

**Task Team**  
**New/Emerging Technologies for Observations and Forecasting**

## **1. Terms-of-Reference**

This expert Task Team will establish integrating new and emerging techniques and technologies by:

1. Developing a methodology for gap and sensitivity analysis that combines multiple sensing technologies for tsunami detection and characterisation.
2. Designing optimal notional seismic and sea level networks to enhance the timelines of Tsunami Early Warning by TSPs and NTWCs.
3. Integrating emerging techniques and sensor technologies (e.g. better use of tide gauges; GNSS technology and processing; sensors on SMART Cables) with the existing sensing network to meet tsunami warning service requirements in support of UN ODTP goals.
4. Where possible, include cost-benefit analysis of the potential technologies being considered.
5. Undertake to establish direct collaboration between ICG/IOTWMS Member States, with other ICGs, and expert groups (such as International Association of Geodesy (IAG), International GNSS Service (IGS) for the purpose of collaborating on data sharing and research efforts that are adaptable to the tsunami warning systems and operations.
6. Assess the utility and limitations of emergent technologies and techniques, e. g. GNSS and SMART Cable, that have potential to deliver ocean height in real-time.
7. Investigate emerging methods including PTF, AI/ML, real-time data assimilation and modelling etc for suitability to be adopted for operational tsunami warning.
8. Share information and procedures on deployments of new technologies to monitor sea level variations used for tsunami warning purposes, including undersea cable installations being deployed by Indonesia and India.

## **2. Membership**

The Task Team will be open to TSPs, members nominated by Member States, and invited experts.

- **Chair:** Dr Wahyu Widodo Pandoe (Indonesia), wpandoe@gmail.com
- Mr Adam Gimes (Australia), adam.gimes@bom.gov.au
- Mr Iyan Turyana (Indonesia), iyan001@brin.go.id
- Mr Afiq Zhofri Abdul Razak (Malaysia), afiq@met.gov.my
- TSP Australia Representative
- TSP Indonesia Representative
- TSP India Representative

### 3. 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.

### 4. 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 2<sup>nd</sup> 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 14<sup>th</sup> Session of the ICG/IOTWMS, Banten, Indonesia, 17-19 November 2024: <https://oceanexpert.org/document/35572>

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>