

Pacific Meteorological Council

Pacific Islands Communications Infrastructure Panel

Draft Terms of Reference

1. (Version: 12 August 2017) Introduction

- 1.1 The Pacific Island Communications Infrastructure (PICI) Panel was established to provide technical advice to the Pacific Meteorological Council (PMC) on matters related to the observational and communications infrastructure supporting the communication and dissemination of national and regional hydro-meteorological and oceanographic/tsunami (seismic and sea level) observations, forecasts, and warnings within the Pacific islands region. The PICI panel previously existed as the Radio and Internet for the Communications of Hydro-Meteorological and Climate Related Information (RANET) ad-hoc working group on communications that was set up in 2003 at the Regional Meteorological Directors Meeting (RMSD) in Va'vau, Tonga.

2. Purpose

- 2.1. With a view towards strengthening national and regional multi-hazard early warning and prediction for high impact severe weather, tropical cyclone, marine (storm surges), and tsunami events, the purpose of the PICI Panel is to provide technical advice and coordinating the implementation of activities recommended by the PMC or as directed by PMC and related to: (1) infrastructure supporting communications and dissemination of national and regional hydro-meteorological and oceanographic/tsunami (seismic and sea level) observations, forecasts, and warnings, (2) identifying priorities and coordinating work related to planning and implementation of observational and communications systems, facilities, and equipment. The PICI Panel will identify priorities, gaps and challenges and promoting the importance of the timely delivery of warnings and alerts for the successful operations of Multi-Hazard Early Warning Systems (MHEWSs) and Multi-Hazard Information Systems (MHISs), as prescribed in the Pacific Islands Meteorological Strategy (PIMS) 2017-2030, and other international and regional frameworks (e.g. such as the Sendai Framework for Disaster Risk Reduction and the S.A.M.O.A Pathway).
- 2.2. The PICI Panel may advise relevant agencies and entities, as required by PMC, at the national and regional level that are providers of national telecommunications, Internet, radio networks VHF, HF, FM, and satellite based observational and communications systems, as well as regional and national telecommunications regulators, regarding licensing issues that contribute to the improvement of the infrastructure supporting national meteorological and hydrological services and others with multi-hazard early warning and prediction responsibilities (e.g. NDMO, Port Authorities, Fisheries, Geological and other national services, including those focusing on vulnerable groups and people with disabilities in communities).
- 2.3. Engage with the WMO RAV Working Group on Infrastructure to ensure that the WIGOS and WIS workplan are coordinated and aligned

3. Role and Responsibility of the PICI Panel

3.1. The PICI Panel will provide technical advice to the PMC on communications and observational infrastructure for the following topics: Observing Systems including implementation of WMO Integrated Global Observing System (WIGOS); Network Coverage (marine, terrestrial, space); Observing System Operation and Maintenance; Communications including implementation of WMO Information system (WIS), and Capacity development for observing and communication systems from the PIMS (2017-2030) Pacific Key Outcome (PKO) 8 (Integrated Observations and Communications); and NHMS roles and responsibility and institutional arrangements under MHEWS; Hazard detection, monitoring and data sharing and forecasting; Disseminating timely and authoritative warnings from the PIMS (2017-2030) PKO 4 (Strengthened NHMS capacity to implement Multi-Hazard Early Warning Systems (MHEWS) for tropical cyclones, coastal inundation and tsunamis)

- a) Establish linkages and coordinate with international and regional organizations such as WMO, UNESCO-IOC, JCOMM, World Food Programme (WFP), Pacific Islands Telecommunications Association (PITA), the Pacific Disability Forum, Fisheries Forum Agency (FFA), Pacific Islands Forum Secretariat (PIFS), SPREP, University of the South Pacific (USP), the Pacific ICT Regulatory Resource Center (PIRRC), the University of Hawaii, and the Secretariat for the Pacific Community (SPC) that focus on telecommunications services and observational systems for MHEWS and MHISs, and last mile service product providers;
- b) Strengthen the coordination, continuity and integration of current and future land-based and wireless communications and dissemination initiatives which facilitate one-way and two-way receipt of hydro-meteorological and tsunami forecasts and warnings to the last mile/kilometre at the community, national and regional levels;
- c) Strengthen the basic and core functions and capabilities of Pacific Islands National Meteorological and Hydrological Services (NMHSs) for robust and sustained data and information accessibility, collection, management, analysis, production and dissemination of data products and services;
- d) Coordinate the development and implementation of a regional WIGOS plan and evaluate existing national and regional plans and activities aligned to WIGOS;
- e) Coordinate assistance to maintain and extend coverage and quality of observation networks; support the improvement of quality of data and increased density of spatial data coverage in the region; and promote Reference Stations to support data quality;
- f) Using the WIGOS Observing systems capability analysis and review tool (OSCAR), support the rolling requirements review process by stocktaking and evaluation of existing national and regional observation networks, including survey of existing synoptic stations and future priorities.
- g) Assist NMHSs to establish and improve MHEWS, and enhance integration across government agencies and communities, and help develop operating procedures and back-up systems for MHEWS;
- h) Formalize agreements with NMHSs for the exchange of meteorological information and data;

- i) Promote and coordinate a regional development and implementation plan for WIS; coordinate integration of WIS and WIGO; and coordinate the development of a regional data policy to assist NMHS. Including a plan for data rescue and preservation;
- j) Facilitate the creation of a regional instrument calibration centre and a sustainable mechanism (including funding) for maintenance and calibration of observation networks around the Pacific
- k) Explore avenues and deploy modes of multi-way communications and feedback between provider(s) of hydro-meteorological, marine, oceanographic, and geological data and services and users of these services to enhance the education and outreach to communities and individuals;
- l) Coordinate with the PIMOS Panel to support improvement of the infrastructure used for national and regional tsunami monitoring, early warning systems, and standard operating procedures, and develop relevant awareness programs, including support for and coordination with the UNESCO/IOC PTWS Regional Working Group and ORSNET on Tsunami Warning and Mitigation in the Southwest Pacific;
- m) Coordinate with telecommunication regulatory authorities to develop policies/legislation to improve the dissemination of warnings for natural disasters, to insure adequate infrastructure to meet the requirements for MHEWS and MHISs before, during, and after significant national hazard events, and in particular as they impact the dissemination of information to vulnerable communities;
- n) Explore options to improve and expand early alert and dissemination messages for hydro-meteorological and tsunami warnings via mobile phone carriers using Short Messaging Systems (SMS), Cell Broadcast, and VHF line-of-site communications, especially in remote areas where gaps in infrastructure are prevalent;
- o) Assess, evaluate, and coordinate with national and regional disability agencies, forums, and advocacy groups to improve on alert and dissemination of hydro-meteorological and tsunami warnings to the disabled and most vulnerable populations;
- p) Support efforts of the RANET Pacific Communications Project and others who contribute to the ability of NMHSs to receive terrestrial and satellite data and observations, and multi-hazard dissemination of hydro-meteorological and tsunami products and warning messages;
- q) Work with national and regional telecommunications regulators, companies and providers to insure frequencies are allocated and prioritized for use by NMHSs, etc.;
- r) Coordinate with the appropriate WMO RA-V working bodies, particularly the RA-V Working Group on Infrastructure and its Task Teams. Engage the RA-V the Task Team on Satellite Utilization, to insure Pacific Island NMHSs requirements are being taken into consideration to the operators of Geostationary and Polar Orbiting Meteorological Satellites that cover the Pacific Region.
- s) Coordinate with other appropriate data providers to the PMC Members area such as Satellite operators like the Japanese Meteorological administration (JMA) and the National Oceanic & Atmospheric Administration (NOAA) to improve data and information availability and address PMC Members' requirements and assist NMHS' to receive data from Himiwari and GOES-West satellites;

- t) Assist PMC Members' with deployment and implementation of new or updated technologies and capabilities such as the Common Alerting Protocol (CAP).
- u) Maintain a current/up-to-date inventory of communication systems, where they are operational, and the requirements they meet.
- v) Maintain current/up-to-date catalogue of PMC Members' information (data and Products) requirements as well as what that produce.
- w) Develop and maintain an information plan that addresses PMC Members' requirements, systems and arrangements to meet the issues contained in this ToR.

3.2 The PICI organizational arrangements shall include:

- a) The PICI Panel shall meet as required, taking advantage of opportunities that arise and connecting remotely when no related meetings or funds are available;
- b) The regular reporting to the PMC members on the progress of the PICI Panel;
- c) PICI Panel to draft and update its Implementation (Action) Plan; and
- d) PICI Panel will operate in line with WMO Weather Information System, the WMO Integrated Global Observing System (WIGOS), and the World Weather Watch Programme.

4. Membership

- 4.1. The PICI Panel core membership is comprised of Fiji, Federated States of Micronesia, Tonga, Samoa, Cook Islands, Solomon Islands, Vanuatu, Papua New Guinea, Niue, Tuvalu, USA, WMO RAV Working Group on Infrastructure Task Team on Satellite Utilization, SPREP, NIWA, MetService of New Zealand, UNESCO-IOC, SPC, University of Hawaii, the USP, and the World Food Programme.
- 4.2. The PICI Panel will start its work with Samoa as its Chair, as recommended at the inaugural Panel meeting in Honiara, on August 24, 2016, with Vice Chairs from the USA and the Solomon Islands.
- 4.3. The PICI Panel will appoint its Chair and Vice-chair(s) as necessary.
- 4.4. The PICI Panel may invite experts either from its PMC members, partners, or national telecommunications organizations, mobile phone carriers, and others to its meetings, discussions and Panel activities including Task Teams.
- 4.5. The PICI Panel may establish Task Team(s) to carry out specific time bound task(s) for limited time periods.

4.6. Meetings of the PICI Panel shall be coordinated and convened by its Chair, with the support of SPREP/WMO/Pacific Meteorological Desk Partnership (PMDP).

5. Review and Approval of Terms of Reference

5.1. The PICI Panel may develop recommendations to the PMC to revise the Panel's TOR.

5.2. The PMC will be invited to consider and approve the PICI Panel TOR and related amendments.

5.3. Annex 1: PICI Panel Core Members

PMC-3 Decision

PMC Working Group	PICI Panel
Members:	Fiji, Federated States of Micronesia, Tonga, Samoa, Cook Islands, Solomon Islands, Vanuatu, Papua New Guinea, Niue, Tuvalu, USA, WMO, SPREP, RA-V, UNESCO-IOC, SPC, the University of Hawaii, the World Food Programme, and the USP
Chair:	Samoa
Vice Chairs	USA, Solomon Islands
Secretariat	SPREP/WMO/PMDP

First Draft 19 September 2016 by Ed Young, UCAR/USA

Comments 15 October 2016 by Salesa, SPREP

Comments 03 November by the PICI conference call

Comments 07 March 2017 by Ginger, University of Hawaii

Comments 08 March 2017, Fred Branski, US NWS Office of International Affairs, WMO CBS Coordinator for DRR

Comments 10 March _Ausetalia Titimaea, Samoa Met, PICI Chair

Comments 24 March _Ausetalia Titimaea, Samoa Met, PICI Panel Chair

Final Draft 12 August 2017, by ED Young, UCAR/USA, Graham Elley, NIWA, and the PICI Panel