



SOCONET Steering Committee - Terms of Reference

OCG Emerging Network
March 2025

Purpose

In 2024, the Surface Ocean CO₂ Observing Network (SOCONET) was formally recognized as an emerging network by the Global Ocean Observing System Observations Coordination Group (GOOS-OCG). SOCONET aims to develop a coordinated network of national, regional, and private sector operators to constrain the air-sea flux of CO₂ and deliver surface ocean CO₂ products. Annual reporting of progress to the OCG committee is expected until relevant network attributes will be fully developed.

The SOCONET Steering Committee (SC) provides scientific leadership and oversight for the development and implementation of the network. The SC is committed to working towards the OCG data, metadata and best practices requirements through following activities:

- The SOCONET SC will develop and provide oversight for execution of the SOCONET Implementation Plan including a clear strategy to secure the network coordination function.
- The SOCONET SC shall oversee the coordination of surface ocean CO₂ observations with the primary objective of delivering sustained, high-quality, and accessible observations for constraining CO₂ fluxes between the ocean and the atmosphere.
- The SOCONET SC will establish surface ocean CO₂ measurement requirements, including reference-level measurements. Different data qualities will be assigned different Tier levels. This will include developing and disseminating standard operating procedures and best practices and updating those as needed.
- The SOCONET SC will encourage, facilitate, and coordinate the recruitment of greater and global representation in SOCONET, including determination of minimum requirements for SOCONET participants and coordination of training and capacity building activities as needed.
- The SOCONET SC will facilitate collection and timely submission of data from SOCONET platforms to the Surface Ocean CO₂ Atlas (SOCAT) data repository and platform metadata through the Joint WMO-IOC in-situ Observations Programmes Support (OceanOPS). The SOCONET SC in coordination with SOCAT and GOOS-OCG shall provide advice on the contents, quality, and timeliness of the SOCONET data streams to ensure that guidelines regarding measurements and data submission are met.
- The SOCONET SC will coordinate with other relevant global observing networks, including those for atmospheric greenhouse gases, other ocean greenhouse gases (N₂O and CH₄) and satellite-based measurements.
- The SOCONET SC will interact with OceanOPS through GOOS-OCG, International Ocean Carbon

Coordination Project (IOCCP / GOOS Biogeochemistry Panel) and relevant panels and working groups (e.g. WMO Greenhouse Gas Watch - G3W) and solicit funding from national agencies and multi-national entities for OceanOPS services.

- The SOCONET SC will facilitate interactions between nations and stakeholders to ensure surface ocean CO₂ observations that meet SOCONET quality requirements are made on research vessels, ships of opportunity, surface buoys and other emerging surface ocean observing platforms.
- The SOCONET SC will advocate for routine surface ocean CO₂ instrument intercomparison exercises, including for emerging technologies.
- To address specific tasks, SOCONET SC will convene specialized Task Teams (TT). These TTs can include relevant experts that are not part of the SOCONET SC. The TTs will report back to the SOCONET SC and be disbanded following their fixed-term.

Membership

The SOCONET SC shall be made up of scientists and technical experts from groups contributing to SOCONET and involved in the production of its data products as needed. SC members will be recruited with effort to represent as wide as possible geographic distribution, career stage and to maintain gender balance. SC members should represent expertise in fields of ocean observing, chemical oceanography, sensors and instruments, modeling, or data management. The SOCONET SC will be composed of 2 co-Chairs plus up to 18 additional SC members.

The SOCONET SC shall be led by two co-Chairs selected from within SOCONET SC. The co-Chairs should represent the diversity of the SC. Co-Chairs will be nominated by an SC members or self-nominated, and appointed following the approval of more than half of the total number of SC members.

The SOCONET SC shall form a **SOCONET Executive (Exec)** consisting of:

- Two SOCONET SC co-Chairs
- The SOCONET Coordinator (IOCCP)
- The SOCONET Technical Coordinator (OceanOPS)

The SOCONET Executive will take care of the day-to-day operations of SOCONET such as preparing, moderating and reporting from SOCONET SC meetings and conference calls; providing recommendations and endorsements for national programmes and coordination with other programs, actively engaging in bi-directional communication with GOOS-OCG and its parent organisations (IOC-UNESCO, WMO, UNEP, ISC) on matters related to SOCONET.

Appointments

In order to assure the required expertise in the SOCONET SC, a call for new members is prepared by the SOCONET Executive, approved by more than half of the total number of SC members and distributed to the community via relevant communication channels. The call is usually issued when (i) a current SC members is within 3 months of finishing their term or needs to rotate off the SC before their term finishes, or (ii) when a need for additional expertise on the SC arises. Following the application deadline (usually 4-6 weeks), the Exec assesses all applicants based on the criteria listed in the call, additional information included in the application documents, and additional knowledge of applicants' involvement in relevant activities. The Exec presents the SOCONET SC with individual nominations, including justification for each proposed new SC members. A nominated applicant becomes an SC members following the approval of more than half of the total number of active SC members.

SC members are appointed for one 4-year term with the possibility to extend service for a maximum of 2 terms, pending mutual agreement after the first term. For an SC member who subsequently becomes a co-Chair, the maximum period of service may be extended up to 12 years, with a maximum period of 8 years as co-Chair. Appointments usually begin at the start of the calendar year.

The initial SOCONET SC (2025 onwards) will be composed of all the members of the SOCONET interim Steering Committee (iSC) who will agree to transition, plus additional members appointed in 2025 following the procedure above. The iSC chose not to select their co-Chairs and the Technical Coordinator is not yet appointed. The nomination and selection process will be coordinated by the SOCONET Coordinator and executed by the full iSC.

Members of iSC in 2025 are:

Adrienne Sutton, NOAA, USA
Bronte Tilbrook, CSIRO, Australia
Dorothee Bakker, UEA, UK
Kathy Tedesco, NOAA, USA
Kevin O'Brien, NOAA, USA
Maciej Telszewski, IOCCP, Poland
Martin Kramp, OceanOps, France
Mathieu Belbeoch, OceanOps, France
Richard Sanders, NORCE, Norway
Rik Wanninkhof, NOAA, USA
Shin-ichiro Nakaoka, NIES, Japan
Steve Jones, VLIZ, Belgium
Thanos Gkritzalis, VLIZ, Belgium
Tobias Steinhoff, GEOMAR, Germany

Ex-officio Expert Advisors

SOCONET SC co-Chairs, following consultation with the SC members, may invite ex-officio Expert Advisors from government agencies, relevant intergovernmental and international bodies as well as national scientific programs to support the work of the SOCONET SC with their specific expertise. They will be expected to attend the SOCONET SC meetings when appointed. Ex-officio Expert Advisors are appointed for a 4-year term with the possibility to extend service for consecutive terms, pending mutual agreement after each term. Ex-officio Expert Advisors do not count as SC members, and are not formally included in any decision-taking process.

Specific roles and responsibilities of SOCONET SC members

SOCONET SC members shall be actively engaged in activities described in the “Purpose” section of this document, including outreach activities and tracking progress of SOCONET implementation and data submission by SOCONET members. SOCONET SC members are considered hubs for national and/or regional networks. They are expected to help track observations made under the auspices of their nation/region, and help facilitate timely submission of data to the SOCONET data centers. They will specifically:

- Meet at least 4 times a year via teleconference, and at least every 2 years in person. Formal and informal meetings of the SOCONET SC, in conjunction with international meetings are encouraged;
- Report at SOCONET meetings and in writing to the SOCONET Executive and SC: the views, challenges and successes of their national/regional network;
- Ensure that decisions of the SOCONET Executive and SC are relayed to the relevant national/regional networks and that appropriate actions are recommended;
- Take necessary steps to ensure that their national/regional network contributes appropriately to the SOCONET program;
- Advise the SOCONET Technical Coordinator, and SOCONET SC in a timely manner of proposed occupations of SOCONET platforms;
- Encourage scientific use of SOCONET data and publicize achievements;
- Provide guidance in execution of measurements' requirements, standard operating procedures and best

practices of these measurements on all platforms.

Specific roles and responsibilities of SOCONET Coordinator(s)

SOCONET Steering Committee Coordination (IOCCP)

- Coordinate the establishment of the SOCONET Steering Committee and keep their ToR up to date.
- Coordinate the SC efforts towards identification of key science and policy stakeholders for a SOCONET to allow for efficient co-design of an ocean carbon observing system.
- Coordinate/Participate in monthly conference calls with the SOCONET SC focusing on progress of work regarding the Implementation Plan.
- Organize and co-moderate in-person SOCONET Steering Committee Meetings.

Development of SOCONET Implementation Plan (IOCCP)

- Coordinate and provide oversight for the drafting, preparation, and updating (as needed) of the SOCONET implementation plan, which should include an observing network design.
- Coordinate the development, operation and governance of the SOCONET Task Teams as needed.

Daily Coordination Activities (IOCCP)

- Provide inter-sessional oversight for SOCONET activities.
- Oversee development of project planning documentation and schedules.
- Develop and/or review SOCONET presentations as necessary (e.g., for annual IOC-UNESCO General Assembly, annual GOOS SC Meeting, etc.).
- Maintain SOCONET website.

Network level Technical Coordination (OceanOPS)

Technical coordination at the network level will be provided by OceanOPS which will fulfill the responsibilities outlined in the Service Level Agreement between SOCONET and OceanOPS including: network monitoring, reporting, metadata management, data monitoring and work with SOCONET data providers to assure data is submitted to SOCAT and to defined global data nodes in a timely manner, maintain visibility of SOCONET-related statistics and performance indicators through the OceanOPS website, bibliography and other fora, liaise with other OceanOPS and GOOS-OCG activities, including cross-linking of metadata ensuring SOCONET is an integral part of the GOOS vision.