DRAFT Terms of Reference for approval by the GOOS Steering Committee

Task Team to Advance the Development of an Arctic GRA

The development of a structure for improved international coordination of Arctic oceanography, such as an Arctic GOOS (Global Ocean Observing System) Regional Alliance (GRA), has been recommended in various fora in recent years, including during the development of the Arctic Action Plan for the UN Ocean Decade and at various editions of the Arctic Observing Summit (most recently in 2022). A concept and framework for a Sustained Arctic Ocean Observing System was also developed in detail by Lee *et al.* (2019), and a roadmap for a sustainable Arctic Observation System for ocean, atmosphere and land was developed within the EU-funded INTAROS project (Sandven *et al.*, 2022).

In order to advance discussions and begin to outline a roadmap towards realisation of a structure for international coordination of ocean observing in the Arctic, a roundtable discussions meeting was held during the 2023 Arctic Science Summit Week (ASSW) in Vienna, attended by a wide range of partners engaged in ocean and broader Arctic observing initiatives. A report from this meeting is available here. Participants in the meeting agreed that a Task Team should be formed to design and lead a process to develop a potential Arctic GRA.This process is to include engagement of a range of stakeholders, including representatives of Arctic Indigenous and Local communities and organisations. It is proposed that this Task Team and the process it develops be formally recognised by GOOS, at the next GOOS Steering Committee (GOOS SC-12).

Objectives

1. Lead the process to develop a proposal for a potential future Arctic GRA.
2. Ensure wide engagement of relevant rights holders and stakeholders in this process, including representatives of Arctic Indigenous and Local communities and organisations.
3. Prepare for the implementation of the proposed Arctic ocean observing alliance that includes equitable partnerships with Arctic Indigenous Peoples.

Expected outcome

The expected outcome of the Task Team will be a proposed design for an Arctic ocean observing system (such as a GRA) that unites the diversity of sustained ocean observing initiatives in the Arctic through a single entity or structure. The future system will span the whole ocean observing value chain, from observations to benefits for users, and include all sustained ocean and sea ice observing activities in the Arctic (research, operational oceanography, monitoring, community based monitoring, etc.). The proposed GRA design will be inclusive of the needs of different rights holders, stakeholders and actors throughout the Arctic, including Indigenous and Local communities, and worldwide. By the end of the Task Team's initial 18-month period a viable Arctic ocean observing system (Arctic GRA) design will have been developed, and preparations for its implementation will be underway.

Terms of Reference

- Consult appropriately across the ocean observing community in the Arctic to develop a proposal for an Arctic GRA.
- Complete the actions defined below during the Task Team's initial life time.

- Convene Task Team members (online or in person) at 2-monthly intervals (or more frequently as needed) to update on progress and plan implementation of defined actions (below).
- Assess progress towards an Arctic GRA and future needs for continued activity after the Task Team's initial lifetime.
- Report to the GOOS SC on progress to complete defined actions (below) and detail next steps in October 2024.

Actions (listen chronologically by planned deadline)

The following initial actions have been identified for the Task Team:

1. Design an inclusive process for the development of an Arctic GRA incorporating broad input from relevant stakeholders and representatives of Arctic Indigenous and Local communities. (Ongoing)
2. Consult with other GRAs around the world to gather best practices, advice and experience to support the development of an Arctic GRA, particularly those with prominent involvement of Indigenous and Local communities. (Ongoing)
3. Explore available opportunities to secure funding to support the work of the Task Team, particularly to support engagement of Indigenous colleagues in its activities (Ongoing)
4. Apply for a side event at the Arctic Circle Assembly 2023 to advance discussions, gather stakeholder input and strengthen support for the development of an Arctic ocean observing system among the wide community active in Arctic issues (Deadline: 1st May 2023)
5. Host a briefing on the SAON ROADS process for Task Team members as a potential method to employ to develop the Arctic GRA design (Deadline: June 2023)
6. Host a briefing/information session from other GRAs with prominent involvement of Indigenous and Local communities to gather best practices, advice and experience to support the development of an Arctic GRA (Deadline: August 2023)
7. Draft a white paper on the development of an Arctic GRA, including an initial design, for submission to the Arctic Observing Summit (AOS) 2024 (Deadline: August 2023)
8. Draft an inventory of existing sustained ocean and sea ice observing initiatives across the Arctic, building upon previously completed work (such as that completed for the 3rd Arctic Science Ministerial), (Deadline: October 2023)
9. Develop a two-page, accessible document summarising the concept of an Arctic ocean observing system and the planned process towards its development (Deadline: October 2023)
10. Convene a session at AOS 2024 to discuss the proposed initial GRA design and gather community feedback for further refinement and development (Deadline: March 2024)
11. Report on progress of development of the proposed Arctic GRA to the GOOS Steering Committee and Regional Alliance Forum (April 2024)
12. Develop a contingency plan for an alternative governance form if 1) a GRA is not preferred by the community, or 2) a proposal to form a GRA fails to be approved by the Intergovernmental Oceanographic Commission of UNESCO (IOC) (October 2024) (it is not yet known if the proposed GRA will be ready to seek IOC approval during this Task Team period, however a contingency plan will be developed regardless that may only be used later).

Timeline
The Task Team will begin working in April 2023, and plans to have completed its initial actions by October 2024, at which point a review of its activities and decision on future plans will be made.

Initial membership
The following individuals have been identified as members of the Task Team. Membership will remain open to additions throughout the duration of the Task Team to include the diverse range of expertise and input required, while maintaining an appropriate size to be effective.

A liaison contact with the GOOS Office (Denis Chang Seng) will ensure necessary connections between the Task Team and the GRA Forum.

Name	Affiliation	Country
Jari Haapala (Co-Chair)	Finnish Meteorological Institute (FMI)	Finland
Craig Lee (Co-Chair)	University of Washington	United States
Nicoletta Ademollo	National Research Council Institute of Polar Sciences (CNR-ISP)	Italy
Maurizio Azzaro	National Research Council Institute of Polar Sciences (CNR-ISP)	Italy
Manuel Bensi	National Institute of Oceanography and Applied Geophysics (OGS)	Italy
Agnieszka Besczynska-Moeller	Institute of Oceanology Polish Academy of Sciences (IO PAN)	Poland
Maria Teresa Bezem	University of Bergen (UiB)	Norway
Melissa Chierci	Institute of Marine Research (IMR)	Norway
Cathy Coon	US Department of Interior	United States
Maria Hood	Mercator Ocean International (MOi)	France
Michael Karcher	Alfred Wegener Institute Helmholtz Center for Polar and Marine Research (AWI)	Germany
Takashi Kikuchi	Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	Japan
Vidar Lien	Institute of Marine Research (IMR)	Norway
Inga Lips	European Global Ocean Observing System (EuroGOOS)	Belgium
Molly McCammon	Alaska Ocean Observing System (AOOS)	United States
Anna Nikolopoulos	Norwegian Polar Institute (NPI)	Norway
Joseph Nolan	European Global Ocean Observing System (EuroGOOS)	Belgium
Steffen Olsen	Danish Meteorological Institute (DMI)	Denmark
Nicholas Roden	Norwegian Institute for Water Research (NIVA)	Norway
Hanne Sagen	Nansen Environmental and Remote Sensing Center (NERSC)	Norway
Stein Sandven	Nansen Environmental and Remote Sensing Center (NERSC)	Norway
Toste Tanhua	GEOMAR Helmholtz Centre for Ocean Research Kiel	Germany
Jeremy Wilkinson	British Antarctic Survey (BAS)	United KIngdom
Eun Jin Yang	Korea Polar Research Institute	Republic of Korea

Resources
The Task Team's activities are initially on an in-kind basis. Opportunities for funding the work of the Task Team will be explored, particularly to support engagement of Indigenous colleagues in its activities.