IOTWMS Tsunami Watch Operations

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TOWS-WG Task Team Tsunami Watch Operations
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CURRENT STATUS

## Detection, Warning and Dissemination

- Service Definition: AoS, Stations, Products, Thresholds, CFZs, Formats;
- Tsunami Service Framework:
  - 3 inter-operable Tsunami Service Providers (Australia, India, Indonesia);
  - Network of NTWCs.
- Greatly expanded seismic and sea level monitoring networks;
- Harmonised threat information by TSPs;
- National Warnings Sovereign responsibility of authorized national agencies;
- During the reporting period Indian Ocean witnessed 2 events,
  - (i) 13-March-2022 M6.7 at Southern Sumatra, Indonesia
  - (ii) 18-Nov-2022 M6.6 at Southwest of Sumatra, Indonesia
- Yearly performance assessments against Key Performance Indicators;
- 6-monthly Communications tests – every June & December;
- Updates to contact database & observing networks.

CURRENT STATUS

TSP TO NTWC SUCCESSFUL DELIVERY RATE OF NOTIFICATION MESSAGES

TSP to NTWC Message Delivery Success Rates
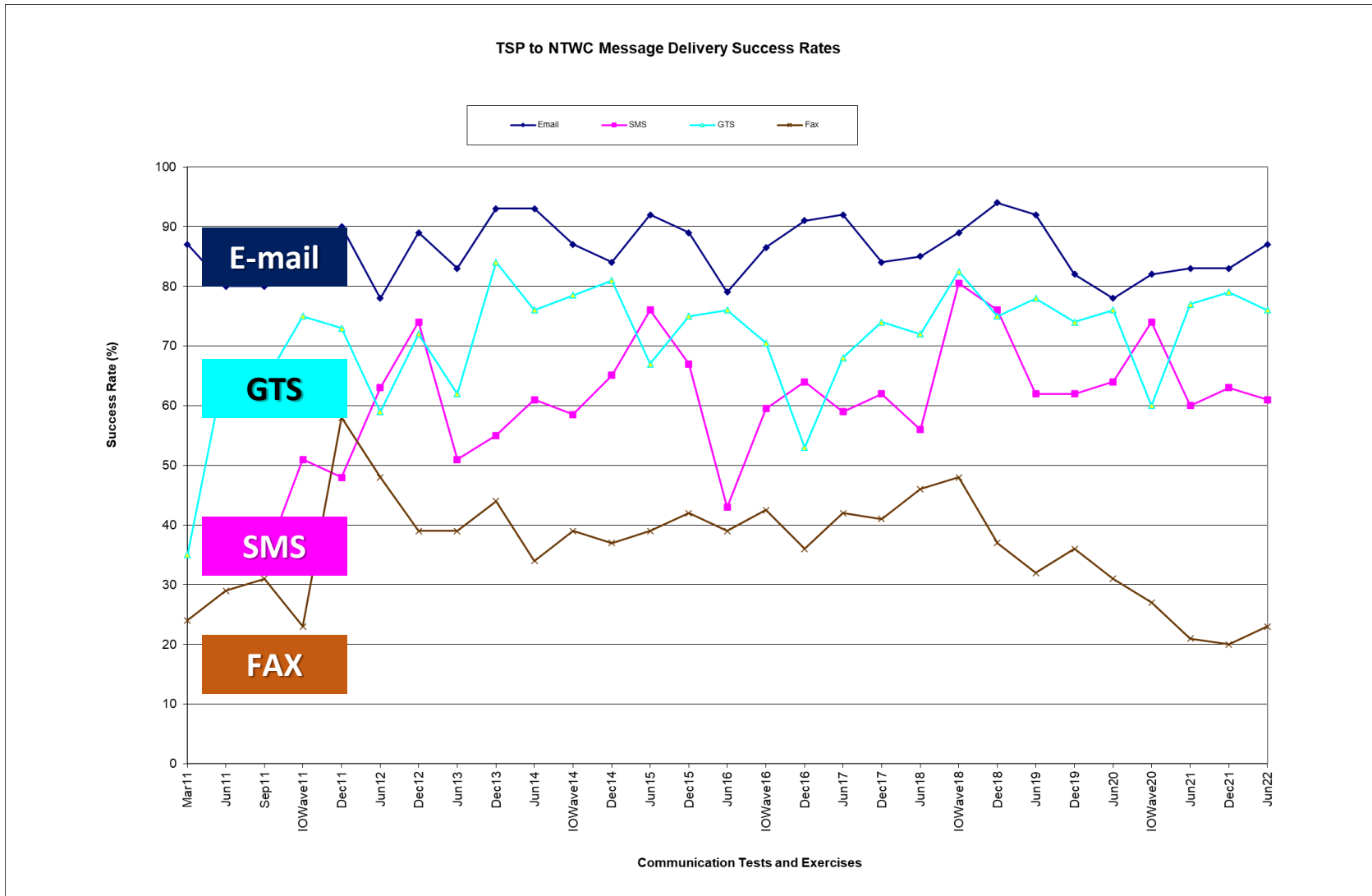
CURRENT STATUS

NTWCs Web Access and Reporting Rates

(i.e., accessing the password-protected TSP Webpages for threat information and products; and then reporting back what each country's warning status is)

NTWC Web Access and Reporting Rates
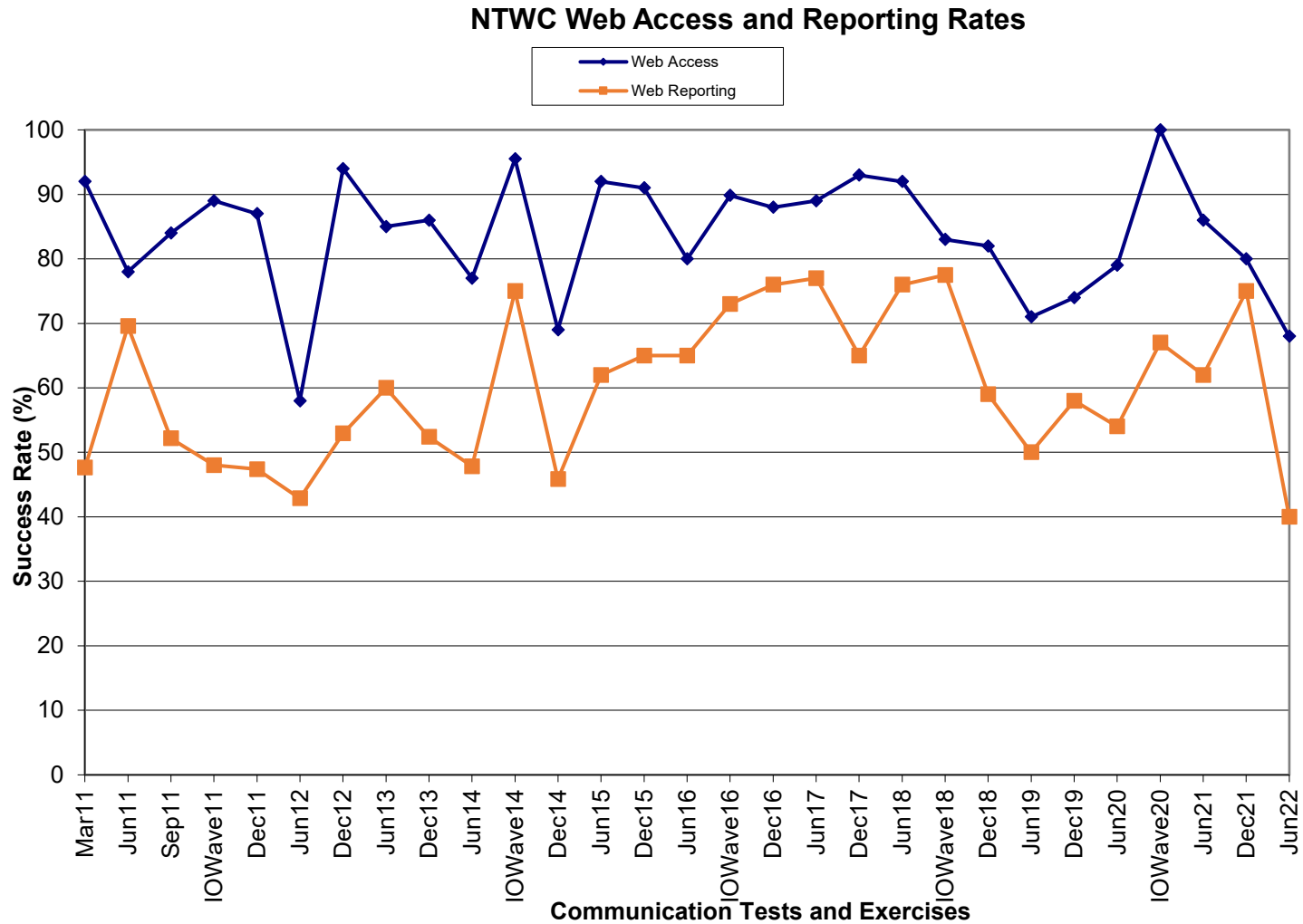
CURRENT STATUS
TSP KPIs (12Feb2022-23Feb2023)

TSP	Service Level 1 EQ Bulletins					Service Level 2 Threat / No Threat Bulletins		
	KPI 1 ET First EQ Bull Target: 10 mins (% met)	KPI 2 POD EQs GE M6.8 Target: 100%	KPI 3 EQ Mag Target: 0.3 (% met)	KPI 4 EQ Depth Target: 30 km (% met)	KPI 5 EQ Location Target: 30 km (% met)	KPI 6 ET First Threat Bull Target: 20 mins (% met)	KPI 7 POD Tsunami Waves Target: 100%	KPI 8 Tsunami Height Accuracy Target: Factor of 2
Australia	11.8 min (63.6%)	100%	0.11 (95.5%)	19.5 (68.2%)	18.9 (95.5%)	11.0 (100%)	n/a	n/a
India	9.7 min (89.5%)	100%	0.14 (94.7%)	19.9 (89.4%)	16.2 (89.4%)	26 min (0.0%)	n/a	n/a
Indonesia	10.2 min (70.0%)	100%	0.20 (81.0%)	28.9 (74.0%)	29.91 (74.0%)	33min (0%)	n/a	n/a

| Meets Target	Near Target	Misses Target

NOTES

KPI 2: No IO events >= M6.8

ICG/IOTWMS WG2 (2022-23) Highlights

- An updated version of 5.0 of the IOTWMS TSP Service Definition Document (Version 5) was approved during ICG/IOTWMS XIII Intersessional meetings.

- TSP services (not mandatory but on best effort and voluntary basis) to handle non-seismic and complex tsunami sources to meet the increasing demands. **(Strategic objective in 2.2.2.2)**

- TSP Australia ready to produce such TSP maritime bulletins, other two TSPs planned to implement.

- TSP India developed the Key Performance Indicator Application for ICG/IOTWMS.

- TSP Indonesia's new additional notification tool (WRS) tested in the 2 Comms Tests

- IOTWMS Comms Tests conducted June 2022 and Dec 2022

- Strategic Pathway proposed for WG2 at the WTAD Indian Ocean Webinar of 10 Nov 2021, aligning with the Tsunami Ocean Decade Program objectives.

Example of TSP Australia assessment for a non-seismic event

Assign threat area to all zones within 3 hours tsunami travel time.

NO THREAT
THREAT PASSED
THREAT
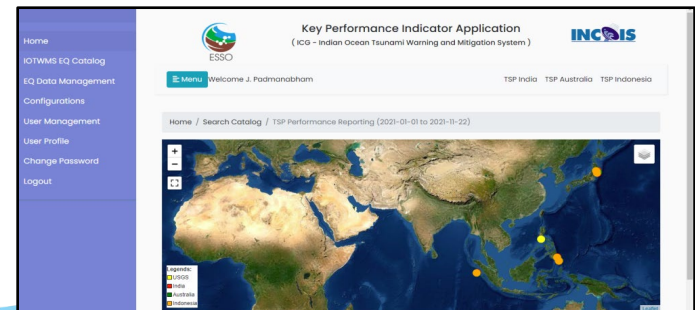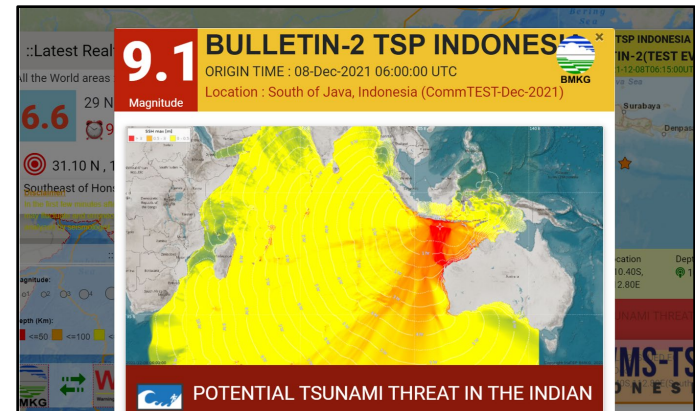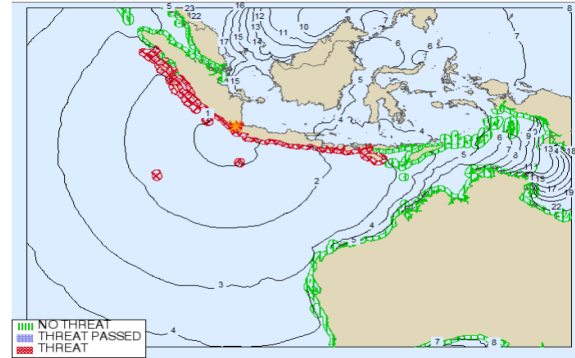
Strategic Pathway

WG2: Tsunami Warning, Detection and Dissemination

Focus

What/how

1
Expansion of existing and deployment of new technologies addressing observational gaps *

Nationally and Regionally

- Demonstration of the importance and identifiable value add of reducing the level of uncertainty of tsunami detection in support of warnings;
- Continuous expansion of existing and deployment of new innovated observational system to and demonstrate meet user needs;
- Continue advocacy through furthering of knowledge as the result of R&D, especially in seismic and sea level observing gaps
- National and regional exercises for both upstream and downstream warning components to demonstrate needed added value of data
- Actively pursue strategic partnerships with other relevant and potential national and international data and information providers

2
Wide expansion of real and near-real time data access and availability *

Nationally and Regionally

- Continuous advocacy on the importance of reducing the level of uncertainty of tsunami detection and warning through timely access to required data;
- Continuous advocacy to help ensure readiness of users of enhanced detection and warning systems
- Strongly advocate the importance of data sharing amongst the Member States as well as with the TSPs for more effective early warning, by monitoring and highlighting data gaps
- Development of MOUs on data access
- Actively pursue strategic partnerships with other relevant and potential national and international data and information providers

3
Access to data, tools and communication platforms, protocols and training to timely and effectively warn coastal and maritime communities *

Nationally and Regionally

- Demonstrations of the effectiveness of enhanced warnings reaching the level of local community
- Regular training on SOPs for early warning to demonstrate value add of data, tools and training itself
- Engage and integrate with other agencies, institutions, organization working on early warning as part of the multi-hazard approach.
- Actively pursue strategic partnerships with other relevant and potential national and international groups involved in R&D, data and warning tool development

*** Based on Tsunami Dedicated Program within UNDOS outcome**

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Commission

Strategic Pathway

WG2: Tsunami Warning, Detection and Dissemination

Focus

1
Expansion of existing and deployment of new technologies addressing observational gaps *

Nationally and Regionally

2
Wide expansion of real and near-real time data access and availability *

Nationally and Regionally

3
Access to data, tools and communication platforms, protocols and training to timely and effectively warn coastal and maritime communities *

Nationally and Regionally

Who

Engage and involve:

- National agencies responsible in TEWS and MHEWS
- Secretariat IOTWMS and IOTIC (RP);
- R&D Agencies, Universities, and other scientific organizations such as IUGG
- Commercial entities, such as ITU
- National and international data and information providers relevant to tsunami early warning.

Engage and involve:

- National agencies responsible in TEWS, MHEWS, R&D, Universities;
- Secretariat IOTWMS and IOTIC (RP);
- National and international authorities responsible for data access
- National and international data and information providers relevant to tsunami early warning

Engage and involve:

- NTWCs, DMOs (Nat & Local);
- Maritime authorities;
- Community leaders and DM/DRR Org.
- NGO or CSO in context of UITR.
- National and international early warning agencies, organizations, or institutions, i.e. WMO and others
- Scientific organizations such as IUGG
- Youth and young professionals platforms and organization

Based on Tsunami Dedicated Program within UNDOS outcome

Future Plans

- Help, coordinate and facilitate the development and operational implementation of tsunami detection, warning and dissemination systems and procedures within Multi-Hazard Early Warning System (MHEWS) frameworks and systems.

- To help and develop the capacity of Member States across the Indian Ocean to implement the IOC-UNESCO Tsunami Ready Recognition Programme (TRRP) or similar initiatives.

- Conduct the ICG/IOTWMS – IOWAVE23 Exercise in Sep-Oct 2023

- Focus on helping NTWCs to develop SOPs for non-seismic and complex source tsunamis

- Commemorate the 20th anniversary of the 2004 Indian Ocean Tsunami

- Pilot Training for Indian Ocean Facilitators under the IOC-UNESCO Tsunami Ready Recognition Programme

- Complete the UNESCAP NWIO Tsunami Project Phase 2c and initiate the Phase 3 on Indian Ocean Tsunami Ready communities for NWIO.

- Contribution on the Indian Ocean Capacity Development Through Ocean Teacher Global Academy Training Courses

- Facilitate the ongoing development and benchmarking of tsunami modelling, forecast and verification systems.

- Contribute to the conduct of regular exercises and communication tests of the IOTWMS.

Thank You