ICG/PTWS XXIX Virtual Meeting
1, 2, 7, & 8 December 2021 2200-2400 UTC

PTWS Working Group 2 – Tsunami Detection, Warning and Dissemination

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Working Group 2 Members (from ICG/PTWS-XXVIII)

~~**Lara Bland** – Chair~~
Chip McCreery – Vice Chair

Ken Gledhill (New Zealand)
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Afiq Zhofri Abdul Razakr (Malaysia)
Mathew Moihoi (Papua New Guinea)
Chip McCreery (USA)
Chris Ryan (Australia)
Arona Ngari (Cook Islands)
Laura Kong (USA)
Jo Guard (New Zealand)
Hiroshi Inoue, (Japan)
Laura Bland (New Zealand)
Alexei Gorbatov (Australia)
Lameko Talia (Samoa)
Zhiguo Xu (China)
Morris Harrison (Vanuatu)
Viviana Dionicio (Colombia)
Garry Rogers (Canada)
Ryosuke Sakakibara, (Japan)
Yuelong Miao (Australia)
Adrienne Moseley (Australia)
Jonathan Bathgate (Australia)
Timothy Melbourne (USA)
Mike Angove (USA)
Bill Fry (New Zealand)

WG-2 Terms of Reference

1. Develop, coordinate and enhance operational **implementation of interoperable tsunami threat information products and services**.
2. Undertake studies to determine warning **requirements for seismic and sea level data**.
3. Monitor and report on the **performance of key observational, warning and communication system components**.
4. Contribute to the conduct of **regular exercises and communication tests** of the PTWS.
5. **Identify areas of priority for action** following assessments, communications tests, exercises and real tsunami events.
6. **Develop and maintain relevant documentation**, such as the PTWS Users Guide.
7. **Provide advice to the International Tsunami Information Centre (ITIC)** on educational materials and for capacity building about the warning systems and services.
8. Help **strengthen the capacity and capability of Member States**.

Intersessional Progress

Much of this work is carried out in the course of regular business by Member States and their NTWCs and related agencies, as well as by the TSPs.

- Exercises
- Communication Tests
- Monitor Warning Components
- Develop and Maintain Documentation

Some specific work was identified to be carried out by three WG-2 Task Teams:

- Task Team on Seismic Data Sharing in the South West Pacific
- Task Team on Minimum Competency Levels for National Tsunami Warning Centre Operational Staff
- Task Team on Integrated PTWS Sensor Networks for Tsunami Detection and Characterisation

Task Team on Seismic Data Sharing in the SW Pacific

1. Advocate seismic data sharing in the region.
2. Advise South West Pacific countries on data sharing protocols, techniques and technologies.
3. Work with South West Pacific Countries and donors to ensure a common data sharing policy.
4. Encourage South West Pacific Countries with existing or planned broadband seismograph stations to join the International Federation of Digital Seismograph Networks (FDSN), use the standards developed by the FDSN for data exchange and take advantage of the data archiving provided by the FDSN

Task Team on Seismic Data Sharing in the SW Pacific

There are still significant gaps that affect the rapid detection and characterization of earthquakes in the SW Pacific. The work of this Task Team needs to continue.

ORSNET Seismic Station Status as of 11/25/2021

Country	# Stations Sending Data	# Stations Not Sending Data
New Caledonia	4	3
Vanuatu	8	5
Solomon Islands	4	0
Fiji	0	6
Tonga	0	2
Samoa	0	5
Papua New Guinea	0	9

Task Team on Minimum Competency Levels for NTWC Operations Staff

1. Establish the minimum competency levels required for NTWC operations staff.
2. Establish a framework for the required competencies required by the roles of a NTWC.
3. Establish what training is required to ensure NTWC staff meeting minimum competency levels.
4. Investigate and document what schemes are currently in existence and what guidelines and principles can be adapted for this purpose.

Task Team on Minimum Competency Levels for NTWC Operations Staff

A draft document, "***National Tsunami Warning Centre Competency Framework***", was produced and distributed at the last ICG meeting and is available on the website of that meeting for use by Member States.

The document has not been revised further.

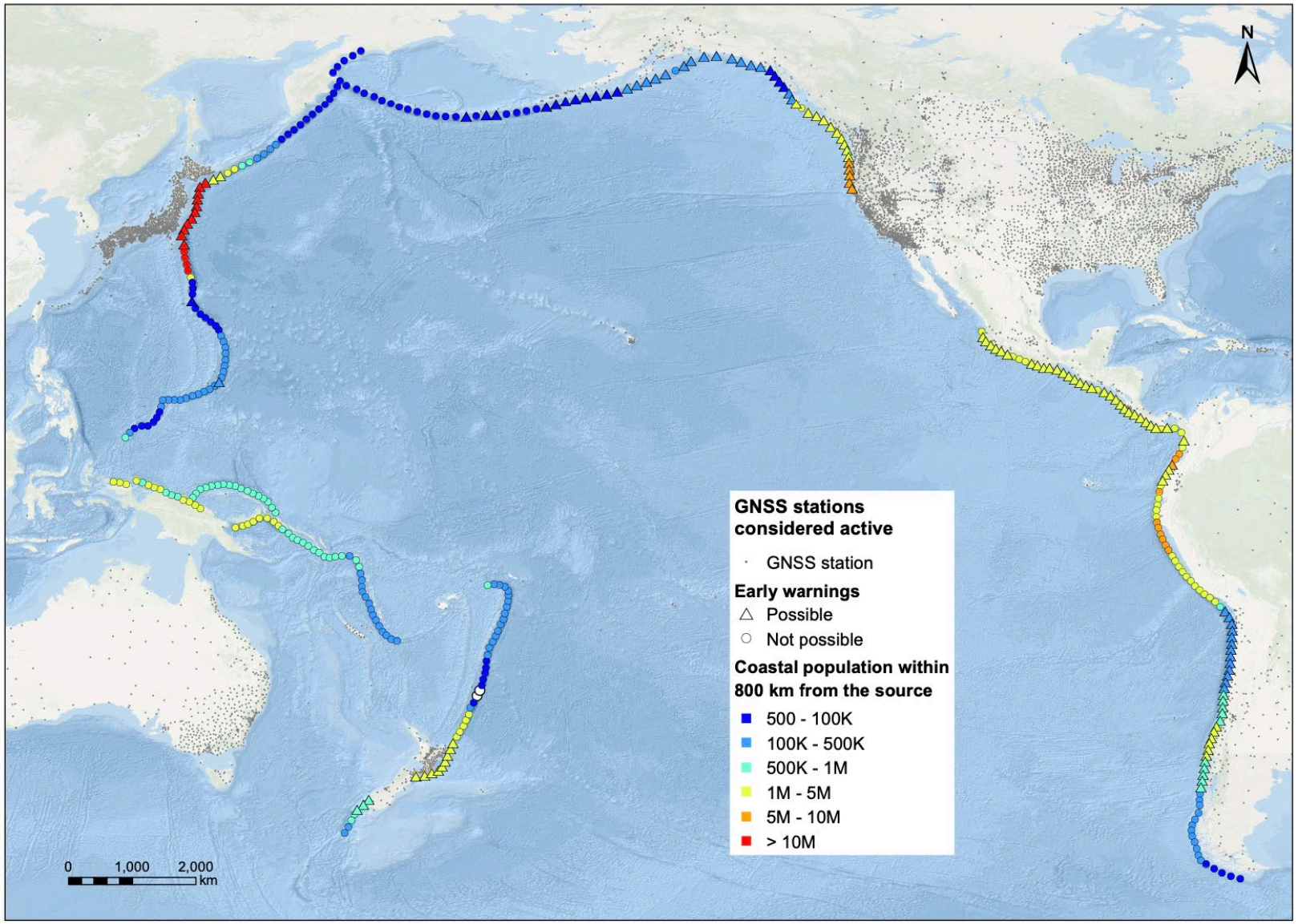
Task Team on the Integrated PTWS Sensor Networks for Tsunami Detection and Characterisation

1. Developing a methodology for gap and sensitivity analysis that combines multiple sensing technologies for tsunami detection and characterisation.
2. Integrating emerging techniques and sensor technologies (e.g. better use of tide gauges; GNSS technology and processing; sensors on telecom cables) with the existing sensing network to meet tsunami warning service requirements.
3. Where possible, include cost-benefit analysis of the potential technologies being considered.

Task Team on the Integrated PTWS Sensor Networks for Tsunami Detection and Characterisation

1. Implemented a framework for risk-based assessment of multi-sensor PTWS network early warning potential
2. All standard subduction zone sources are relatively well sampled by the global weak motion seismic array. Regional (<20 minute) w-phase solutions with reasonable uncertainties (<Mw0.3) should be possible in all areas.
3. GNSS inversion based TEW was assessed with stations currently openly available for streaming, those that have “reported” in the last year (considered active) and all stations that have reported data in the past. Assuming real-time availability of active stations that have reported within the last year, GNSS coverage is typically sufficient for GNSS based local TEW in North and Central America, central Japan, New Zealand and Chile. The remainder of the circumpacific lacks sufficient density of proximal GNSS stations for reliable GNSS-based TEW.
4. Where proposed, especially when deployed parallel to subduction zones, submarine SMART cables present a viable data platform to support future generations of local TEW.

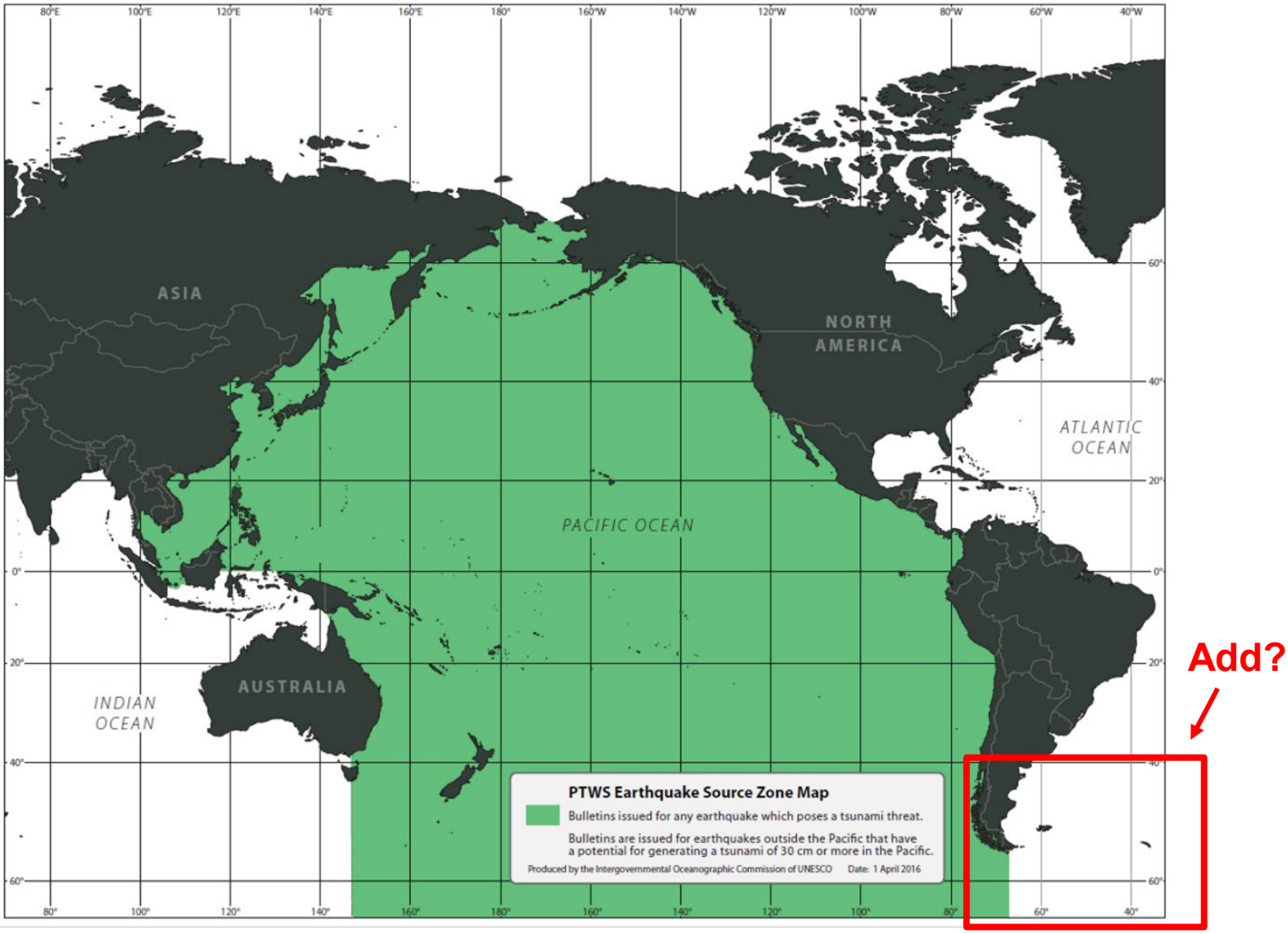
Task Team on the Integrated PTWS Sensor Networks for Tsunami Detection and Characterisation



Unfinished WG-2 Tasks from Recommendation ICG/PTWS-XXVIII.2

- Revise The Operational User's Guide for the PTWS (IOC Technical Series No. 87)
- Revise all TSP User Guides with a similar structure and format to be agreed upon by WG-2 (by June 30, 2019).
- Review and approve all the revised TSP User Guides (by June 30, 2020)
- Review and provide any update to the document "Local-Source Tsunami Response Best Practice".

PTWS Earthquake Source Map



Decisions for this ICG Meeting (ICG/PTWS-XXIX)

- Continue WG-2 (any changes to its TOR)
- Continue or Sunset the WG-2 Task Teams (any changes to their TOR)
- Add any WG-2 Task Teams (e.g., a TSP Task Team)
- Complete all WG-2 Unfinished Tasks
- Identify any New WG-2 Tasks
- Concur or Not regarding an Extension of the Earthquake Source Zone to include the Scotia Arc

Thank You

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