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(OF UNESCO)

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## **SHIP OBSERVATIONS TEAM**



# **SHIP OBSERVATIONS TEAM STRATEGY (2022-2026) FIRST EDITION**

2022

## NOTES

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This publication is available in pdf format, at the following link:

<https://www.ocean-ops.org/sot/strategy.pdf>

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## FOREWORD

The Ship Observations Team (SOT) was established in 2001, jointly by the World Meteorological Organization (WMO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO, to build on synergies between the three panels involved in coordinating global ship-based observing programmes. These three panels are the Voluntary Observing Ship (VOS) Scheme, the Ship-of-Opportunity Programme (SOOP), and the Automated Shipboard Aerological Programme (ASAP). The panels support research, climate forecasting, numerical weather prediction and maritime safety services, amongst other applications.

The requirements for meteorological, oceanographic, and climate applications continue to grow. Variables measured by vessels coordinated with the Ship Observations Team, either through National Meteorological and Hydrological Services (NMHS), or directly, include surface meteorological observations, plus sub-sets for upper-air meteorological and upper-ocean physical data. The sampling rationale for these variables has been set via various scientific advisory groups and climate-related panels.

The global ocean economy is projected to grow to \$3 trillion (U.S.) by 2030<sup>1</sup>. Quality data and metadata, from an increasing number of sources and with an aim to be acquired from all parts of the world, will foundationally support the world's blue economy. Data integrated into navigational tools and services will promote safety of life at sea and economic efficiency.

The United Nations has proclaimed a Decade of Ocean Science for Sustainable Development (2021-2030)<sup>2</sup>. Ship data will be critical to improve understanding of our global oceans and climate, helping to inform strategies for, and responses to, climate change. The data acquired, and the resultant strategies and responses, will be coordinated among NMHSs, developing nations, academia, industry, and individual citizens, with the data adopting FAIR (findability, accessibility, interoperability, and reusability) principles.

This strategy will guide the efforts of the Ship Observations Team through 2027. Developed with input from the Ship Observations Team, this strategic plan provides a pathway for the team to maintain and enhance its global leadership in ship data and metadata requirements and coordination, and expand the world's ship observations, while fostering diversity, good stewardship of the world's oceans, and efficient use of resources. The Ship Observations Team will regularly review this plan, including its mission, vision, and goals, along with its structure and terms of reference, to most effectively advance greater international coordination between entities involved in marine observing programs.

Darin Figurskey  
(United States of America)  
(Chairperson of the SOT)

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<sup>1</sup> NOAA 2020 Business Brief, U.S. Department of Commerce, National Oceanic and Atmospheric Administration

<sup>2</sup> United Nations Decade of Ocean Science for Sustainable Development (2021 – 2030), <https://en.unesco.org/ocean-decade>

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### RECORD OF CHANGES

<b>Date</b>	<b>Page(s) affected</b>	<b>Reason for change</b>	<b>Author</b>
October, 2022	Release of Version 1.0		SOT Panel

## SHIP OBSERVATIONS TEAM (SOT)

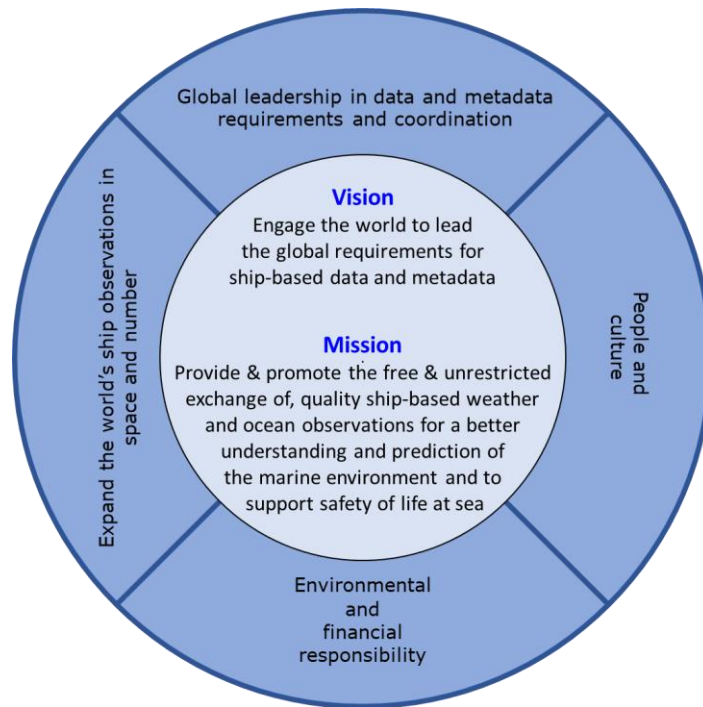
### VISION AND MISSION STATEMENTS

#### **VISION**

Engage the world to lead the global requirements for ship-based data and metadata.

#### **MISSION**

Provide, and promote the free and unrestricted exchange of, quality ship-based weather and ocean observations for a better understanding and prediction of the marine environment and to support safety of life at sea.



## **STRATEGIC GOALS**

### **1. Global leadership in data and metadata requirements and coordination**

The Ship Observations Team will further the coordination, exchange, and archival of quality ship-based data and metadata.

### **2. Expand the world's ship observations in space and number**

The Ship Observations Team will advance the quantity and quality of ship-based observations to better understand our weather, oceans, and climate and for the safety of life at sea.

### **3. People and culture**

The Ship Observations Team will promote diversity and strive to be functionally connected to observational networks and entities that create and inform global observational policies.

### **4. Environmental and financial responsibility**

The Ship Observations Team will foster good stewardship of the world's oceans, and efficient use of resources.

## **1. Global leadership in data and metadata requirements and coordination**

*The Ship Observations Team will further the coordination, exchange, and archival of quality ship-based data and metadata.*

- 1.1 Improve the coordination of observations between nations, standardize and advance observational and metadata methods and quality assurance and quality control, ensure consistent data management, and address climate monitoring requirements.
- 1.2 Improve the coordination of observing networks to reduce the number of visitors to ships with sampling programme requests.
- 1.3 Promote the free and unrestricted exchange of ship-based observations and metadata.
- 1.4 Raise the technology readiness level of shipboard observations and ship-to-shore data communications, including equipment calibration, communications standards, and data processing and reporting methods.
- 1.5 Develop and maintain a process for ships from commercial, private, and research fleets to register their instrumentation.
- 1.6 Promote the archival of both observations and metadata, and the rescue of historical metadata.
- 1.7 Review, maintain and update as necessary technical guidance material relating to ship observations and Port Meteorological Officers.
- 1.8 Work among the Observations Coordination Group (OCG) networks to harmonize metadata, develop performance indicators and best practices, and coordinate recruitment, promotion, and training activities.



## **2. Expand the world's observations in space and number**

*The Ship Observations Team will advance the quantity of ship-based observations to better understand our weather, water, and climate and for the safety of life at sea.*

- 2.1 Foster greater international capacity for the VOS programme, SOOP, and ASAP, including, but not limited to: advocacy for and support for Port Meteorological Officers, ships of opportunity, and shipboard upper-air systems; increasing ship observations among developing nations; coordination with industry and research-based organizations; and, citizen science initiatives.
- 2.2 Increase sampling in under-sampled regions of the world oceans, increase the frequency of observations even along well-travelled shipping lanes, measure multiple parameters simultaneously on a single ship, and promote requirements for reports not usually available with automated systems.
- 2.3 Continue WMO Integrated Global Observing System (WIGOS) implementation activities, to achieve better integration of marine meteorological and oceanographic observations into WIGOS.
- 2.4 Participate in the planning activities of the appropriate observing system experiments and major international research programmes.
- 2.5 Seek new opportunities for coordinating deployment and/or recovery of various kinds of measuring devices as recommended by relevant panels and networks and widely publicize those opportunities.

### **3. People and culture**

*The Ship Observations Team will promote diverse values and strive to be functionally connected to observational networks and entities that create and inform global observational policies.*

- 3.1 Foster regional and gender balance among the SOT leadership.
- 3.2 Ensure adequate representation of SOT programmes, directly and through liaisons, in Global Ocean Observing System (GOOS) panels, WMO Technical Commissions, and expert task teams such as the OCG.
- 3.3 Provide comprehensive Port Meteorological Officer, observer, and operator training and retraining, and training materials.

### **4. Environmental and financial responsibility**

*The Ship Observations Team will foster good stewardship of the world's oceans, and efficient use of resources.*

- 4.1 Advance capabilities and opportunities for environmental stewardship in support of the health of the global oceans.
  - 4.2 Ensure financial planning and budgetary situational awareness meets the SOT mission goals.
  - 4.3 Reconcile the needs and aspirations of the global programmes with those of the ship-based observation operators and funders, and align with WMO, IOC, GCOS (Global Climate Observing System), and GOOS strategic planning.
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