

Recommendation ICG/PTWS-XXII.1

**WG 1: SEA-LEVEL MEASUREMENT, DATA COLLECTION AND EXCHANGE**

The Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System,

**Recognizing** the need for operational systems to monitor the health and status of contributing systems,

**Recognizing** the importance of standardization in sea-level data collection, exchange and communication to ensure the interoperability of the tsunami warning system,

**Recognizing** the need to design and implement the PTWS sea-level observing network to meet the requirements for effective tsunami warning,

**Decides** to continue the intersessional Working Group 2 on Sea-Level Measurement, Data Collection and Exchange with Terms of reference agreed at PTWS-XXI, Recommendation ICG/PTWS-XXI.2;

**Noting** the parallel efforts by the other related Working Groups under the other ICGs,

**Recommends** that the Working Group on Tsunamis and Other Ocean Hazards Warning and Mitigation Systems (TOWS-WG) organise in 2008 a sea-level design and implementation workshop, involving similar Working Groups from the other ICGs, to:

- Identify warning system data requirements
- Review techniques and guidelines for network design
- Undertake sensitivity analyses
- Review and finalise standards for metadata, data collection and reporting
- Develop common performance metrics;

**Requests** the TOWS Working Group to consider resources and organisational arrangements required to support development and implementation of tools and procedures to provide operational monitoring of the functionality of the sea level observing network for all ICGs.

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Financial implications: None

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PTWS-XXII WG 2:

Formerly PTWS-XXI WG 5:

Working Group Five on Interoperability of Regional, Sub-regional and National Tsunami Warning Systems in the Pacific

Objectives:

- Coordinate the development and operational implementation of warning systems in the Pacific through:
  - advice on the modalities of operation, methods and standards for the development and issuance of warnings, and requirements in terms of coordination and operating within a multi-hazard approach,
  - advice on arrangements for redundancy and back-up arrangements,
  - support the update of the PTWS Communications Plan.

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Chair: USA

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Annex to Recommendation ICG/PTWS-XXII.6

**WG 4: Terms-of-reference  
for the Sub-Regional Working Group on Tsunami Warning and Mitigation  
in the Southeast Pacific Region**

1. to evaluate capabilities of countries in the South East Pacific Region for providing end-to-end tsunami warning and mitigation services,
2. to ascertain requirements from countries in the Southeast Pacific Region for the tsunami warning and mitigation services,
3. to promote and facilitate tsunami hazard and risk studies in the region,
4. to facilitate cooperation in the establishment and upgrading of seismic and sea level stations and networks and communication systems in the region, and their interoperability in accordance with ICG/PTWS requirements,
5. to improve the education programs with a regional criteria based on the regional social, cultural and economical reality,
6. to facilitate capacity building and the sharing of tsunami information in the region, including the free and open exchange of data,

The Group will be composed of representatives from Colombia, Ecuador, Peru and Chile, with a chairperson and a vice-chairperson who will be defined by the end of October 2007.

**WG 5: Terms-of-reference  
for the Sub-Regional Working Group on Tsunami Warning and Mitigation  
in the Southwest Pacific Region**

1. to evaluate capabilities of countries in the Southwest Pacific Region for providing end-to-end tsunami warning and mitigation services,
2. to ascertain requirements from countries in the Southwest Pacific Region for the tsunami warning and mitigation services,
3. to facilitate tsunami hazard and risk studies in the region,
4. to facilitate cooperation in the establishment and upgrading of seismic and sea level stations and networks in the region, and the interoperability of these systems in accordance with ICG/PTWS requirements,
5. to facilitate capacity building and the sharing of tsunami information in the region, including the effectiveness of ICG/PTWS services and the free and open exchange of data,
6. to support the further development of the virtual centre of expertise in a multi-hazards context within SOPAC in line with the regional Early Warning Strategy,
7. to facilitate the inclusion of tsunami hazard and response information into curricula, and development and dissemination of educational materials,

The Group will be composed of representatives from member countries of SOPAC as members and observers including France and chaired by the Representative of New Zealand, with vice-

chairpersons from Fiji and Samoa. SOPAC, with assistance of Australia and New Zealand could be asked to consider supporting the activities of the Group by providing logics and secretarial services.

**WG 3: Terms-of-reference  
for the Sub-Regional Working Group on Tsunami Warning and Mitigation  
on the Central American Pacific Coast**

1. To assist the Central American countries in the development, improvement and implementation of their National Tsunami Warning and Mitigation Systems, and the countries which are becoming new members of ICG/PTWS in their integration into the ICG/PTWS,
2. To recommend CEPREDENAC to determine whether the National Tsunami Warning Centres of Nicaragua or El Salvador (or of both countries cooperating) could act as interim Regional Tsunami Warning Centre emitting warnings to all Central American countries,
3. To invite CEPREDENAC to consider the implementation of a Technical Committee for the Development of Regional Tsunami Warning and Mitigation Systems,
4. To implement a regional communications and warning plan,
5. To facilitate Tsunami Hazard and Risk studies in the Central American Region,

The Group will be composed of representatives from Nicaragua, El Salvador, Guatemala, Costa Rica, representatives of Honduras and Panama (as soon as they finalized the formal procedure of joining ICG/PTWS), and chaired by the representative from Nicaragua.

Recommendation ICG/PTWS-XXII.2

**WG 6: WORKING GROUP ON PACIFIC EMERGENCY COMMUNICATIONS**

The Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System,

**Recalling** that an effective system means all persons in vulnerable coastal communities are prepared to respond appropriately, and in a timely manner upon recognition that a potentially destructive tsunami may be approaching,

**Recognizing** the importance of reliable and timely warnings in the event of tsunami as the key enabler for people to be able to respond,

**Noting** there is wide range of technologies with potential application to early warning, including the WMO GTS, AFTN, EMWIN, RANET, and satellite, radio, siren, mobile, and traditional methods of alert dissemination,

**Further noting** that a number of Pacific communications initiatives are already ongoing but not yet tsunami warning specific,

**Having considered** the high interest from Member States to enhance their tsunami warning dissemination services as expressed during the intersessional period previous and during the ICG/PTWS-XXII,

**Expressing** the need to share these technologies widely in order to enable Member States to implement robust and redundant communications systems for rapid dissemination of early alerts,

**Decides** to establish an Inter-sessional Working Group on Pacific Emergency Communications with the following Terms of Reference:

1. To encourage member states to develop arrangements for the transmission and receipts of tsunami warnings alerts from international centres, and the dissemination of alerts and public safety actions within their countries,
2. To provide a forum to identify methods and systems currently available and planned for the future for alert dissemination within Member States, and internationally across the Pacific, and between oceanic basins,
3. To consult with National Tsunami Warning Focal Points to determine appropriate requirements for the dissemination of alerts from the Tsunami Warning Centres and exchange of information for the confirmation of reception;

**Recommends:**

1. That the Group be composed of Canada, Chile, Ecuador, New Zealand, Nicaragua, Samoa, USA, PTWS communication providers, and through nomination by the countries, National Tsunami Warning Focal Point and the emergency managers from interested Member States, and representatives from non-PTWS countries as observers,
2. That the ICG/PTWS Secretariat amends the National Report Template to specifically include Warning Dissemination Arrangements;

**Further recommends** that this work be carried out by email and other appropriate means, and that the Chair of the Group, that will be defined by the end of October 2007, provide a status report at the time of the Officers meeting in early 2009.

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Financial implications: None

Recommendation ICG/PTWS-XXII.8

**WG 7: WORKING GROUP ON RAPID NEAR-FIELD RECOGNITION OF TSUNAMIGENIC EARTHQUAKES AND ASSOCIATED TSUNAMIS**

The Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System,

**Acknowledging** there is an emergence of new techniques and technologies that may result in rapid near-field recognition of tsunamigenic earthquakes and associated tsunamis,

**Noting** significant support from Member States during the Session, and as evidenced in the formation of sub-regional Working Groups for the South West Pacific, South East Pacific Coasts, Central America Pacific Coast which have a focus on the rapid detection and evaluation of potentially tsunamigenic local earthquakes,

**Recognizing** the desirability of sharing progress in these promising technologies amongst Member States,

**Decides** to establish an intersessional Working Group on rapid near-field recognition of tsunamigenic earthquakes and associated tsunamis with the following Terms of Reference:

1. To facilitate the exchange of information on rapid near-field detection techniques being used, evaluated or proposed by Member States,
2. To compile and disseminate information on rapid near-field detection techniques being used, evaluated or proposed by Member States,
3. To provide guidance and advice to Member States considering using techniques for rapid near-field detection;

**Recommends** that:

- (i) the Group will be composed of Member States and other interested countries, and be chaired by the representative from Canada,
- (ii) discussions will be conducted mainly through electronic means,
- (iii) it shares its progress regularly throughout the inter-session period through the ITIC and its mechanisms for technical coordination.

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Financial implications: none

Recommendation ICG PTWS-XXII.4

**WG 8: PACIFIC-WIDE TSUNAMI EXERCISE**

The Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System,

**Noting** that the Indian Ocean tsunami of 26 December 2004 brought to the attention of the world the urgent need to be more prepared for such events,

**Understanding** that simulating scenarios and learning lessons from such exercises is an effective way to improve preparedness,

**Recognizing** that the PTWS requires regular testing and review,

**Recommends** that the second end-to-end tsunami exercise be carried out for the Pacific Ocean during the third quarter of 2008, with a final report of results written before the next ICG Session;

**Decides** that a Task Team be formed to design and carry out the exercise and bearing in mind the following elements:

- (i) Membership of the Task Team for organizing the exercise should include representatives from PTWC, WC/ATWC, NWPTAC, Australia, New Zealand, Peru, Republic of Korea, the Russian Federation, and ITIC
- (ii) The exercise should simulate each country being put into a warning situation requiring decision-making and be taken to the step just prior to public-notification
- (iii) The scenario to be exercised will be a destructive tsunami generated off the northeast coast of Japan and crossing the Pacific. It will be simulated with notification by PTWC and other warning centres such as WC/ATWC and the NWPTAC to the designated contact points and national emergency authorities of the Member States responsible for tsunamis
- (iv) The scenario will be conducted in real time
- (v) Member States be strongly encouraged to participate
- (vi) Due care be taken so as not to inadvertently alarm the public; a most conservative approach may be best, considering this will only be the second such Pacific-wide exercise
- (vii) Member States share information about the Pacific Wave 06 exercise as well as past National or Sub-National tsunami exercises prior to this exercise
- (viii) Participating Member States be required to share information regarding the procedures applied and lessons learned during the exercise
- (ix) The details of the exercise, as well as its set of outcomes and performance measures be defined in advance, taking into consideration when possible, the results of the Member State assessments; outcomes and performance measures should be collected using a standard instrument and at a minimum include:
  - a. How each Member State received the warning (e.g., GTS, fax, e-mail)?
  - b. Elapsed time between when the bulletin is issued and when it is received and recognized
  - c. What assessment tools are applied for decision-making about evacuations?
  - d. How the public would be notified and instructed?

- e. Elapsed time until the public would be notified and instructed
  - f. Summary of each Member State's National Emergency Plan for tsunamis, including any chapters on exercises
  - g. Feedback from stakeholders regarding their performance and the performance of the information providers
  - h. Media response;
- (x) ICG/PTWS National Contacts will be responsible for collecting results of their Member State and providing them to the Task Team by 1<sup>st</sup> December 2008
- (xi) A formal letter announcing the exercise and providing its details should be composed by the Task Team and sent by the IOC as a Circular Letter to TNC and TWFP no later than 1<sup>st</sup> January 2008

This exercise is the second exercise in a pattern of recurring exercises to be conducted by the ICG/PTWS;

**Requests** that resources be made available from the IOC and Member States to facilitate organizational and follow-up meetings, and a contractor to help facilitate the debriefing process and quickly assemble the report.

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Financial implications: US\$ 5,000 in 2008