

**Working Group 2
Tsunami Detection, Warning and Dissemination**

1. Terms-of-Reference

Liaise with other working group(s) and task team(s) within the ICG/IOTWMS and with working groups from the other ocean basins through the TOWS-WG to:

1. Coordinate and strengthen the operational implementation of tsunami detection, warning and dissemination, including for tsunamis generated by non-seismic and complex sources, and multi-hazard framework.
2. Support the Tsunami Service Providers (TSPs) delivery of interoperable regional tsunami threat information products to Member States.
3. Support Member States in the development of their national tsunami warning capabilities.
4. Monitor the performance of key observational, warning and communication system components.
5. Support implementation of IOWave Exercises.
6. Identify areas of priority for action following assessments, communications tests, exercises, and real tsunami events.
7. Provide advice to and collaborate with the UNESCO-IOC Indian Ocean Tsunami Information Centre (IOTIC) on capacity development on warning system and services including for non-seismic and complex sources.
8. Provide special attention to the needs of SIDS, LDCs, Africa in the work program.
9. Develop WG2 work plans in line with the broad objectives of ODTP RDIP, Ocean Decade Challenge 6, EW4ALL.
10. In collaboration with UNESCO-IOC IOTIC and UNESCO-IOC Secretariat for ICG/IOTWMS, help strengthen the capacity and capability of Member States.

2. Membership

Working Group 2 is composed of members nominated by Member States, Member State representatives for each ICG-designated TSP, at least two representatives of non-TSP National Tsunami Warning Centres, and invited observers, with a chairperson and one or two vice-chairpersons to be elected by the ICG.

- **Chair:** Mr Padmanabham Jijavarapu (India), padmanabham@incois.gov.in
- **Vice-Chair:** Dr Robert Greenwood (Australia), robert.greenwood@bom.gov.au
- **Vice-Chair:** Mr Yedi Dermadi (Indonesia), yedi.dermadi@bmkg.go.id
- Ms Adrienne Moseley (Australia), adrienne.moseley@ga.gov.au
- Mr M Nagaraja Kumar (India), raja@incois.gov.in
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- Mr Iman Fatchurochman (Indonesia), iman.fatchurochman@bmkg.go.id
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- Dr Chai Mui Fatt (Malaysia), chai@met.gov.my
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- Ms Moza Al Marhoobi (Oman), moza.almarhoobi@caa.gov.om
- Mr Anjum Nazir Zaigham (Pakistan), anzaighum@gmail.com
- Ms Rose Soy (Seychelles), r.soy@meteo.sc
- Mr Badr Alameri (UAE), balameri@ncm.gov.ae
- Ms Shamma Alneyadi (UAE), salneyadi@ncm.gov.ae

3. Actions from ICG/IOTWMS-XIV

Banten, Indonesia, 17-19 November 2024

ICG-XIV/WG2(i) Trial dissemination of maritime bulletins to respective NAVAREA operators in the Area of Service (AoS) for the upcoming communication test and for full operational implementation in 2025.

ICG-XIV/WG2(ii) Develop a Standard Operating Procedure (SOP) document for TSPs to address Tsunami-Generating Volcanic Events (TGVEs).

ICG-XIV/WG2(iii) Develop an optimal national observing network design to meet the objectives of ODTP, facilitate the strategic and coordinated submission of projects to the UN Ocean Decade and potential funding sources.

ICG-XIV/WG2(iv) Utilise and promote the use of multi-purpose sea level monitoring stations to support MHEWS in enhancing data coverage and reducing costs.

ICG-XIV/WG2(v) Utilise exercises and communication tests as an opportunity to simultaneously monitor data availability and quality.

Actions from ICG/IOTWMS Steering Group-XIX

Jakarta, Indonesia, 17-19 June 2025

SG-XIX/WG2(i) Harmonise TSP Standard Operating Procedures (SOPs) for non-seismic events (i.e., TGV), and update the TSP service definition document and NTWC user guides accordingly

SG-XIX/WG2(ii) Engage with relevant Working Groups in the other ICGs (i.e., PTWS) and adopt the recommended methodology to define optimal monitoring networks for the Indian Ocean

SG-XIX/WG2(iii) Organise a regional webinar on tsunamis generated by volcanos / NAVAREA bulletins with support from the Secretariat

SG-XIX/WG2(iv) Formulate guidelines on best practice in cyber security

SG-XIX/WG2(v) Develop a short document detailing the TSP products for sharing with NAVAREA coordinators and related maritime stakeholders and making updates to IOTWMS SDD and NTWC User Guide

SG-XIX/WG2(vi) Pursue the utilization of new technologies including the use of acoustic data for tsunami early warning in collaboration with Dr. Usama Kadri of Cardiff University [in collaboration with Task Team on New Technologies]

***SG-XIX/WG2(vii)** Formulate procedures for harmonizing early warning and response to multiple ocean hazards such as tsunami and storm surges, as a contribution towards Ocean Decade Challenge 6 and EW4All initiative*

4. Rules and Conditions

The following rules and conditions apply to all working groups and Task Teams of the Intergovernmental Coordination Group of the Indian Ocean Tsunami Warning & Mitigation System (ICG/IOTWMS):

- Working language: English
- Frequency of meetings: During inter-sessional period of the ICG/IOTWMS
- Coordination and elections: Following the rules of procedures applying to IOC subsidiary bodies, unless elected by the ICG/IOTWMS, a chair and at least one vice-chair will be elected by the members of the working group or task team for two years with possible re-election of one term in the same position
- Members and appointment: Nominated by Heads of ICG/IOTWMS National Delegations and/or Tsunami National Contacts of Member States in accordance with the rules of procedures applying to IOC subsidiary bodies. Technical experts and observers can be invited at the discretion of the chair
- Duration of the working group and task teams: Two years, renewable subject to review by the ICG/IOTWMS
- Programme of inter-sessional work is guided by its Terms-of-Reference decided by the ICG/IOTWMS and actions requested by the ICG/IOTWMS
- Inter-sessional work is generally conducted by email and teleconference, in addition to at least one face-to-face meeting subject to availability of members and budget
- Reports: A progress report must be submitted to the Secretariat two months before each ICG session and within two months of each working group or task team meeting with the assistance of the Secretariat.
- Financial resources: Participation in the working groups and task teams, including attendance at meetings, will be at national expense.

5. Reference Documents

Summary Report of the Fifty-seventh session of the IOC Executive Council, Paris, France, 25-26 June 2024: <https://oceanexpert.org/document/34751>

Summary Statement from 2nd UNESCO-IOC Global Tsunami Symposium, Banda Aceh, Indonesia, 11-14 November 2024: <https://oceanexpert.org/document/35594>

Summary Report of the Seventeenth Meeting of the Working Group on Tsunamis and Other Hazards related to Sea Level Warning and Mitigation Systems (TOWS-WG-XVII) Sendai, Japan, 22–23 February 2024: <https://oceanexpert.org/document/34558>

Decisions of the 14th Session of the ICG/IOTWMS, Banten, Indonesia, 17-19 November 2024: <https://oceanexpert.org/document/35572>

ICG/IOTWMS WG-2 Meeting Report, 07 August 2024: <https://oceanexpert.org/document/35115>

ICG/IOTWMS Steering Group Meeting Report, 5-6 February 2024:
<https://oceanexpert.org/document/34628>

2024 Capacity Assessment of Tsunami Preparedness in the Indian Ocean:
<https://oceanexpert.org/document/35564>

Exercise Indian Ocean Wave 23 (IOWave23) Report: <https://oceanexpert.org/document/35232>