



REPORT:

REGIONAL PACIFIC EMERGENCY TELECOMMUNICATIONS CLUSTER (ETC) WORKSHOP

Port Vila, Vanuatu | 12-14 June 2017

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1. INTRODUCTION

The second Regional Pacific Emergency Telecommunications Cluster (ETC) Workshop took place in Port Vila, Vanuatu from 12-14 June 2017. Held jointly with the Logistics Cluster (who met from 12-16 June), the agenda included combined sessions with ETC and Logistics Cluster participants discussing themes of common interest, and separate cluster-specific sessions where technical areas were discussed in more depth.

Following from the first Regional Pacific ETC workshop held in Samoa in July 2016, this year's ETC workshop brought together regional and national stakeholders including national disaster management offices (NDMOs), telecoms regulators and line ministries, the private sector, NGOs, Red Cross, universities, SPC, meteorological bodies, military and police.

The workshop focus was to support national strengthening in emergency telecommunications starting with country presentations, followed by sessions covering a variety of topics relating to communications. The workshop strived to provide an open space for discussion and debate on emergency telecommunication themes, and provide an opportunity for participants to forge closer ties with counterparts in the Pacific.

All workshop presentations can be accessed [here](#).

2. BACKGROUND

In September 2015, the United Nations World Food Programme (WFP) opened an office in Suva, Fiji. The WFP Fiji Office supports preparedness in three sectors: emergency telecommunications (ETC), logistics, and food security. The Pacific ETC has targeted its support - at varying levels - in five countries: Fiji, Samoa, Solomon Islands, Tonga and Vanuatu. In the future, it is anticipated that this support will extend to more countries including the North Pacific.

In July 2016, WFP convened the inaugural Regional Pacific Emergency Telecommunications Cluster Workshop in Apia, Samoa. The workshop provided a platform for discussion on emergency telecommunications at a national and regional level. With coordination as a priority area of the ETC, bringing together emergency telecoms stakeholders is an important function of the regional cluster.

Since the last Regional Pacific ETC Workshop, progress has been made to boost emergency telecommunications preparedness in the Pacific. Countries are running projects and initiatives to deploy new systems and strengthen existing ones. Support by WFP as lead of the Pacific ETC has included national cluster strengthening, technical advisory and assessments, training and infrastructure upgrades. In 2016, the Pacific ETC also worked with the Government of Fiji for the TC Winston response.

3. OBJECTIVES

The main objectives of the 2017 Pacific ETC Workshop were to:

- Provide a platform for discussion on how regional technical support can better support the national level
- Give the floor to a diverse group of presenters from Pacific Island countries and agencies
- Learn about technical projects and innovations in the Pacific relating to disaster communications
- Uncover common areas of interests and potential collaboration.

4. WORKSHOP PLANNING

a. Location

The 2017 workshop was held in Port Vila, Vanuatu. The idea behind rotating the regional cluster workshop to different host countries is to showcase the work of the host country, expand participation from actors in the host country, and provide an opportunity for workshop participants to share and learn in a new setting.

b. Participants

Participation varied during the three days, with approximately 35 participants joining the ETC sessions. Various factors were taken into consideration when inviting participants to the 2017 workshop. An important criteria was that participants should be involved or have an interest in emergency telecommunications preparedness and response in the Pacific. The different types of organisations represented, included:

- Government (line ministries, national disaster management offices, meteorological services)
- Regulatory bodies
- Private sector companies
- International NGOs and UN agencies
- Faith-based organisations
- The Red Cross
- CROP agencies
- Universities.

The joint workshop included representatives from:

- Australia, Fiji, New Zealand, Samoa, Solomon Islands, Tonga, Vanuatu, *WFP representatives from Rome (WFP Headquarters) and Bangkok (WFP Asia Pacific Bureau).*

c. Venue

Following an assessment of workshop venues available in Port Vila, Warwick Le Lagon Resort was selected as the workshop venue due to its optimal location and facilities to support the joint workshop. The different spaces - both

formal and informal - provided by the venue was an ideal environment to sit together to exchange ideas, build relationships and learn. This was particularly important given it was a joint workshop where participants were split across sessions (ie. emergency telecommunications and logistics).

5. WORKSHOP STRUCTURE

The workshop began with country-led presentations from Fiji, Samoa, Solomon Islands, Tonga and Vanuatu, sharing both an emergency telecommunications and logistics perspectives. This was complemented with summary reports from the WFP Regional Cluster Coordinators (ETC and Logistics) on the progress achieved at the regional level. Starting with country presentations from the outset provided a solid basis moving forward, and enabled countries to absorb activities undertaken (and in some cases lessons learnt) from other Pacific Island Countries (PICs). It also provided a platform to understand the priorities of different countries and areas of opportunity.

The workshop was designed to give time for agencies and participants to exchange their ideas and views through:

- Formal presentations
- Demonstrations
- Group work
- Breaks (tea, lunch and dinner)

Some sessions were held jointly between emergency telecommunications and logistics where all workshop participants were brought together in plenary. The plenary sessions included the country presentations, the panels on media and private sector, and a joint session on training.

The themes covered during the three days of the ETC Workshop included:

- Civil-Military-Police Interaction
- Media & Reaching the 'Last Mile'
- HF & VHF Radio Communications – National Projects and Regional Interoperability
- Meteorological Services – Working Together
- National Emergency Telecommunication Plans
- Standard Operating Procedures (SOPs)
- Training
- NGO Perspective – Caritas and ADRA
- Universal Access Programme (Vanuatu) & Serval Mesh
- Private Sector Engagement
- Hands-on Practical Exercises
- Unmanned Aerial Vehicles (UAV / drone technology) – Vanuatu pilot

Workshop presentations covering the above themes can be accessed [here](#).

6. KEY SESSION SUMMARIES & OUTCOMES

a. Civil-Military-Police Collaboration

The involvement of many agencies is a reality of disaster preparedness and response. The need to effectively work together is vital to support affected communities. Traditionally, military and police have robust communications systems and procedures to conduct their operations. This capacity is co-opted during times of disaster where military and police are key responders and service providers. In this session, Warrant Officer 2 (WO2) Patrick Williams from the Republic of Fiji Military Forces (RFMF) shared his experience as a Communications specialist who has been deployed across the world in peacekeeping operations. The question of when the military becomes involved in response was raised. WO2 Williams said that this trigger mechanism was something that is being discussed with the Fiji NDMO to ensure it is optimal.

Willie Waiwo from the Communications Cell at the Vanuatu Mobile Force (VMF) / Vanuatu Police Force (VPF) spoke about the strong relationship between VMF/VPF and the Vanuatu NDMO. In Vanuatu, VMF are deployed to the NDMO during an emergency and are mandated to assist, particularly with managing communications over HF radio.

The session was facilitated by Alan Johnson of WFP. Alan took the participants outside to conduct a “clear communications” exercise which was fun but at the same time demonstrated the importance of communication in completing a task effectively when many people are involved.



The session concluded with a group exercise where attendees split into four country groups – Solomon Islands, Fiji, Vanuatu, and Tonga. Each country group was asked to consider the following questions:

1. Does your Military / Police force use VHF or HF radio for communications?
2. Is a common radio communication system operational in your country?
3. Do you think a common channel for emergency communications is useful? If so, who should be part of the common channel?

4. How can it be implemented, and what might the challenges be?

Summary of group discussion on the above questions:

Q	Solomon Islands	Fiji	Vanuatu	Tonga
1	Yes, VHF to closer islands (line of sight), and HF over longer distances.	Yes: *Pol – HF, VHF, UHF. *Mil – HF, VHF, UHF. *NDMO – HF, VHF. *Met Services – HF. *Fiji Red Cross – HF, VHF. *Amateur radio operators.	Yes, VHF and HF.	Yes, VHF and HF.
2	HF – one national CH13. VHF – CH13. National spectrum plan confirmed to ITU.	No: *HF – disaster frequency international allocation (ITU). *Maritime / Aero – channels pre-assigned. *Land – need national coordination of channel/freq for humanitarian assistance and disaster relief (HADR).	Yes, via NDMO HF system.	Yes, a common platform is used by Mil, Pol, Met, NEMO and TBC – keen to include other stakeholders including NGOs.
3	Not yet. Agencies have their own.	Yes, common frequency and common channel would be useful.	Yes, during disasters. Common channel should include NDMO, CDCs, VMF, Health, Red Cross, CARE Int'l, World Vision.	Frequencies are available. No charges – letter of authorisation from NEMO to join.
4	Develop a national emergency comms plan. Consider equipment costs for HF radio.	*The NDMO freq/channel should become the “common” HADR. Assignment by TAF of HADR freq/channel (HF, VHF, UHF). Areas to consider include agency awareness, demarcation of operational and tactical, analogue versus digital configuration.	The NDMO HQ HF system is central. Challenges including training of radio operators, spectrum allocation, maintenance. There is no common emergency channel.	Challenges include movement of equipment and training for operators.

b. Reaching the Last Mile: Broadcasting and Social Media - Panel

The session started with a panel discussion. The audience was both ETC and Logistics Cluster attendees. The panel members were:

- Dan McGarry, Media Director, Vanuatu Daily Post/Buzz FM 96
- Evelyne Toa, Deputy Editor, The Independent/FM 107
- Warren Robert, Team Leader - Technical Services Department, VBTC

Topics discussed during the panel included:

- How the media can work with NDMOs to provide up-to-date and accurate information to the community
- Recognising the inaccuracies of social media, and how we address the challenges
- Working with broadcasters during a disaster to ensure stations are able to continue broadcasting and ensuring remote communities can continue to obtain information

- The media as a trusted source of information to the public
- The need for further engagement with media on key issues during 'normal' times (preparedness).

c. Reaching the Last Mile: Case Studies

In this session Caroline Teyssier from the Global ETC unit at the World Food Programme presented three case studies in different countries which involved an element of reaching the last mile. The presentation started with a brief overview of the Global ETC including its operations across the world including Syria, Iraq, Haiti, and the Pacific. Caroline described the ETC as a global network of humanitarian, government and private sector organisations working together to provide shared communication services in a humanitarian context. Caroline said that the Global ETC endeavours to serve affected populations, humanitarian responders and governments. The case studies were:

- Internet for community – Iraq case study
- Broadcasting – Haiti case study
- Social media – Nepal case study

Details are in the [presentations](#). Following the presentations participants split into three groups for an activity on communications tools (social media, broadcast radio etc.) to reach the last mile. One of the discussion points raised was the timeline for issuing warnings to the community for critical warning such as tsunami – there are now fully automated warning mechanisms which Solomon Islands mentioned that they are working towards.

The outputs captured from the group work exercise are presented below:

Group Name	Group discussion
Tonga / Samoa	<p>Radio broadcast is important for last mile communications.</p> <ul style="list-style-type: none"> • AM radio broadcast has the greatest coverage • FM is most widely listened to in the urban areas • SW has the widest coverage <p>Considerations:</p> <ul style="list-style-type: none"> • Procedure from NDMO to broadcasters. Different disasters require different procedures • Each broadcaster to identify focal point(s) to liaise with NDMO • Messages broadcast to the general population need to be authorised • Messages must be issued with top priority. <p>Challenges:</p> <ul style="list-style-type: none"> • Training • Simulation – testing & feedback • High staff turnover • Limitation on coverage • Lack of receive (Rx) equipment • Absence of common operating platforms with social media.
Solomon Islands	<p>The group discussed social media. Some of the observations from the Sols group:</p> <ul style="list-style-type: none"> • Many tools exist such as Facebook, Facebook LIVE, Twitter, Instagram

	<ul style="list-style-type: none"> • Social media is only relevant to those in urban areas with good connectivity. Social media is not sufficient to reach rural areas due to lack of internet access. Broadcast radio is the first option to reach communities ('last mile'). • Social media runs the risk of credibility, misinformation and confusion. • In addition to broadcast radio, other options to reach the last mile include TV, SMS, alerts and warning systems. • It is essential that the right language is used keeping in mind that many people in communities will not understand technical language. Messages should be clear and direct.
Fiji	<p>Social media has two key useful functions:</p> <ul style="list-style-type: none"> • A platform to share / broadcast information to the public • A platform to increase situational awareness (data mining) by seeing what the public are saying/posting on social media <p>Considerations in using social media:</p> <ul style="list-style-type: none"> • How do we formalise the platforms? • Who is responsible? Should we have an SOP? • Maintaining visibility and interest? • Linking social media platforms/accounts – post once and replicate across • Approval process to post updates for time critical events <p>Challenges:</p> <ul style="list-style-type: none"> • Social media assumes that people have internet access. • Lack of regular updates, who manages updates in peace and emergency times. • Who posts updates outside of office hours? <p>Quick-wins:</p> <ul style="list-style-type: none"> • Multi-platform social media tools • Link EWS sites (eg. Met Services) to official NDMO platforms <p>Key point highlighted by the group: “manage the media before the media manages you!”</p>

d. HF & VHF Radio Communications - National Projects & Regional Interoperability

HF and VHF radio is a popular communication technology used by first responders in the Pacific during emergency response. The long range of HF radio makes it particularly popular for inter-island communications. This session was split into three presentations followed by discussion:

1. Regulatory perspective – frequencies, callsigns, procedures - Telecommunications Authority of Fiji
2. Documentary video: “Linking the Islands: Early Warning Systems in Tuvalu” – NAPA-II Project, UNDP
3. Regional interoperability - The Pacific Community (SPC)

Tevita Navila from the Telecommunications Authority of Fiji (TAF) began the session by sharing a regulatory perspective on disaster communications. Tevita highlighted that there is a robust process behind frequency allocation and assignment for communication systems. TAF is the body that manages national frequency resources in Fiji and Tevita informed the group that TAF is obliged to provide adequate frequency bands that can be shared or exclusively dedicated for disaster communications. Frequencies bands for disaster communications are internationally allocated and

coordinated through the International Telecommunications Union (ITU) in its resolutions and recommendations from World Radio Conferences (WRC) – this guides frequency standardisation for national, regional and international use. Based on frequency band allocations, regulators manage the assignment of callsigns and frequencies. Each country has a unique callsign series.

A selection of callsign prefix assignments from the International Telecommunications Union (ITU) are presented in the

Frequency Assignment

- Administrators and Regulators are responsible for assigning frequencies from the allocated frequency bands for disaster communications.
 - Spectrum administrators and regulators regard spectrum resources requests for disaster communications as top priorities
 - Frequencies are assigned with call signs for station identifications – call sign indexes are also internationally allocated through the ITU

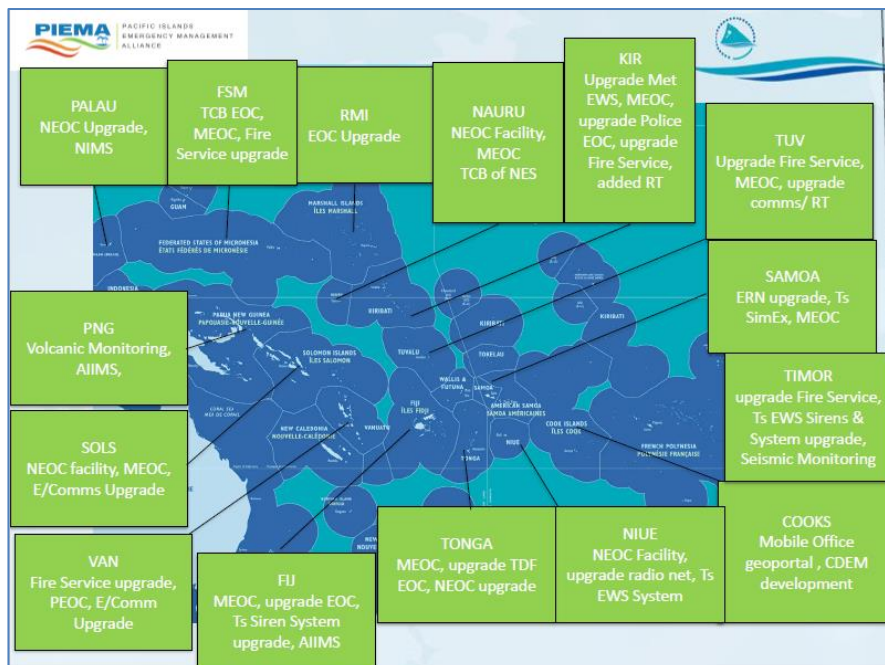
table directly below.

Callsign Prefix Series	Allocated to
3DN-3DZ	Fiji (Republic of)
H4A-H4Z	Solomon Islands
A3A-A3Z	Tonga (Kingdom of)
YJA-YJZ	Vanuatu (Republic of)
5WA-5WZ	Samoa (Independent State of)
AXA-AXZ	Australia
ZKA-ZMZ	New Zealand
E5A-E5Z	Cook Islands
C7A-C7Z	World Meteorological Organisation (WMO)

A documentary video (24 mins) was played about the early warning system (HF radio, tsunami sirens, and broadcast radio distribution) that was deployed in Tuvalu under the NAPA-II Project led by the Government of Tuvalu with their implementing partner, UNDP. The video highlighted the important working relationship with communities, the meteorological office, NDMO, suppliers and other stakeholders to deliver the project. The video can be viewed at the following link: <https://www.youtube.com/watch?v=YpPE9cxDmuU/>

Anthony Blake, PIEMA Officer, at SPC provided an overview of interoperability in the Pacific providing an insight into the different national projects. PIEMA stands for the Pacific Islands Emergency Management Alliance which is made up of national disaster management agencies, fire and emergency services, police and public safety agencies, and others. PIEMA helps strengthen the coordinated approach emergency services need to take when preparing, responding and

recovering from disaster. Anthony talked about the incident management systems and some PICs follow different incident management system standards eg. NIMS (US system), AIIMS (Australian system), and CIMS (NZ system).



Anthony highlighted some of the challenges for regional interoperability such as:

System interoperability, awareness of agency capabilities and their frequencies/channels, lack of sharing specifications and lessons, different siren tones – single, dual, multi-modal, training and staff turnover, disability sensitive design, tyranny of distance and difficult terrains.

It was highlighted that maintenance plans are essential for communications equipment. The assumption that governments will take on all maintenance costs and tasks is slightly misguided. WFP mentioned that a cost-sharing model is one way to spread the cost burden. Anthony finished his presentation with identifying some of the ways we can move forward to improve interoperability.



e. Together with Met Services – Communication Systems & Messaging

National Meteorological and Hydrological Services (NMHSs) play a critical function in weather and climate services in the Pacific. To perform their vital function, a lot of technology and communications infrastructure is used by the meteorological (“met”) community including satellite systems, HF radio, and early warning systems. This session gave the platform to meteorology representatives attending the workshop. Although not present at the workshop, the Secretariat of the Pacific Regional Environment Programme (SPREP) contributed to the preparation of the presentation.

The presenters were:

- Edward Young, RANET Specialist and consultant to the PICI Panel
- David Gibson, Director - Vanuatu Meteorology and Geo-hazard Department and member of the PICI Panel
- Wilson Leguvaka, Regulator - TCSI, and Vice Chair of the PICI Panel
- Fred Atalifo, IT Deputy Director - University of the South Pacific

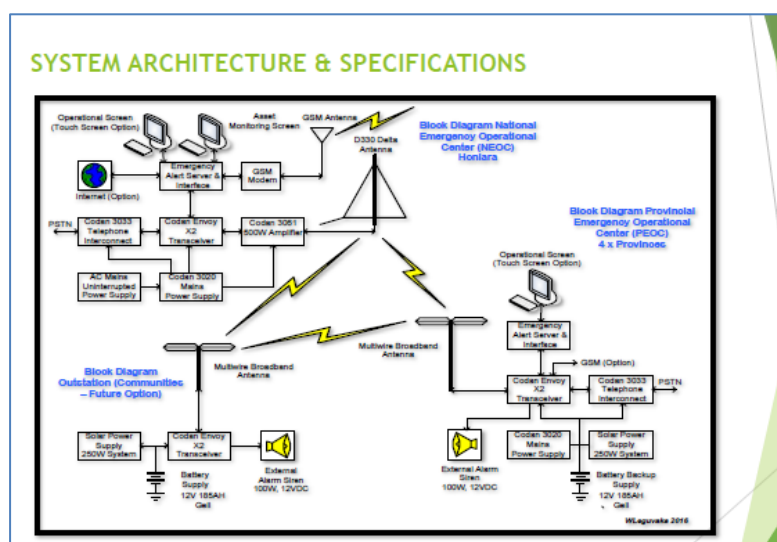
Ed Young gave participants an overview of the governance structure of the met community in the Pacific. This included an introduction to the Pacific Island Meteorological Strategy (PIMS) 2012-2021 which is currently under review to be relaunched in August 2017. The revised PIMS will include a strategic focus on integrated observing and communication systems, highlighting the increasing emphasis that the met community is placing on improving operations, maintenance, coverage, quality, standardisation, communications and archiving. Ed also spoke of the Pacific Meteorological Council (PMC) which has met in 2011 (RMI), 2013 (Fiji) and 2015 (Tonga). Established in 2011, PMC is a specialised subsidiary body of SPREP. PMC provides policy advice to SPREP on the needs and priorities of its member countries and territories in relation to meteorology (weather and climate) and related fields. The PMC meets once every two years and the next meeting will be in August 2017 in Solomon Islands. A number of working groups support and advise the PMC. In 2016, the Pacific Island Communications and Infrastructure (PICI) Panel was formed as a PMC working group.



David Gibson, Director of the Vanuatu Meteorology and Geo-hazard Department (VMGD) discussed how meteorological services operate in Vanuatu and shared insights from Tropical Cyclone (TC) Pam and more recently TC

Donna. During both tropical cyclones, SMS alerts messages were sent free of charge which demonstrates the cooperative spirit between VMGD and the mobile network operators (TVL and Digicel) in Vanuatu. David also spoke about VMGD's infrastructure and warning system flow. Two challenges were specifically sighted: the high cost of infrastructure maintenance, and the difficulty of managing social media where messages can be distorted.

Wilson Leguvaka, Director Regulatory Resources at the Telecommunications Commission of Solomon Islands (TCSI) spoke about Solomon Islands' emergency communication and disaster telecommunications system. Wilson began by outlining Solomon Islands ICT Policy Framework. The presentation focused on the HF radio communications system (CODAN) that has recently been deployed in Solomon Islands and has advanced functionality including phone-to-HF radio calling (vice versa), data transfer, text messaging, and tsunami siren control capabilities.

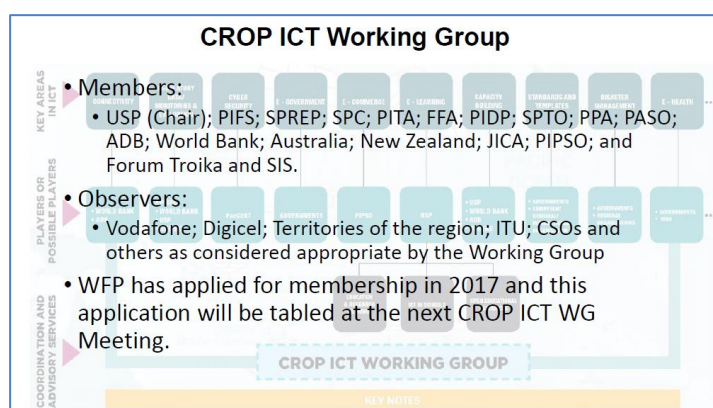


The session closed with an update from the University of the South Pacific (USP) by Fred Atalifo, Deputy Director of the IT Department. USPNet is the name of the university's high capacity network connecting all of its campuses and sub-campuses in the Pacific. Disaster response efforts have been conducted from USP campus sites due to the resilient

USP WAN Connectivity

Campus	Medium	Link Speed
Vanuatu - Emalus	Hybrid USPNet Satellite / Local ISP	10 / 10 Mbps
Vanuatu - Malampa	USPNet Satellite	7.5 Mbps
Vanuatu - Santo	USPNet Satellite	7.5 Mbps
Solomon Is - Honiara	Hybrid USPNet Satellite / Local ISP	10 / 20 Mbps
Solomon Is - Lata	USPNet Satellite	7.5 Mbps
Samoa - Alafua	USPNet Satellite	10 Mbps
Samoa - Savaii	USPNet Satellite	7.5 Mbps
Tonga - Atele	Submarine Optic-Fiber Cable	100 Mbps
Tonga - Vavau	USPNet Satellite	7.5 Mbps
Tonga - Haapai	USPNet Satellite	7.5 Mbps
Kiribati - Tarawa	Hybrid USPNet Satellite / Local ISP Trial	10 / 15 Mbps
Tuvalu	USPNet Satellite	7.5 Mbps
Marshall Is	Submarine Optic-Fiber Cable	100 Mbps
Cook Is	USPNet Satellite / Local ISP	7.5 / 10 Mbps
Nauru	Hybrid USPNet Satellite / Local ISP Trial	7.5 / 10 Mbps
Niue	USPNet Satellite	7.5 Mbps
Tokelau - Atafu	USPNet Satellite	7.5 Mbps
Tokelau - Fakaofu	USPNet Satellite	7.5 Mbps
Tokelau - Nukunono	USPNet Satellite	7.5 Mbps
Fiji - Lautoka	Local ISP	20 Mbps
Fiji - Labasa	Local ISP	10 Mbps
Fiji - Savusavu	Local ISP	5 Mbps
Fiji - Lau (MoE Trial)	USPNet Satellite	5 Mbps

connectivity provided by USPNet. For example, during TC Pam in 2015, communication services (eg. Facebook, email) were provided from USP Malampa campus to the community members. A project is in progress supported by the New Zealand Ministry of Foreign Affairs and Trade (NZ MFAT) to upgrade USPNet from 2017-2019. The project will address end-of-life satellite infrastructure, provision of transformative services, and pre-deployment of disaster response/business continuity kits in the Pacific region. The CROP ICT Working Group is chaired by USP Vice Chancellor and President. WFP has submitted a request to USP to join the CROP ICT Working Group. The message delivered by USP during the presentation is that they are ready to assist through the provision of ICT infrastructure services, facilities, and through their advanced teaching and learning platforms.



f. National Emergency Telecommunications Plans (NETP)

A national emergency telecommunications plans (NETPs) is a strategic plan that establishes the national vision on the role and use of telecommunications for emergency purposes; it also identifies the roles and responsibilities of responders. Donnie Defreitas, Project Director of the Pacific ICT Regulatory Resource Centre (PIRRC), spoke about the work that PIRRC have been leading to assist interested Pacific Island countries in the development of an NETP. An NETP workshop was held in Vanuatu from 15-17 May 2017 to consult with countries on the development of an NETP template. In addition to country representative, the ITU and WFP attended the NETP workshop. The NETP template is being finalised by PIRRC and assistance is being offered to countries on a one-on-one basis to customise and populate the template to meet country needs. It was noted that an NETP is not a standard operating procedure (SOP) but rather a strategic document; SOPs can be referenced as appendices to the NETP.

An NETP should refer to relevant disaster management act(s) and telecommunications act(s) of the country where the plan is being developed. The NETP should be structured to address the four phases of any disaster or emergency:


1. Preparation: sensitizing persons to the need to prepare for disasters
2. Alerting: alerting persons to action in the face of impending disasters
3. Response: assisting persons and agencies to respond to a disaster
4. Recovery: addressing the recovery process after a disaster.

The best type of NETP is one where all stakeholders (regulators, government, providers and users) are involved in its creation and on-going use. Donnie highlighted that the NETP should be people and process centric. It should recognise that ICT is an extremely useful tool but it should always be treated as a means to an end, not the end itself.

g. Standard Operating Procedures (SOPs)

Salma Farouque, Pacific ETC Coordinator, WFP, described an SOP as a set of step-by-step instructions compiled by an organisation to help staff carry out routine operations. Salma presented a basic SOP to participants to conduct radio checks. It was agreed that a generic radio check SOP should be created and shared with countries to customise at the national level. The Pacific ETC Coordinator took an action to develop the generic radio check SOP and share it with countries.

10am, every Tuesday



Person at HQ with the duty of initiating radio checks:

1. Goes to comms area where HF station is located
2. Opens radio check log with each radio station listed
3. Initiates an HF call to each radio station in the list
4. Continues calling until the list is completed
5. Records result of the HF calls in the log (success/unsuccess)
6. At the completion of the radio check sends the radio check log (incl. successful/unsuccessful calls) via email and copies it to management.

Caroline Teyssier, Global ETC, WFP, then introduced the ICT country profile template. The Global ETC has a template that used to collect relevant information that it then posts on www.etcluster.org. It captures such things as contacts (eg. government, NDMO, military), service providers, humanitarian agencies, rules and regulations, electricity supply, emergency communication facilities and major connectivity hubs. Collecting and updating the data once it is posted needs to be managed closely. Fred Christopher, Manager of the Pacific Island Telecommunications Association (PITA) informed attendees that PITA will soon be launching a contact list on the PITA website (www.pita.org.fj) as a useful resource.

h. Training

Caroline Teyssier, WFP, briefly covered the topic of training from the perspective of the Global ETC. Caroline highlighted that different kind of profiles are required in an ICT emergency response team such as technical experts (eg. radio, data, electrical skillsets) as well as managers, coordinators and team leaders with strong project management skills. Current ETC trainings include management and technical training as well as training through simulations (operational exercises). It was mentioned that when countries are scoping infrastructure projects, training should always be included in the project scoping and budgeting phase. After project completion it can be a challenge to deliver training due to budget or other constraints. The Pacific ETC can be contact to assist with training. Anthony Blake also mentioned.

i. NGO Perspective – Caritas and ADRA

Mark Mitchell, Humanitarian Programme Coordinator at Caritas NZ, shared the perspective of communications from a faith based organisation (FBO). Mark discussed that the local and regional reach of Caritas. Locally, communities can be reached through congregation – churches are virtually everywhere in Pacific Island countries. Regionally, Caritas Oceania has a presence in FSM (as Catholic Relief Services), Tonga, Samoa, Papua New Guinea, Australia and New Zealand. Currently, Caritas does not have a presence in Vanuatu. Globally, Caritas have 165 members. Some examples of communication systems used by Caritas include their HF radio network in PNG, and Catholic Radio.

Geoff White, IT Consultant in ADRA's International Emergency Response Team introduced ADRA an organisation of 20 million members worldwide with local offices in 131 countries. Geoff highlighted one of the key advantages of FBOs is the many volunteers ready to help encouraged by their faith. Frank Teeuwen is ADRA International's Director of United Nations (UN) Liaison Office based in Washington DC. Geoff has been involved in emergency responses including the Nepal earthquake (2013) and Typhoon Haiyan (2015) in the Philippines. Geoff spoke of the realities of emergency response – difficult conditions, inadequate tools for communications so he devised a more robust and agile system that ADRA's responders can use in the field. Geoff's emergency connectivity kit includes:

- UniFi Access Point by Ubiquiti (with access control software)
- Network Attached Storage by Synology (with solid state drive)
- Portable Solar Power Kit by Goal Zero
- Portable printer (HP 200 OfficeJet)

With the access control software (UniFi Controller) Geoff is able to remotely manage all users on his network and manage internet bandwidth assignment. The products are available off-the-shelf and the Ubiquiti wireless access point has a range of approximately 120 metres. As a package Geoff said the software defined networking solution he has created is affordable and meets the needs of ADRA's teams deployed in emergencies.

j. Universal Access and Serval Mesh

Brad Partridge from Vanuatu's Telecommunications and Radiocommunications Regulator (TRR), presented on universal access in Vanuatu and talked about the country's Universal Access Policy (UAP). The TRR Act of 2009 has a section (part 4) on universal access, outlining TRR's mandate to improve access to telecommunications services in under-served and unserved areas of Vanuatu. Vanuatu's target is that 98% of Vanuatu's population will have access to voice, data (narrowband and broadband), and text services by 1 January 2018. The goal of UAP is to provide services at schools, health facilities and other government institutions. UAP is making a significant difference in rural communities, and a real demand for communications services exists. Already 17 "CLICC" sites have been connected to the internet by the UAP initiative, and all of the sites have solar connectivity recognising the challenge of reliable power in rural settings. 'CLICC' stands for Computer Laboratory and Internet Community Centre. TRR are using the data collected from Vanuatu's 2016 mini census to determine the network coverage requirements to meet the 98% UAP target.

Brad's presentation on universal access led into a presentation by Dr Paul Gardner-Stephen from Flinders University on an innovative technology that he has created called Serval Mesh. The Serval Mesh Extender is a low-cost open-source infrastructure-independent telecommunications relay device developed to support telecommunications during and after disasters, as well as in remote and isolated locations. The Mesh Extender has been under development for five years, and is just now transitioning from a primarily university research system, into a mass-producible and deployable humanitarian telecommunications product. Serval Mesh will be piloted in Vanuatu in a multi-site trial that will finish by the end of 2017. Results from the trial will feed into further refinement of the technology. Paul called on interested parties to talk with him to bring the technology to more locations given its ability to provide connectivity to under-served or unserved areas. New Zealand Red Cross is a close collaborator with Flinders University on the Serval Mesh project.



k. Private Sector

The private sector engagement session was made up of individual presentations and a panel discussion. The presentations covered the Connecting Business Initiative (CBI), Fiji Business Disaster Resilience Council (FBDRC), Vanuatu Business Resilience Committee (VBRC), and the Pacific Local Supplier Engagement Project. The presenters were:

- Connecting Business Initiative (CBI) – Leonard Chan
- Fiji Business Disaster Resilience Council (FBDRC) – Leonard Chan
- Creation of the Vanuatu Business Resilience Committee (VBRC) – Astrid Boulekone
- Local Supplier Engagement Programme – Australian Red Cross (ARC) – Luke Johnston

The establishment of the FBDRC and more infant VBRC recognises the critical role that the private sector plays in times of disaster both as a service provider and as an important driver of the economy. Leonard Chan informed the group that the FBDRC launched in July 2016 with the following objectives:

- To strengthen private sector resilience and their response to disasters in key areas
- Minimize ad hoc relationships
- Strengthen disaster resilience from large corporations to SME's
- Be positioned as the “go to” for humanitarian assistance

FBDRC is incorporated under the Fiji Commerce and Employers Federation (FCEF). One of the goals of the FBDRC is to integrate the private sector into the Fiji Disaster Management Cluster system. Leonard highlighted that ensuring there is a clear entry point for the private sector into government for disaster management purposes is vital. The FBDRC has also been working with SPC and the Pacific Island Private Sector Organisation (PIPSO) to develop the Disaster-Ready Business Toolkit which is accessible at www.pipso.org.fj/stayopen. The toolkit includes a business continuity plan (BCP) template and a quick 12-step guide to create a BCP.

Astrid Boulekone, General Manager of the Vanuatu Chamber of Commerce and Industry (VCCI), spoke about the creation of the Vanuatu Business Resilience Committee (VBRC). The official launch of VBRC is planned for 6 July 2017.

VANUATU BUSINESS RESILIENCE COMMITTEE

To strengthen activities aimed at *engaging the private sector* in **climate change interventions**, **humanitarian action** and **post-emergency reconstruction**, and supporting overall **resilience**, in coordination with other actors.

- Build the resilience of businesses to shocks
- Strengthen the engagement of the private sector in climate change & disaster risk management
- Provide a regular forum for the private sector to convene with Government, UN and NGO actors

Some of the benefits of the VBRC highlighted by Astrid were the valuable forum it creates for dialogue, providing a clear entry point for the private sector into climate change and disaster risk reduction (CCDRR) activities, and raising the awareness of the private sector of CCDRR opportunities. Key private sector entities relevant to climate change finance include insurance/banking, construction/infrastructure, tourism (large and small operators), food and agriculture, transport/shipping, and other with a focus on adaptation. Some of the committee's next steps include creating a database of private sector entities interested or currently involved in CCDRR activities. And developing a series of concept notes that provide information on how private sector entities can access climate finance in Vanuatu.

The final formal presentation in the private sector session was from Luke Johnston of the Australian Red Cross (ARC). Luke spoke about the Pacific Local Supplier Engagement (LSE) project which received funding from the Australian Government Department of Foreign Affairs and Trade (DFAT) under the Pacific Humanitarian Challenge. Amongst other things, the project seeks to provide information on local suppliers and their goods and services via a web-based platform. To achieve that goal, the project has developed a digital procurement system called "e-Pacure" which offers functionality for buyers (eg. humanitarian agencies) to create requests for quotation (RFQs), and for suppliers to respond with quotations directly via the e-Pacure system. Luke played a short video (<https://youtu.be/WoiC7AG3vIM/>) demonstrating the "beta" version of e-Pacure which was developed in collaboration with a local procurement and standardisation focus group, and tested with local businesses in Vanuatu on 1 June 2017. Possible future scope for the platform include adding more products and services, and new functionality such as recording stock levels, and providing information services.

The private sector session closed with a panel discussion. The floor was given to private sector representatives to share their perspectives, responding to questions from the facilitators and audience. The companies represented on the panel were: Fiji International Telecommunications (FINTEL), eTech Vanuatu, HK Logistics, Ifira Port Development & Services Co Ltd, and FR8 Logistics. SPC-GIZ were also one of the panellists. Discussion points covered by the panel included:

- Better communication between national actors and private sector; working on *how* to engage with the private sector
- Working together to improve preparedness measures. This includes knowledge sharing on individual systems, an understanding of resources, reporting lines, and capacity
- Participation from the private sector in workshops and forums related to emergency preparedness and response which heavily involve governments, and humanitarian agencies
- The need for clear lines of communication and coordinated messaging
- Discussions on the costs of services during disaster periods. The panel said that business does need to charge for services in many instances to remain viable.

1. Hands-on Practical Exercises

Hands-on time with equipment is a great learning opportunity. The objective of this session was to give participants the chance to handle different technologies and ask questions in an informal setting. The following emergency communication systems were demonstrated:

- VHF radio
- Emergency Mobile Kit - II (WFP standard kit)
- BGAN (satellite data terminal)
- Chatty Beetle (weather warnings and alerts)
- DeLorme InReach
- Satellite phones (Iridium)
- Serval Mesh
- Portable office solution (ADRA emergency response kit)





m. Unmanned Aerial Vehicles (UAV / Drones / RPAS)

The use of unmanned aerial vehicles (UAVs) or drones (also referred to as RPAS), in humanitarian response is increasing and more local suppliers are emerging in the Pacific. Andrew Parker, Chief of the UNICEF Vanuatu Field Office, presented a pilot programme currently underway that is trialling remotely piloted aerial systems (RPAS) for vaccine delivery in Vanuatu. The programme is led by the Government of Vanuatu with the support of UNICEF. The Vanuatu trial is being run in three phases: 1) a field-level trial in August 2017 where participants will fly UAVs over Takara in North Efate to demonstrate the over-water delivery capacities of their equipment. Participant will be scored against pre-determined criteria the results of which will feed into phase 2, 2) a request for proposal to be issued in November/October 2017 through which vaccines will be delivered via UAVs to three sites (Erromango, South Epi, Pentecost) in February and March 2018, and 3) a contract issued to one supplier for 3-6 months to deliver medical supplies via UAV in one province of Vanuatu (possibly Sanma) later in 2018. One of the expected benefits of the trial will be the strengthening the UAV community in the Pacific. The trial itself will allow the Government of Vanuatu to assess the:

- cost effectiveness and reliability of the RPAS for possible national adoption of the services
- wider benefits and community confidence
- Civil Aviation Authority of Vanuatu (CAAV) requirements to manage commercial RPAS in Vanuatu

QUESTIONS TO BE ANSWERED DURING TRIAL

- Can UAVs be used safely in Vanuatu airspace?
- Are UAVs acceptable to the komuniti?
- Can RPAS maintain the cold chain integrity and reduce health supply disruptions?
- Can RPAS deliver accurately with minimal losses?
- Can RPAS be used for other purposes in Vanuatu?
- Is RPAS cost effective in Vanuatu and is national use realistic?
- What capacity and systems does CAAV need to safely facilitate RPAS?

A presentation by Salma Farouque, Pacific ETC Coordinator from WFP, on the development of a global UAV humanitarian framework that WFP has been working on with partners was not presented due to time running short. The presentation is available [here](#) in the ETC folder (“DAY 3”).

7. WRAP-UP and FOLLOW-UP

In closing, Salma Farouque from WFP thanked everyone for their participation over the three days of the ETC workshop. She said that many topics were covered over the three days, and many new relationships were developed which it is hoped will lead to collaborations well beyond the workshop.

Peter French, outgoing Officer-in-Charge of the WFP Pacific Office in Fiji, gave a vote of thanks and remarked that a lot of ground was covered during the three days. Norman Warput from the Vanuatu Telecommunications and Radiocommunications Regulator (TRR) ended with some closing remarks and thanked all participants for their active contribution.

Follow-up

Some of the areas to be followed up beyond the workshop include:

- The meteorological community are working hard to strengthen connections with the telecommunications community (service providers, regulators etc). Salesa Nihmei from SPREP can be contacted to find out how to connect with the PICI Panel which is one of the working groups advising the Pacific Meteorological Council (PMC) on matters relating to communications and infrastructure
- Pacific Island countries interested in developing National Emergency Telecommunication Plans (NETPs) should contact Donnie Defreitas from PIRRC. An NETP template is being developed and support is available to countries who would like to develop or update their NETP
- Pacific ETC (WFP) will develop and circulate a generic radio check SOP and share it with countries to customise at a national level
- The Pacific Island Telecommunications Association (PITA) is launching an online contact list on their website. Fred Christopher, PITA Manager, will share details once the contact list is launched
- The revival of amateur radio (HAM radio) in the Pacific is an opportunity that should be investigated. There are many benefits of amateur radio including the availability of an informal disaster network, and the development of a skilled pool of people across the region with radio operator skills
- The team working on the Serval Mesh technology invite all interested parties to join their “Coalition of the Willing” to promote the development of low cost technologies that will help to connect the last mile.
- Continuing support from Pacific ETC (WFP) for national emergency telecommunications cluster strengthening is available. Solomon Islands expressed a need to get their National Emergency Telecommunications Team (NETT) to actively meet

8. ANNEX

a. ETC Agenda (Day 1, 2, 3)



AGENDA – Regional ETC Workshop: 12-14 June 2017

Warwick Le Lagon Resort, Port Vila, Vanuatu



This agenda presents the ETC sessions of the joint workshop. The detailed logistics agenda is separate.

DAY 1 – Monday, 12 June 2017	
8h30-9h00	1. Opening > Chief Guest: Hon. Ham Lini Vanuauroroa, Minister of Climate Change Adaptation, Vanuatu > Shadrack Welegtabit, Director, Vanuatu National Disaster Management Office (NDMO) > Peter French, Officer in Charge, United Nations World Food Programme (WFP), Fiji Office
9h00-9h30	2. Introduction Anna Young, Florent Chane, Salma Farouque (WFP)
9h30-10h00	3a. Presentation of Vanuatu Logs & ETC -- plenary.
10h00-10h30	3b. Presentation of Tonga Logs & ETC -- plenary.
10h30-11h00	BREAK
11h30-11h30	3c. Presentation of Samoa Logs & ETC -- plenary.
11h30-12h00	3d. Presentation of Fiji Logs & ETC -- plenary.
12h00-12h30	3e. Presentation of Solomon Islands Logs & ETC -- plenary.
12h30-13h00	4. Summary of the past year -- plenary. Presenters: Florent - Logistics & Salma - ETC (WFP)
13h00-14h00	LUNCH
14h00-15h00	5. Civ-Mil-Pol: Communications & Working Together The role of military communications in disaster response. How we can work together. Presenter: Warrant Officer 1 (WO1) Patrick Williams (RFMF, Communications Unit) – Fiji Discussion: Willie Waiwo (VPF, Communication Section) - Vanuatu > <i>Group work exercise</i> Facilitator: Alan Johnson (WFP)
15h00-15h30	6a. Reaching the last mile - Broadcasting / Social Media (panel) -- plenary (ETC & logistics). Panellist: Dan McGarry, Media Director, Vanuatu Daily Post/Buzz FM 96 Panellist: Evelyn Toa, Deputy Editor, The Independent/FM 107 Panellist: Warren Robert, Team Leader - Technical Services Department, VBTC Facilitators: Salma Farouque, Anna Young (WFP)
15h30-16h00	BREAK
16h00-17h00	6b. Reaching the last mile - Broadcasting / Social Media (Case Studies – Logs + ETC) Global "ETC2020" strategy & case studies: <ul style="list-style-type: none"> Internet for community – Iraq case study Broadcasting – Haiti case study Social media – Nepal case study Presenter: Caroline Teyssier (WFP)

	DAY 2 – Tuesday, 13 June 2017
8h45-10h30	7. HF & VHF radio communications - national projects & regional interoperability <ul style="list-style-type: none"> > Regulatory perspective – frequencies, callsigns, procedures - Tevita (20 mins) > Documentary: "Linking the Islands: Early Warning Systems in Tuvalu" (25 mins) > Regional interoperability – Anthony Blake (45 mins) > Open discussion on interoperability (15 mins) <p>Presenters: Tevita Navila (TAF), Anthony Blake (SPC) Facilitators: Salma Farouque (WFP)</p>
10h30-11h00	BREAK + GROUP PHOTO
11h00-12h00	8. Together with Met Services - Communication Systems & Messaging <ol style="list-style-type: none"> 1. Pacific Island Meteorological Strategy (PIMS) 2. Pacific Roadmap for Strengthened Climate Services (PRCS) 3. PICI Panel 4. Update from USP (Fred Atalifo) <p>> Group exercise on strengthening coordination with Met.</p> <p>Presenters: Ed Young (RANET), Wilson Leguvaka (TCSI / PICI Panel), David Gibson (VMGD)</p>
12h00-13h00	9. National Emergency Telecommunications Plan (NETP) <ul style="list-style-type: none"> > Creating an NETP in your country <p>Presenter: Donnie DeFreitas (PIRRC)</p>
13h00-14h00	LUNCH
14h00-14h30	10. Standard operating procedures (SOPs) <ul style="list-style-type: none"> > Radio comms: a methodology for VHF / HF radio checks and ensuring compliance (Salma) > Introducing an ICT country profile format (Caroline) <p>Presenters: Salma Farouque, Caroline Teyssier (WFP)</p>
14h30-15h00	11. Training <ul style="list-style-type: none"> > ETC training (Caroline) > Introducing the EOC training module and integrating emergency comms (Anthony) <p>Presenters: Caroline Teyssier (WFP), Anthony Blake (SPC)</p>
14h30-15h00	12. NGO perspective - presentation from CARITAS and ADRA <p>Presenter: Mark Mitchell, Humanitarian Programme Coordinator, Caritas Aotearoa NZ Presenter: Geoff White, IT Consultant, Emergency Response Team, ADRA</p>
15h30-16h00	BREAK
16h00-17h30	13. Universal Access & Serval Mesh live demonstration <ul style="list-style-type: none"> > Vanuatu Universal Access Programme (TRR) – 15 mins > Serval Mesh live demonstration (Flinders University of South Australia) – 75 mins <p>Presenters: Brad Partridge (Vanuatu TRR), Dr Paul Gardner-Stephen (Flinders University of SA)</p>
18h30	Cocktail drinks (sponsored by HK Logistics), Warwick Le Lagon Resort

	DAY 3 – Wednesday, 14 June 2017
8h45-10h30	14a. Private sector engagement initiatives: <ol style="list-style-type: none"> 1. Connecting Business Initiative (CBI) – Leonard Chan 2. Fiji Business Disaster Resilience Council (FBDRC) – Leonard Chan 3. Creation of the Vanuatu Business Resilience Committee (VBRC) – Astrid Boulekone 4. Local Supplier Engagement Programme – Australian Red Cross (ARC) – Luke Johnston <p>Facilitator: WFP (Monica Salvitti)</p> <p>-- plenary (ETC & logistics together).</p>
10h30-11h00	BREAK
11h00-13h00	14b. Private sector panel (ETC & Logistics): <ol style="list-style-type: none"> 1. Panel discussion (60 mins) 2. Logistics & ETC (break-out groups) <p>Facilitators: WFP (Monica Salvitti, Joseph Choi), Astrid Boulekone (VCCI), Leonard Chan (FBDRC)</p> <p>-- plenary (ETC & logistics together).</p>
13h00-14h00	LUNCH
14h00-15h00	15. Hands-on practical exercises <p>> satphones, BGANs, EMK-II kit, VHF/HF radio, inReach, Chatty Beetle, Serval Mesh</p> <p>Facilitator: Opart Ongwandee/Salma Farouque (WFP), Jackson Miake (OGCIO), Sashi Singh (eTech)</p>
15h00-15h30	16. Unmanned Aerial Vehicles (UAV / drones) <p>> Global UAV framework – introduction by Salma (10 mins)</p> <p>> UAV pilot project in Vanuatu (provincial health management) – Andrew Parker (20 mins)</p> <p>Presenter: Andrew Parker, Chief of Vanuatu Field Office, UNICEF</p> <p>Facilitator: Salma Farouque (WFP)</p>
15h30-16h00	BREAK
16h00-16h30	17. Train the trainers and simulations <p>-- plenary (ETC & logistics together).</p>
16h30-17h30	18. ETC wrap-up and next steps <p>> Survey and evaluation</p>
18h00	Official workshop dinner and entertainment, Warwick Le Lagon Resort
	END OF WORKSHOP (for ETC participants only) – Thank you!

b. List of Workshop Participants*

*Please note, this list is the participants confirmed at the start of the workshop for both emergency telecommunications and logistics. A few participants who confirmed were unable to attend, and a small number may have attended but are not listed.

Focus	Name	Organisation	Country
ETC	Geoff White (IT Consultant)	ADRA	Australia
Logs	Joe Tjibang	ADRA	Vanuatu
Logs	Annalese Penh	Australian Red Cross	Australia
Logs	Luke Johnston	Australian Red Cross	Vanuatu
Logs/ETC	Leonard Chan	Fiji Business Disaster Resilience Council (FBDRC) / BSP	Fiji
Logs/ETC	Darren Bakai	CARE International	Vanuatu
Logs	Olivia Dovan	CARE International	Vanuatu
Logs	Samson Busai	CARE International	Vanuatu
Logs/ETC	Megan Chisholm (Country Director)	CARE International	Vanuatu
Logs	Yvannah Taga	Caritas	Vanuatu
Logs	Mark Mitchell	Caritas NZ	New Zealand
Logs	Patricia Thornhill	Consultant	Australia
Logs	Patience Vainerere	Cook Islands Red Cross	Cook Islands
Logs	Richelle Turner	DFAT	Australia
Logs	Julie Stalker	DFAT	Australia
ETC	Sajjad Ahmed (CTO)	Digicel Vanuatu	Vanuatu
Logs	Malia Pisi	DMO - Samoa	Samoa
ETC	Sashi Singh (General Manager)	eTech	Vanuatu
Logs	Jobe Hargrove	Fiji Red Cross	Fiji
ETC	Dr Stephen Gardener-Paul (Serval Mesh)	Flinders University	Australia
Logs	Diane Michard	French Red Cross	New Caledonia
Logs	Matt Everitt	HK Logistics	Australia
Logs	Gavan Gordon	HK Logistics	Australia
Logs	Russell Mitchell	Ifira	Vanuatu
Logs	Catherine Harris	IFRC	Fiji
Logs	Finau Limulo	IFRC	Fiji
ETC	Alwyn Danitofea (Director Communications)	MCA - Solomon Islands	Solomon Islands
ETC	Alifeleti Tuihalamaka (Director, Dept Comms)	MEIDECC - Tonga	Tonga
Logs	Amy Cole	MFAT	New Zealand
Logs	Gary Frost	NDMO - Fiji	Fiji
Logs/ETC	Ruci Daveta	NDMO - Fiji	Fiji
Logs	Waylon Muller	NDMO - RMI	Marshall Islands
Logs	Paul Hauato	NDMO - Solomon Islands	Solomon Islands
ETC	Steve Nasiu (Communications Officer)	NDMO - Solomon Islands	Solomon Islands
Logs/ETC	Loti Yates (Director)	NDMO - Solomon Islands	Solomon Islands
Logs/ETC	Shadrack Welegtabit (Director)	NDMO - Vanuatu	Vanuatu
ETC	Steven Noel	NDMO - Vanuatu	Vanuatu
ETC	Presly Tari (ICT Officer)	NDMO - Vanuatu	Vanuatu
Logs	Peter Joseph	NDMO - Vanuatu	Vanuatu
Logs/ETC	Greg Vaughan	NDMO - Vanuatu	Vanuatu
Logs	Jimmy Naura (Logs Officer)	NDMO - Vanuatu	Vanuatu
ETC	Paula Finau (ICT Officer)	NEMO - Tonga	Tonga

Logs	Vea Aniseko	NEMO - Tonga	Tonga
Logs	Darren Brunk	NZ CID	New Zealand
Logs	Graeme Brown	NZ Red Cross	New Zealand
ETC	Jackson Mlake (ICT Program Manager)	OGCIO	Vanuatu
ETC	Griffith Kalpokas	OGCIO	Vanuatu
ETC	Natiang Paul-Henry	OGCIO	Vanuatu
ETC	Gerard Metsan (CIO) - not attending	OGCIO (Office of the Government Chief Information Officer)	Vanuatu
Logs	John Wise	Oxfam	Fiji
Logs	Neverlyn Efo	Oxfam	Solomon Islands
Logs	Benicio Obed	Oxfam	Vanuatu
ETC	Donnie DeFreitas (Director)	PIRRC (Pacific Island Regulatory Resource Centre)	Fiji / Regional
ETC	Fred Christopher (Manager)	PITA (Pacific Island Telecommunications Association)	Fiji/Regional
ETC	George Samisoni (CEO, FINTEL)	PITA (Pacific Island Telecommunications Association)	Fiji/Regional
ETC	Ed Young (Project Coordinator)	RANET	Hawaii/Regional
ETC	Anthony Bate	Red Cross NZ	NZ/Regional
Logs/ETC	Drasko Kraguljac	RedR Australia	Australia
ETC	Patrick Williams (Communication)	RFMF (Republic of Fiji Military Forces)	Fiji
Logs	Iese Wilson	Samoa Red Cross	Samoa
Logs	Rohan Kent	Save the Children	Australia
Logs	Nathan Klenner	Save the Children	Australia
Logs	Philip Surukwanga	Solomon Islands Red Cross	Solomon Islands
Logs	Cyril Bakale	Solomon Islands Red Cross	Solomon Islands
ETC	Anthony Blake	SPC	Fiji / Regional
ETC	Tevita Navila	Telecommunications Authority of Fiji (regulatory office)	Fiji
ETC	Wilson Leguvaka	TCSI (regulatory office)	Solomon Islands
Logs	Bruno Naskovski	Tonkin and Taylor	New Zealand
Logs	John Leeves	Tonkin and Taylor	New Zealand
ETC	Norman Warput (Operations Mgr)	TRR (regulatory office)	Vanuatu
ETC	Brad Partridge (UAP Consultant)	TRR (regulatory office)	Vanuatu
ETC	Edward Samuel (Network Engineer)	TVL (Telecom Vanuatu Ltd)	Vanuatu
ETC	Andrew Parker (Chief of Vanuatu Field Office)	UNICEF	Vanuatu
ETC	Nettie Collin (Emalus Campus, IT Manager)	USP	Vanuatu
ETC	Fereti Atalifo (Deputy Director, IT Department)	USP / CROP ICT WG	Fiji / Regional
Logs	Baddley Anthony Tarry	Vanuatu Customs	Vanuatu
Logs	Adrian Reynolds	Vanuatu Customs	Vanuatu
ETC	Johnny Sahe	Vanuatu Police Force (VPF)	Vanuatu
ETC	Willie Waiwo	Vanuatu Police Force (VPF)	Vanuatu
Logs	Sarafina Kaloran	Vanuatu Red Cross	Vanuatu
Logs	Suzanna Gislapno	Vanuatu Red Cross	Vanuatu
Logs/ETC	Astrid Boulekone (VBRC)	Vanuatu Chamber of Commerce and Industry (VCCI)	Vanuatu

ETC	David Gibson (Director)	VMGD (Vanuatu Meteorological and Geo-Hazard Department)	Vanuatu
Logs/ETC	Monica Salvitti	WFP	Australia
ETC	Opart Ongwandee	WFP	Thailand
Logs	Faheem Araie	WFP	Italy
Logs/ETC	Joseph Choi	WFP	Italy
Logs	Florent Chane	WFP (Pacific Logistics Coordinator)	Fiji
ETC	Salma Farouque	WFP (Pacific ETC Coordinator)	Fiji
Logs	Alan Johnson	WFP	Fiji
Logs/ETC	Niranchana Singto	WFP	Fiji
Logs/ETC	Tony Freeman	WFP	Fiji
Logs/ETC	Peter French	WFP	Fiji
Logs/ETC	Sanya Ruggiero	WFP	Fiji
Logs/ETC	Jemma Pietrus	WFP	Fiji
Logs/ETC	Anna Young	WFP	Sweden
ETC	Caroline Teyssier	WFP (Global ETC)	Italy
Logs	Meshack Kasa	World Vision	Solomon Islands
Logs	Nini Tamasui	World Vision International	Vanuatu