success and serve as a strong point of recognition. To build GOOS 2.0, the initiative should embrace the Three Pillars community concept (Scientific/Governmental, Corporate, and Bluetech/Entrepreneurial), incorporating Corporate and Bluetech sectors to strengthen its foundation and growth.

ix. Conclusion

This workshop outlined critical areas for GOOS's development, including strengthening its positioning, refining its messaging, optimizing organizational efficiency, and engaging key stakeholders. By addressing these aspects, GOOS can enhance its impact, increase its visibility, and secure a sustainable future.

5a. Outreach: Projects and partners

Key points

Presentations

- Revised approach and procedures for projects, Emily Smith/Veronica Garcon
- Opportunities to engage with the satellite community, Steve Ramage
- Opportunities identified through private sector engagement, Emma Heslop and Terry Mcconnell
- OBPS Update and work plan, OBPS co-chair

Additional materials

- GOOS project analysis (provided to SC-13)
- Proposal for GOOS projects and partners: approach, suggested priorities
- Rules of Procedure for IODE Programme Components, Programme Activities and Projects (note designations on page 7)
- Dialogues with Industry roadmap (and Ocean Enterprise Initiative plan)
- OBPS work plan
  Proposal for Extending the IOC-OBPS Scope

Summary

On behalf of the GOOS project task team, Ms Emily Smith, NOAA and former member of GOOS core team, presented terms of reference for a revised approach and procedures for GOOS projects. The focus of the group was to identify criteria and procedures to move the approach of GOOS from identifying GOOS 'projects' to having a GOOS 'endorsed projects' approach. The SC agreed to adopt GOOS project endorsement as a practice with some revision to the proposed terms of reference as discussed at the meeting, alongside further discussions on how to actively identify projects closely aligned with GOOS's strategic objectives. The SC identified that the next steps for the task team were to review current GOOS projects, identify the existing projects that could be endorsed, and revise the TOR to address project timelines,

mid-term reviews, sponsorship terminology, and deliverable alignment, with a revised proposal to be shared with the GOOS SC by May 2025.

Mr Steven Ramage, CEO of the Committee on Earth Observation Satellites (CEOS), presented on opportunities for strengthening engagement between GOOS and the satellite community. Mr Ramage highlighted the opportunities in collaboration for enhancing ocean observing capabilities, strengthening climate monitoring and ocean-atmosphere interactions, improving extreme weather and disaster forecasting, and supporting the ocean economy and maritime operations. Mr Ramage discussed the work of the CEOS Virtual Constellation (VC) for Coastal Observations, Applications, Services, and Tools (COAST), which aims to bring together different data sources and end users. During the discussion, the SC agreed the importance of strengthening engagement with the satellite community and it was suggested that GOOS should interact with CEOS via COAST as a first step. Meanwhile, Marine Heatwaves was identified as a possible early area for specific interaction between GOOS and CEOS. In addition, GOOS BioEco Panel expressed strong interest in initiating the discussion regarding potential bi-directional exchange between the community focused on BioEco observations and satellite missions and products.

Ms Heslop and Mr Terry McConnell, DCO-Ocean Observations lead, presented on the opportunities for private sector engagement in ocean observations, structured around three pillars - Scientific/Governmental, Corporate, and Bluetech/Entrepreneurial - to enhance ocean data collection through public-private partnerships. The SC discussions centred around the work of the Ocean Enterprise Initiative which emerged from the Dialogues with Industry sessions. Some future focus areas could be around cost-effective technologies, carbon sensors, and sensor manufacturing failures/weak points. There is a potential for GOOS to strengthen its strategic engagement here e.g. through networks and essential ocean variables, best practices and data flow to promote collaboration. The SC proposed forming a task team to identify priority areas for engagement and produce a GOOS strategy for engagement with the private sector. Meanwhile, the GOOS community (SC, GMT and GOOS components) are strongly encouraged to use the Ocean Decade as a tool to deliver individual tasks and activities. Mr Terry McConnell offered to be a focal point for any such interaction.

Ms Patricia Martin Cabrera, OBPS project manager, presented the OBPS steering committee proposal for the evolution of the Ocean Best Practices System (OBPS) from a GOOS project to a system under a broader IOC architecture which would bring greater resource support and stability. The SC approved the proposed work plan and budget, and requested regular engagement and updates from the OBPS leadership to GOOS. The need for a clear definition of best practices, the importance of community engagement was also discussed as well as the need for a comprehensive messaging

guide to promote the OBPS and raise its profile. The SC suggested that the OBPS develop a feedback mechanism to track the use of best practices and the creation of new ones and the need for a biennial strategic plan.

Decisions/Recommendations

PROJECTS AND PROCEDURES

- Recommended the task team on this topic to revise the proposed approach to GOOS projects based on discussions and provide the revised proposal to the GOOS SC by the May 2025 for review

SATELLITE COMMUNITY ENGAGEMENT

- Decided to pursue opportunities to better coordinate with the satellite community
- Recognised the importance of collaboration with the satellite community through CEOS COAST including opportunities for:
    - Focussing on Early Warning Systems such as marine heatwave as a possible early area for specific interaction between GOOS and CEOS.
    - Bi-directional exchange on ground truthing satellite missions and constellations, data integration for operational oceanographic needs.

PRIVATE SECTOR ENGAGEMENT OPPORTUNITIES

- Decided to establish a task team supported by the IOC secretariat (Emma Heslop) with the following members: Patrick Gorringe, Pooja Mahapatra and Bala Nair, as well as a representative from the Ocean Decade corporate data group and the Ocean Enterprise Initiative, to prepare a GOOS strategy for engagement with the private sector (by end September 2025) for presentation to the SC. This will be to look across the different roles that industry plays in the observing system, as a supplier of data, instrumentation, a partner in networks, new private networks, a user of data for service delivery and an end user, and look at how collaboration or exchange could be enhanced to support the global ocean observing system, develop a more overarching plan and prioritise the work.
- The GOOS community are strongly encouraged to use the Ocean Decade as a tool to deliver individual tasks and activities (Contact DCO-OO, Terry McConnell).

- The Ocean Enterprise initiative was encouraged to continue its work

OCEAN BEST PRACTICES SYSTEM

- The SC, taking into consideration the OBPS mandate to work across the value chain and the relevance of OBPS to all IOC programmes, supported the (OBPS/GOOS/IODE) initiative to reshape the IODE-GOOS OBPS Project to become a cross IOC Ocean Best Practices System, with a broader funding based encompassing all IOC sections. This proposal will be put forward at the IOC Assembly in June 2025.
- The GOOS endorsement best practices were considered valuable and this process should be extended to other IOC Sections, whilst maintaining the quality of the practices that are considered as 'endorsed' through a transparent and rigorous process

5b. Outreach: Communications

Presentations

- Communications toolkit (Laura Stukonyte with Research for Purpose)
- GOOS Report Card 2025 (Laura Stukonyte and Emanuela Rusciano)

Additional materials:

- Social listening report on GOOS
- Outline - GOOS Messaging Guide
- First draft - New GOOS Brand Guidelines
- Planning for the GOOS Ocean Observing Report Card 2025
- Link to previous issues of the Report Card: https://www.ocean-ops.org/reportcard/

Summary

Ms Laura Stukonyte, Communications lead, and Mr Vinicius Lindoso, Research for Purpose Consultancy, introduced the GOOS brand update and an overview of the new communications toolkit, all to be released in May 2025. This work has been guided by interviews with key stakeholders and the results of a social listening experiment, the results of which were also presented to the SC. The goal of the communications toolkit is to enhance not just the visibility of GOOS but provide tools for the community to advocate for GOOS. The SC welcomed the work and the importance of a unified messaging guide. The SC discussion touched on how to improve communication on GOOS and move away from technical wording and address the need to adapt

generational, national and regional differences to reach the users. The SC suggested using existing IOC programs, Ocean Decade programs and existing ocean communities, including ocean literacy programs, to highlight the contributions from GOOS. The SC discussed a need for a full communication strategy in the future, but mentioned that in the light of the ongoing GOOS reform a comprehensive communication strategy should wait.

Ms Laura Stukonyte and Ms Emanuela Rusciano, OceanOPS, presented the approach and planning for the GOOS Report Card 2025. The approach includes making the report card more interactive and engaging, such as by evolving web content. The SC discussed potential topics to be included in the report card and tasked itself to contribute with input in regards to the accepted topic contributions from Member States. The SC also asked to reintroduce a UN-approved map or list of countries in the Report Card to show Member States' contributions to the observing system.

Decisions/Recommendations

- Welcomed the ongoing work on the communications toolkit and the new GOOS brand guidelines.
- Welcomed the approach for the GOOS Report Card 2025 and identified a number of themes that could be considered noting a need to limit this number due to space constraints (Early warnings and El Niño; Matias Sifon and BMKG offered to be contact points); Ocean indicators; Ongoing investments in ocean infrastructure; AniBOS development in real time data; Growth of local and regional observing systems).
- Encouraged its members to:
    - provide any further feedback on the discussed questions and themes for the card by the end of February 2025
    - identify contact points for suggested topics
    - Participate in the content review of the report card (review planned for June-July).
- Noted that the report card should show the Member States contributing to GOOS and the number of networks supported by each Member State.

6a. System implementation at national and regional level

Presentations

- National Focal Points, Jing Li
- GOOS Rregional Alliances, GRA Chair and Vice Chair

Additional materials

- Terms of reference NFP
- Terms of reference GRA Council TOR
- Background paper on GRA: update on actions and recent meetings
- Background paper on NFP: including NFP Survey preliminary result analysis

Summary

Ms Jing Li, Programme Specialist, GOOS office, introduced recent advances in engaging with GOOS National Focal Points (NFPs) on the organization of the 2nd NFP online Forum, launching of the NFP survey, both in 2024, and a new call for nominations and update of NFPs in 2025 as well as progress in outreach and communication. Ms Li emphasized the need for a clear strategy and implementation guidelines for NFPs as well as ensuring appropriate persons were identified as NFPs. The opportunity, as is being undertaken in some countries, of seeing the NFP role as one that extends to a national coordination committee was also noted.

Mr Carl Gouldman, GRA Council Chair, presented updates on the work with GOOS Regional Alliances (GRAs). Advances have been made including in connecting with NFPs. However, there remain large differences between levels of advancement and support in different regions and challenges in connection, transparency, awareness of data needs and delivery, and reporting between different GRAs and between GRAs and GOOS.

The SC discussed the need to strengthen connections between NPFs, GRAs and other GOOS components, with a clearer framework to define their interactions. There is a lack of understanding regarding processes, and a flow diagram could help visualize these connections. The SC must move towards defining the collective roles of GRAs/NFPs and potential focal areas to coordinate on and collaborate with GOOS. A GOOS community in-person meeting would help enhance the connections among different components of GOOS. It would help strengthen and define connections between NFPs, GRAs and other GOOS components. However, the SC noted the challenges and feasibility of convening 100-200 people to implement such a meeting, which requires adequate resources.

The SC discussed how to support NFPs. This included developing a proposal for selecting NFPs more effectively. Strengthening NFP's connection to other focal points (e.g. WMO NFPs) was also encouraged. Additionally, NFP roles should be well-defined

and realistic. The inclusion of the SC co-chairs in the NFP Forum could enhance engagement. NFP representation remains a challenge, particularly for SIDS, where limited personnel make active participation difficult. The SC suggested IOC Focal Points could take on the NFP responsibility in SIDS. The SC decided to set up a task team to develop NFP implementation guidelines, particularly aimed at developing countries.

The SC identified the need to establish a mechanism to optimise and facilitate NFPs and GRAs engagement with, and reporting to, GOOS. The national and regional priorities are not sufficiently understood, due to lack of reporting mechanisms and channels for identification of gaps and needs. Meanwhile, a dedicated section on the GOOS website could provide essential NFP resources and improve accessibility.

GRAs have a key role in supporting new technology and capacity development, but there is no existing mechanism for GRAs to contribute to emerging observation networks of GOOS. Establishing a dialogue between GRAs and OCG, and GOOS UN Ocean Decade Programmes, could bridge this gap. Increasing GOOS SC and OCG's presence in GRA meetings and improving GRA reporting mechanisms would also enhance connections. Defining the collective roles of GRAs within the global ocean observing system, along with a strategic plan and focal areas would improve GRAs' interaction and contribution to GOOS.

Data accessibility remains a challenge, particularly for developing countries where ocean observation infrastructure is limited. Some NFPs are inactive because their countries lack observation capacity. GRAs could help bridge this gap by connecting developed countries' existing networks with developing regions. Encouraging low-cost observation instruments could enable wider participation in GOOS, and GRAs could facilitate open-access networks to accelerate Early Warning Systems. Data accessibility can be improved through connecting GRA data to NODCs. The SC suggested that the GRAs could work around a few clearly identified application areas to enhance cross-GRA support to each other. Defining the key areas for observing applications—such as heat waves, sea level rise and Early Warning for All —will help structure collaborations. Lessons from pilot projects should be documented and used to shape future efforts.

Strengthening communication and engagement is also a priority. The SC identified that SC regional experts could connect more closely with GRAs/NFPs. Leveraging end-use cases through Benefit of Ocean Observing Catalogue (BOOC) and being linked to Ocean Best Practices System (OBPS) could enhance visibility and maximize the impacts. Events organized/coordinated by GRAs are encouraged to be included in OceanExpert.

Decisions/Recommendations

NFP / GRA

- Decided to establish a task team with the following SC members: Matias Sifon, Alvaro Scardilli and Caroline Cusack, as well as Champika Gallage from the WMO, supported by the secretariat (Jing Li), to develop a proposal for NFP implementation guidelines (by 30 Sep 2025).
- Encouraged the GRA council to propose some application areas (and leverage these to their alliance members and wider GOOS components) to support data access and delivery to GOOS at regional and national level as well as report increases in data flow and national-level engagement to GOOS.
- Recommended a virtual meeting (in 2025) between members of the GRA council and the GOOS co-design and Coast Predict programmes and then a subsequent GRA council call to discuss opportunities for strengthened engagement and data sharing.
- Recognised that, long-term, a mechanism to optimise and facilitate NFP and GRA engagement with, and reporting to, GOOS needs to be established.
- Requested the GOOS SC Regional Experts to connect with GRAs and NFPs in their regions to optimise and enhance engagement with other GOOS components by these GRAs and NFPs as much as possible.
- Recommended that GRA representatives upload their meetings onto Ocean Expert, and request reports after GRA meetings
- Encourage participation of GOOS SC regional experts and GRA Council in the GRA annual/periodic meetings.
- Recommended that GOOS encourage engagement between relevant GOOS and IOC focal points, including IODE representatives
- Recommended to hold a stakeholder meeting including with GOOS SC, expert panels, GRA, NFP, other IOC focal points and other relevant stakeholders.

6b. System implementation and applications

Presentations

- Update on ETOOFs and wider links- including proposed TOR and National operational Readiness Levels, Enrique Alvarez, ETOOFS co-chair

- Results from GOOS Decade Programmes that can support GOOS evolvement, Ann-Christine Zinkann and Emma Heslop, Ocean Observing Co-Design and Coast Predict

Additional materials

- ETOOFS Revised ToR and project plan
- Ocean Decade Challenge 7 white paper
- Background paper on GOOS Ocean Decade Programmes

Summary

Mr Enrique Alvarez, ETOOFS co-chair, presented updates from ETOOFS including suggested new terms of reference and a proposal for measuring operational readiness levels in countries. He also spoke about the wider links of ETOOFS to the UN Ocean Decade and OceanPrediction community.

The SC welcomed the work of ETOOFS. The SC noted that the TOR need some further consideration so as to better define ETOOFS mandates and priorities, including requirements to provide advice back to GOOS. Furthermore, it was noted that while a functional connection between WMO INFCOM and ETOOFS was established in 2019, there has been little engagement. WMO identified that they are now ready to engage, review, and support the preparation of a second edition of the ETOOFS Guide, aiming to facilitate operational uptake. The WMO also identified the need to strengthen the partnership between INFCOM and GOOS, integrating ETOOFS into WMO Information System (WIS) and improving verification processes and collaboration with the coupled prediction community. The SC decided to set up a task team with the ETOOFS co-chairs to agree a revised ToR for ETOOFS to further define its mandates, priorities and its membership.

The SC identified that while clear alignment exists between OceanPredict DCC and OceanPrediction (led by Mercator), the distinction between Mercator and ETOOFS and the relationship between GOOS, WMO and OceanPredict (and Mercator's work) remains unclear, particularly regarding the necessity for ETOOFS to engage with the broader ocean forecasting community and working as a team. There were also questions on how ETOOFS could support regional forecasting efforts. Possible connections may be established through GRAs (e.g., EuroGOOS) and GOOS Ocean Decade programmes.

The SC were concerned that despite the growing need to define operational readiness levels (ORL) for observing systems in coordination with WMO and GOOS, it was suggested that ORL needs to be further tested in regions before being implemented

globally. Mr Alvarez noted that ETOOFS ORL have already been tested, with initial shortcomings leading to refinements through five teams. He mentioned that a certification system for ORL is now available, raising the possibility of GOOS adopting a similar certification process for observing systems networks, possibly through OCG.

Ms Heslop and Ms Cristina Mino, Co-Design Programme Support Officer, presented on the landscape, implementation progress and future plans of the GOOS UN Ocean Decade Programmes, in particular the Ocean Observing Co-Design and CoastPredct programmes.

The Co-Design programme is implemented through six exemplars maturing at different speeds. The programme is seeking in its next steps to enhance governance, fit-to-need support to exemplar implementation, improve visibility and communication, identify funding opportunities from industry, foundations and philanthropy and submit proposals, and develop communities through co-design meetings and best practices.

The CoastPredict programme aims to create globally replicable solutions, standards, and applications that enhance coastal resilience for both natural and built environments. Three pilot proposals are being prepared for the Adaptation Fund, in close collaboration with IOCARIBE GOOS, IOC-WESTPAC and PI-GOOS. Two new working groups on MetOcean and Best Practices for user engagement will also be established.

The SC discussed how connection could be increased between the GOOS UN Decade programmes and GRAs and NFPs in pilot areas. A number of options were discussed to help facilitate this engagement such as a session at a future GRA Council meeting to identify engagement options with the SC and report out questions to the SC. The Decade programmes could be interviewed to identify potential engagement areas and GOOS could facilitate discussions and connections ad-hoc.

Other application areas were explored and Mr Legler raised a question at the end of this session based on discussions during the SC meeting in regards to whether to recognize ‘Early Warning for All’ as an application area of GOOS.

The SC discussed that ‘Early Warning’ is already embedded in the work of GOOS throughout the value chain, e.g., dada assimilation, validation, criteria setting, and service provision. Thus, it might not be necessary to create a new structure or initiative in GOOS on this. However the SC decided that a task team should be established to develop a proposal on how to raise the profile of EW4ALL and look at entry/collaboration points for GOOS.

Decisions/Recommendations

ETOOFS

- Decided to establish a task team with the following members: ETOOFS co-chairs, Patrick Heimbach, David Legler, Caroline Cusack, Vero Garcon, Jerome Aucan, WMO representative, supported by the secretariat (Jing Li), to identify the role of ETOOFS vis a vis GOOS and to agree a revised ToR for ETOOFS and its membership (by end May 2025). The task team will consider, inter alia, how to:
    - Advice on OO needs for upstream and downstream
    - Optimise OO system design
    - Define and certify Operational readiness of observation Systems
    - Define and certify standard services, e.g. in GBON
- Recommended to include representatives from National operational Oceanographic Centers and modelling communities to participate in ETOOFS (e.g. WCRP ESMO).

GOOS DECADE PROGRAMMES

- Welcomed the progress that the Ocean Observing Co-Design and CoastPredict programs have accomplished over the past year.
- Invited the secretariat to organise a virtual update session (in Q3/Q4 2025) to communicate and discuss the key advances in the GOOS Decade Programs and opportunities to weave learning into GOOS.
- Encouraged the programs to seek collaborations with NFPs and GRAs.

Additional considerations - EARLY WARNING FOR ALL

- Decided to establish a task team, led by Dwikorita Karnawarti with the following GOOS SC members: Jerome Aucan, Matias Sifon, representatives from IOC and from WMO, supported by the secretariat (name tbc) to develop a proposal (by 31 December 2025) for how to raise the profile of EW4ALL and look at entry/collaboration points for GOOS (recognising that involving GOOS in pillar 2 of EW4ALL was identified by the WMO/IOC Joint Collaborative Board as an important collaboration need).

7. Looking forward

Presentations

- SC-14 draft decisions

Additional material

- Draft outline GOOS Work Plan
  (Part 1 Introduction and core coordination work of GOOS; Part 2 Observation system design and development; Part 3 Strengthening data integration and delivery; Part 4 System implementation; Part 5 Outreach and Partners Part 6 Reform)

Summary

Ms Post presented an outline for the GOOS Steering Committee's work plan and the proposal for GOOS reform will be finalised in collaboration with the SC and submitted to the IOC Assembly by end April for the IOC-33 session in June 2025. She presented an overview of the decisions, now adopted in this document which were agreed in the room by the SC. The work plan will focus on deliverables and actions based on the topics, decisions and recommendations at SC-14. The SC noted that the resources needed and prioritization within the work plan should also be considered.

Mr Fischer highlighted the invitation to the GOOS SC co-chairs by the WMO Commission for Observation, Infrastructure and Information Systems (INFCOM) to join the INFCOM management group as ex-officio member (Decision 5 (INFCOM-3)).

Ms Fanny Douvere, Senior Project Officer at IOC/MPR, introduced the IOC Sustainable Ocean Planning and Management Strategy (SOPM). This is an IOC-wide strategy being developed to serve as a guiding and harmonizing framework for IOC-programmes and sub-regional commissions to more adequately support decision-making for the management of the ocean across IOC Member States. The IOC-SOPM Strategy and Implementation plan 2025-2027 is developed in collaboration with the SOPM Working Group and will be presented for adoption at the 33rd Session of the IOC Assembly in June 2025. Consultations are being held with the IOC GOOS programme team in view of defining practical arrangements for collaboration to implement the IOC-SOPM Strategy and Implementation Plan once adopted. During the discussion session, Ms Douvere further explained that, instead of overloading GOOS with additional work, the idea of the strategy is aiming to leverage existing data and observations to create knowledge products that support sustainable ocean planning and management for Member States, enhance data accessibility, and align it with practitioners' understanding, while GOOS team will contribute to brainstorming further developments.

Ms Audrey Darnaude, co-chair of BioEco panel is representing GOOS with this initiative.

The SC agreed that the SC meetings will include a virtual quarterly meeting (next one in April) and an in-person meeting in Q1 2026, with a joint-panel meeting. A proposal for a GOOS community meeting will be considered for 2027, if resources are available.

Decisions/Recommendations

- Noted the planning to finalise the documentation for the IOC Assembly-33 (June 2025) by the GOOS secretariat (GOOS SC work plan 2025-2027 and proposal for GOOS reform). It noted that a draft of the work plan will be coordinated with executive members of GOOS and shared with the GOOS SC by end March 2025 for review and finalisation by end April 2025.
- Welcomed the decision by the WMO INFCOM in 2024 (INFCOM-3 Decision 5) including a GOOS SC co-chair as a member of the management group.
- Noted that it will hold 4 meetings per year (1 every quarter): 1 in-person meeting in Q1 and 3 virtual meetings. The next meeting will be in April 2025.
- Noted the work of the IOC on Sustainable Ocean Planning and Management (SOPM) and that Audrey Darnaude and Joanna Post were the GOOS representatives in the SOPM Working Group.

Annex 1: Actions

The actions below were identified by the SC and will be elaborated further in the GOOS SC work plan 2025-2027

The SC recognised that the actions and activities discussed at the meeting and described in the action table below and further elaborated in the GOOS work plan require support and can only be undertaken with appropriate resourcing.

ACTIONS	Due by	Key Participants	Focal point	Report back to GOOS SC in
Session 1				
GOOS SC and relevant WMO representatives discuss (in 2026) the topic of the WMO observations impact workshop in preparation for the next workshop	At next in-person SC meeting in 2026	All	J Post	Q1 2026 at next in-person meeting
Specification sheets for relevant EOVs should contain the GCOS logo and invited the GCOS director to invite GCOS to add the GOOS logo to relevant ECVs to ensure co-branding for EOVs that are also ECVs.	asap	Expert panels	Belen Belén Martín Míguez	NA
Hold a joint expert panel meeting in 2026	End 2026	Expert panels and other experts	Belen Belén Martín Míguez	2026
Session 2				
BIODIVERSITY PLAN				
Finalise GOOS biodiversity plan, in collaboration with OBIS, Decade and other relevant partners	2025	All panels and other stakeholders	Bioeco panel	tbd
Ensure plan contributes to and aligns with greater coordination of biodiversity activities across the IOC		All panels, IOC, and other stakeholders	Bioeco panel	
GOOS CARBON PLAN				
Finalise GOOS carbon plan	tbc	All panels and other stakeholders	BGC Panel	tbd

ACTIONS	Due by	Key Participants	Focal point	Report back to GOOS SC in
BGC and other panels to engage with the Ocean Enterprise Initiative on carbon sensor technology development and operational BGC products and services	ongoing	All panels, OEI, and other stakeholders	BGC Panel	tbd
OCEAN INDICATORS				
Develop ocean indicators proposal and suggested pilot indicators in collaboration with relevant partners	2026-2027	All panels and other stakeholders	OOPC Panel	tbd
RRR/GBON				
GOOS to lead the WMO Rolling Review of Requirements (RRR) Ocean Earth System Application Category (ESAC).	ongoing	WMO RRR Ocean ESAC team	E Heslop	NA
The Co-Chairs will identify 2-3 SC members to support the review (by end Q1 2025) of the Ocean pilot Statement of Guidance developed for the WMO RRR process	31-Mar-25	tbd by SC co-chairs	E Heslop	Q3 2025
GOOS communications team coordinate with WMO and IOC colleagues to communicate the outcomes of the work on the RRR.	2025		L Stukonyte	NA
Hold a virtual meeting (Q3 2025) to identify the opportunities and level of engagement by the SC in the work on GBON expansion and the JCB basic observing networks subgroup.	31-May-25	GOOS SC	E Heslop	Q3 2025
Session 3				
Co-develop the IOC data architecture	2025-2026	IOC secretariat and partners	E Heslop	
Support production of demonstration products that will help make visible the benefits of ocean observation and related data management/sharing	2025-2026	IOC secretariat and partners	E Heslop	

ACTIONS	Due by	Key Participants	Focal point	Report back to GOOS SC in
Session 4				
Undertake GOOS Reform - first diamond	2025	Led by IOC ES with GOOS SC, sponsors and Member States	J Post	Q1 2026
Undertake GOOS Reform - second diamond	2026-2027		J Post	tbc
Session 5a - Projects and Partners				
Task team on this topic to revise the proposed approach to GOOS projects based on discussions and provide the revised **proposal** to the GOOS SC by the end of May 2025 for review.	31-May-25	Pooja Mahapatra, Matias Sifon, Lebogang Mashile, Veronique Garçon	J Post / E Smith	Q3 2025
GOOS too build coordination with satellite community through CEOS-COAST	2025-2026	CEOS-COAST	tbc	tbc
Establish a **task team** supported by the IOC secretariat with the following members: Patrick Gorringe, Pooja Mahapatra and Bala Nair, as well as a representative from the Ocean Decade corporate data group and the Ocean Enterprise Initiative, to prepare a GOOS **strategy** for engagement with the private sector (by end September 2025) for presentation to the SC.	30-Sep-25	Patrick Gorringe, Pooja Mahapatra and Bala Nair, representative from Ocean Decade Corporate Data Group and OEI	E Heslop / T McConnell	Q1 2026
Continue GOOS engagement with the Ocean Enterprise Initiative	ongoing	E Heslop, P Gorringe	E Heslop	
Support the evolvement of OBPS from a project to an IOC-wide system (dependent on A-33 approval) and continue to support its evolvement	A-33 and ongoing	OBPS and IOC	E Heslop	
Session 5b. Outreach: Communications				

ACTIONS	Due by	Key Participants	Focal point	Report back to GOOS SC in
Report card: feedback on the discussed questions and themes for the card by the end of February 2025	28-Feb-25	All	L Stukonyte	
Report card: Identify a contact point for suggested topics	28-Feb-25	All	L Stukonyte	
Report card content review team (review planned for June-July).	30-May-25	L Stukonyte will reach out to GOOS SC members accordingly	L Stukonyte	
Session 6a. System implementation at national and regional level				
NFP / GRA				
Establish a **task team** with the following SC members: Matias Sifon, Alvaro Scardilli and Caroline Cusack, as well as Champika Gallage from the WMO, supported by the secretariat (Jing Li), to develop a **proposal** for NFP implementation guidelines (by 30 Sep 2025).	30-Sep-25	Matias Sifon, Alvaro Scardilli, Caroline Cusack, Champika Gallage (WMO)	Jing Li	Q4 2025 / Q1 2026
Encouraged the GRA council to propose some application areas (and leverage these to their alliance members and wider GOOS components) to support data access and delivery to GOOS at regional and national level as well as report increases in data flow and national-level engagement to GOOS.	30-Sep-25	GRA Council Chair (Carl Gouldman) and Vice Chair (Alvaro Scardilli)	Jing Li	Q1 2026
Virtual meeting (in 2025) between members of the GRA council and the GOOS co-design and Coast Predict programmes and then a subsequent GRA council call to discuss opportunities for strengthened engagement and data sharing.	31-Dec-25	GRA Council and GOOS Decade Programmes	Jing Li	Q4 2025 / Q1 2026
Consider how to establish a mechanism to optimise and facilitate NFP and GRA engagement with, and reporting to, GOOS	ongoing	Considered as part of GOOS reform		Q1 2026

ACTIONS	Due by	Key Participants	Focal point	Report back to GOOS SC in
GOOS SC Regional Experts to connect with GRAs and NFPs in their regions to optimise and enhance engagement with other GOOS components by these GRAs and NFPs as much as possible.	ongoing	Regional Experts	GOOS regional focal points	Q1 2026
GRA meetings should be uploaded to Ocean Expert	ongoing	GOOS SC Regional Representatives, GRA Council	GOOS regional focal points / Jing Li	
Encourage participation of GOOS SC regional experts and GRA Council in the GRA annual/periodic meetings.	ongoing	GOOS SC Regional Representatives, GRA Council	GOOS regional focal points / Jing Li	
Encourage engagement between GOOS/IOC focal points	2027	All	All	To be further discussed
Future GOOS conference including with GRA, NFP, GOOS SC, panels and other IOC focal points and relevant stakeholders	tbc	All	All	To be further discussed
Session 6b. System implementation and applications				
Establish a **task team** with the following members: ETOOFS co-chairs, Patrick Heimbach, David Legler, Caroline Cusack, Vero Garcon, Jerome Aucan, WMO representative, supported by the secretariat (Jing Li), to identify the role of ETOOFS vis a vis GOOS and to agree a **revised ToR** for ETOOFS and its membership (by end May 2025). The task team will consider, inter alia, how to: • Advice on OO needs for upstream and downstream • Optimise OO system design • Define and certify Operational readiness of observation Systems	30-May-25	ETOOFS Co-chairs (Pierre Bahurel and Enrique Alvarez), Patrick H, David Legler, Caroline Cusack, Vero Garcon, Jerome Aucan(, Albert Fischer (WMO, tbc)	Jing Li	Q3 2025

ACTIONS	Due by	Key Participants	Focal point	Report back to GOOS SC in
• Define and certify standard services, e.g. in GBON Recommended to include representatives from National operational Oceanographic Centers and modelling communities to participate in ETOOFS (e.g. WCRP ESMO)				
GOOS DECADE PROGRAMMES				
Organise a virtual update session (in Q3/Q4 2025) to communicate and discuss the key advances in the GOOS Decade Programs and opportunities to weave learning into GOOS.	31-Dec-25	All relevant	E Heslop / Ann Zinkan	Q1 2026
Encourage GOOS Programmes and Projects to engage with GRAs and NFPs	ongoing	All relevant	GMT	
EARLY WARNING FOR ALL				
Establish **a task team**, led by Dwikorita Karnawarti with the following GOOS SC members: Jerome Aucan, Matias Sifon, representatives from IOC and from WMO, supported by the secretariat (name tbc) to **develop a proposal** (by 31 December 2025) for how to raise the profile of EW4ALL and look at entry/collaboration points for GOOS (recognising that involving GOOS in pillar 2 of EW4ALL was identified by the WMO/IOC Joint Collaborative Board as an important collaboration need).	31-Dec-25	Dwikorita Karnawarti, Jerome Aucan Matias Sifon, WMO, IOC (others tbd)	J Post / E Heslop	Q1 2026
Session 7				
Finalise the documentation for the IOC Assembly-33 (June 2025) by the GOOS secretariat (GOOS SC workplan 2025-2027 and proposal for GOOS reform).	20-Apr-25	All	J Post	

ACTIONS	Due by	Key Participants	Focal point	Report back to GOOS SC in
GOOS SC co-chair to engage as ex officio member of the INFCOM Management Group.	INFCOM-4 in March 2026 (virtual)	GOOS SC co-chairs	J Post	
GOOS SC hold 4 meetings per year (1 every quarter): 1 in-person meeting in Q1 and 3 virtual meetings. The next meeting will be in April 2025.	tbc (via doodle)	All	J Post / W. Kmiec	doodle to be sent out
Support the work of the IOC on Sustainable Ocean Planning and Management (SOPM) Working Group	ongoing	Audrey Darnaude and Joanna Post	J Post	

Annex 2: List of Participants

Last Name	First name	Role	Email	Participation
LEGLER	David	SC co-chair	david.legler@noaa.gov	In person
NAIR	Balakrishnan	SC co-chair, regional IV	bala@incois.gov.in	In person
KARNAWATI	Dwikorita	SC member	dwiko@bmkg.go.id	Virtual
HEIMBACH	Patrick	SC member	heimbach@oden.utexas.edu	In person
O'CALLAGHAN	Joanne (Joe)	SC member	joe@oceanlyscience.com	Virtual
CUSACK	Caroline	SC member	caroline.cusack@marine.ie	In person
SHAIMARDANOV	Vladislav	SC member, regional II	vlad@meteo.ru	Virtual
SIFON	Matias	SC member, regional III	msifona@gmail.com	In person
MAKGATI	Lebogang Neelo	SC member	lebogangmashile548@gmail.com	In person
GORRINGE	Patrick	SC member, regional I	Patrick.Gorringe@smhi.se	In person
WANG	Yi	SC member	wangyi_victory@qq.com	In person
GOULDMAN	Carl	SC ex officio, GRA chair	carl.gouldman@noaa.gov	Virtual
SCARDILLI	Alvaro	SC ex officio, GRA vice chair	asscardilli@hidro.gov.ar	In person
SPEICH	Sabrina	SC ex officio, OOPC co-chair	sabrina.speich@lmd.ens.fr	In person
SUTTON	Adrienne	SC ex officio, BGC co-Chair	adrienne.sutton@noaa.gov	Virtual
GARCON	Véronique	SC ex officio, BGC co-Chair	garcon@ipgp.fr	In person
MCMAHON	Clive	SC ex officio, BioEco co-chair	clive.mcmahon@utas.edu.au	In person
DANAUDE	Audrey	SC ex officio, BioEco co-chair	audrey.darnaude@cnrs.fr	In person
ALVAREZ	Enrique	SC ex officio, ETOOFS co-chair	ealvarez@mercator-ocean.fr	In person

Last Name	First name	Role	Email	Participation
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PISSIERSSENS	Peter	IODE	p.pissierssens@unesco.org	In person
HELGESEN	Vidar	Sponsor rep main	v.helgesen@unesco.org	In person
POPOVICI	Anda	Sponsor rep	Anda.Popovici@council.science	In person
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Annex 3: List of Acronyms

BBNJ: Biodiversity Beyond National Jurisdiction

BGC: Biogeochemistry Expert Panel

BioEco Panel: Biology and Ecosystems Expert Panel

BOOC: Benefit of Ocean Observing Catalogue

CEOS: Committee on Earth Observation Satellites

COAST: Coastal Observations, Applications, Services, and Tools

DBCP: Data Buoy Cooperation Panel

DCC: Decade Collaborative Center

DCO: Decade Collaborative Office

DCO-OO: Decade Collaborative Office for Ocean Observing

ECV: Essential Climate Variable

EEZ: Exclusive Economic Zone

EOV: Essential Ocean Variable

ETOOFS: Expert Team on Operational Ocean Forecast Systems

G7 FSOI: G7 Future of the Seas and Oceans Initiative

GBF: Kunming-Montreal Global Biodiversity Framework

GBON: Global Basic Observing Network

GCOS: Global Climate Observing System

GHG: Greenhouse Gas

GMT: GOOS Management Team

GOOS: Global Ocean Observing System

GRA: GOOS Regional Alliance

INFCOM: WMO Commission for Observation, Infrastructure and Information Systems

IOC: Intergovernmental Oceanographic Commission of UNESCO

IOC A-33: 33rd IOC Assembly

IOCARIBE: UNESCO-IOC Subcommission for the Caribbean and Adjacent Regions

IOCCP: International Ocean Carbon Coordination Project

IOC-WESTPAC: IOC Sub-Commission for the Western Pacific

IODE: International Oceanographic Data and Information Exchange

IPBES: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

IPCC: Intergovernmental Panel on Climate Change

JCB: Joint Collaborative Board

MBON: Marine Biodiversity Observation Network

NFP: National Focal Point

NOAA: National Oceanic and Atmospheric Administration (U.S.)

NODC: National Oceanographic Data Center

NWP: Numerical Weather Prediction

OBIS: Ocean Biodiversity Information System

OBPS: Ocean Best Practices System

OCG: GOOS Observations Coordination Group

ODIS: Ocean Data Information System

OOPC: Ocean Observations Physics and Climate Panel / GOOS Physics and Climate Expert Panel

ORL: Operational Readiness Levels

PI-GOOS: Pacific Islands Global Ocean Observing System

POGO: Partnership for Observation of the Global Ocean

R&D: Research & Development

RRR: WMO Rolling Review of Requirements

SC: Steering Committee

SIDS: Small Island Developing States

SOPM: IOC Sustainable Ocean Planning and Management Strategy

SSP: Sea Surface Pressure

SST: Sea Surface Temperature

VOS: Voluntary Observing Ships

WMO: World Meteorological Organization

WMO G3W: WMO Global Greenhouse Gas Watch

WOA: World Ocean Atlas

The Global Ocean Observing System

unesco Intergovernmental Oceanographic Commission

WORLD METEOROLOGICAL ORGANIZATION

UN environment United Nations Environment Programme

International Science Council

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