

NOAA Observing Systems Committee

Terms of Reference

NOAA OBSERVING SYSTEMS COMMITTEE
April 2023

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A. Governance and Purpose

1. The Observing Systems Committee (OSC) coordinates on behalf of the NOAA Observing Systems Council (NOSC) and performs activities in matters regarding NOAA's integrated observing systems portfolio (requirements, architectures, trades, emerging technologies, and investments). The NOSC's primary mission is to advise and provide recommendations to the Under Secretary of Commerce for Oceans and Atmosphere and to the NOAA Administrator.
2. NOAA's observing systems portfolio contains more than 200 different systems and encompasses approximately half of NOAA's budget. Many of these systems were designed for a single purpose using multiple networks, data formats, and dissemination methods. Analysis activities, including consolidation and/or integration efforts, are an important means to address potential inefficiencies and opportunities in this portfolio. These activities and efforts should seek to continually refine and optimize existing and proposed portfolios via a process that is linked to NOAA's services, programs, goals, and outcomes. A balance of observing systems and methods must be achieved for an optimal and efficient portfolio that serves NOAA's mission. The NOSC has determined that a dedicated committee is needed for this process.
3. The OSC supports the ongoing development and agency-wide utilization of the observing systems portfolio management tools, and proposes new ones, to conduct analyses and make progress toward achieving a mission-effective, integrated, adaptable, and affordable observing system architecture to meet NOAA's current and future missions. The NOSC has an obligation to NOAA leadership and the public to show a high return on investment in terms of service outcomes and societal benefits for the substantial resources committed. Therefore, the OSC will provide:
 - a. Comprehensive, ongoing assessment and analysis of the observing systems portfolio, and
 - b. Specific recommendations to the NOSC for changes to the configuration of NOAA's observing systems and overall portfolio to maximize the benefit to NOAA and its end users.
4. Consistent with NOAA Administrative Order (NAO) 212-16 and associated procedural directives, the Committee will:
 - a. Update the current observing systems portfolio and leveraged capabilities used by NOAA,
 - b. Provide recommendations to the NOSC for changes to NOAA's observational requirements, architectures, trades, and investments based on annual planning activities and long-term trends,

- c. Understand and validate the assumptions underpinning the Technology, Planning and Integration for Observation (TPIO) analysis method and databases,
 - d. Lead the development of the biennial “NOAA’s Observation Enterprise Portfolio Outlook” report on behalf of the NOSC, which shall identify key observing system issues, challenges, opportunities, or innovations emerging within the NOAA services enterprise initiatives and policy focus areas,
 - e. Collaborate with the Science Council to plan and execute a periodic Emerging Technologies Workshop,
 - f. Assess the impact on mission outcomes of NOAA’s proposed investments in observing systems for the current budget cycle upon request from the NOSC,
 - g. Assess the impact of proposed investments for any out-of-budget-cycle recommendations in observing systems upon request from the NOSC,
 - h. Ensure that its data management practices are consistent with those of the NOAA Data Governance Committee (DGC) to ensure maximal use/benefit of NOAA’s environmental information assets,
 - i. Coordinate with the Quantitative Observing System Assessment Program (QOSAP) for the planning and execution of quantitative assessments requested by the NOSC on the design and implementation of optimal observing systems, and
 - j. Undertake tasks as assigned by NOSC.
5. The Committee will in the longer term:
- a. Continuously monitor the life-cycle impact on outcomes of NOAA’s investments in observing systems,
 - b. Monitor the life-cycle impact of OSC recommendations implemented regarding investments in observing systems,
 - c. Understand and validate the assumptions underpinning the TPIO analysis method and databases and their linkages with NOAA’s goals for services outcomes,
 - d. Facilitate the assessment of new technologies produced by industry, academia, and NOAA laboratories for inclusion into the observing systems portfolio,
 - e. Engage and coordinate with interagency partners and non-Federal entities to optimize national observations, as needed,
 - f. Engage and coordinate with international partners to optimize international observations, as needed,
 - g. Engage with the Science Council, Fleet Council, Oceans and Coasts Council and the DGC, to harmonize roles and responsibilities as appropriate, and
 - h. Facilitate, coordinate, and enable observing system configurations and portfolios, including alternatives and estimates of life-cycle costs that are linked to NOAA’s goals for services outcomes and in support of NOAA’s strategic planning.

B. Membership

1. Co-Chairs: Two Line Office leadership representatives will serve as co-chairs
2. Executive Secretariat: The Executive Secretariat will be appointed by the OSC Co-Chairs
3. Members: Senior Representatives from NOAA Line and Staff Offices, with changes as necessary given changes to NOAA's program structure, and with the approval by the Line Office NOSC representative:
 - a. National Environmental Satellite, Data, and Information Service (NESDIS)
 - b. Office of Marine and Aviation Operations (OMAO)
 - c. National Marine Fisheries Services (NMFS)
 - d. National Ocean Service (NOS)
 - e. National Weather Service (NWS)
 - f. Office of Oceanic and Atmospheric Research (OAR)
4. Advisors:
 - a. Technical Advisor: TPIO representative
 - b. Observing System (Simulation) Experiments (OSE and OSSE) Advisor: QOSAP Director or designee

C. Committees/Teams/Working Groups

1. The Committee may form teams or working groups to achieve specific tasks as needed. The membership of these teams or working groups include representatives from relevant NOAA programs, and tasks focus on, among other things, assessing the impact(s) of any proposed changes to NOAA's observing systems architecture(s) and portfolio(s) on the services NOAA provides to its constituents.

D. Roles and Responsibilities

1. Co-Chairs: The Co-Chairs will report regularly to and receive guidance from the NOSC. The Co-Chairs will provide direction to the Advisors, Executive Secretariat, and the Committee as appropriate.
2. Executive Secretariat: The Executive Secretariat will support all administrative functions as determined by the OSC Co-Chairs and the Technical Advisor.
3. Members: OSC members will:
 - a. Attend Committee meetings,
 - b. Ensure NOAA requirements (to include user requirements and observation requirements) are identified and documented by Line and Staff offices,
 - c. Represent Line Office observing system capabilities,
 - d. Provide a NOAA-wide perspective, and

- e. Accomplish tasking as directed by Co-Chairs.
- 4. Advisors: The OSC advisors will:
 - a. Provide advice on the types of analyses to perform and technical direction for the OSC,
 - b. Provide analyses as required to accomplish Committee taskings,
 - c. Engage respective OSC members when conducting analyses based on customer requests and the NOSC work plan related to that Line or Staff Office and provide completed analyses for their information, and
 - d. Provide advice on future satellite planning, architecture-level trades, and opportunities to incorporate commercial, US, and international partners into the observing systems portfolio to increase efficiency and reduce costs.

E. Meeting Frequency

Meeting Frequency: Meetings are held monthly and more often as necessary.

F. Decision-Making Process

Decisions will normally be reached by informed consensus. If consensus is not achieved, the dissenting opinions and case will be presented to the NOSC.