



**APT-ITU MEETING ON
ROLE OF ICT FOR DISASTER REDUCTION**
28 February 2005, BANGKOK, THAILAND



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PROCEEDINGS OF THE MEETING

A meeting on “Role of ICT for Disaster Reduction” was jointly organized by Asia-Pacific Telecommunity and the International Telecommunication Union on the 28th of February 2005 in Bangkok, Thailand in conjunction with the 2nd Meeting of the APT Conference Preparatory Group for WRC-07 (APG2007-2). This meeting is also a thematic meeting for the 2nd phase of WSIS. The meeting was attended by more than 300 delegates from the APT member countries, APT Affiliated members, ITU, CITEL, CEPT and other organizations. The meeting started by observing one minute silence in the memory of the victims of the Indian Ocean Tsunami and the tragic earthquake which occurred in Iran in February 2005.

Welcoming the delegates of the meeting, Executive Director of Asia-Pacific Telecommunity Mr. Amarendra Narayan expressed his gratitude to the government of Japan for putting forward the idea of holding the meeting on “Role of ICT for Disaster Reduction”. He expressed his gratefulness to Mr. Bistamam Siru Abdul Rahman - Chairman of APT Management Committee, Mr. Utsumi - ITU Secretary General, Mr. Houlin Zhao - Director of TSB, Dr. Michael Calvano - Head ITU Regional Office and other officers of the ITU for their support and cooperation to hold the meeting.

Mr. Narayan also mentioned about the excellent work done by the APG in previous WRCs and the progress made by the group although there was no face to face meeting of the group in 2004. He said that the APT Secretariat will provide all possible support to the group to facilitate their work.

Dr. Michael Calvano - Head of ITU Regional Office in Thailand commended the role played by APG in assisting ITU on World Radio Conferences. ITU is very pleased to support this event and it places high value on discussion that takes place here on that day. Even with so much of development of ICT in the region, it was rather unfortunate that it took so long to get the information on last year’s tsunami. ITU has formed a Tsunami Team for which US\$ 1.1 million has been allocated. The primary objective of this project is to assist countries to develop telecom infrastructure destroyed by tsunami and to implement early warning system.

Mr. R. N. Agarwal Chairman, APT Conference Preparatory Group for WRC welcomed the delegates to the 2nd Meeting of APT Conference Preparatory Group for WRC-07 and APT-ITU Meeting on Role of ICT for Disaster Reduction and congratulated APT Members for extremely successful WRC-03. He said that it was pertinent to note in that context that one of the agenda items at WRC-03 related to public protection and disaster relief was included at the initiative of APG. It is very befitting and timely to convene this meeting jointly with APG wherein APG experts can play a very significant role in prevention of such natural disasters of unprecedented scale of magnitude and management of relief activities in such situations to serve the mankind.

Mr. Agarwal mentioned that while carving out spectrum and orbital resources for introduction of new highly sophisticated technologies, appropriate care need to be taken to afford adequate protection to the existing technologies and services. He expressed confidence that with the expertise of the participants and the spirit of mutual understanding, cooperation and accommodation, APG would be able to achieve the goals satisfactorily.

Dr. Alan Jamieson, Vice Chairman of APG is nominated as the Chairman of the editorial committee by the meeting.

Session 2:

Chairman: Mr. R. N. Agarwal Chairman, APT Conference Preparatory Group for WRC

Giving keynote address Mr. Hideyuki Oku, Director, International Cooperation Division, Ministry of Internal Affairs and Communications of Japan expressed sympathy and condolences to the victims of Indian Ocean Tsunami and earthquake in Iran. The unprecedented disaster has made all of us to work on the development of early warning system and it is observed that the work towards this direction is going on at regional and international level.

Mr. Oku mentioned that proper early warning on tsunami would have greatly reduced the casualties. APT Member countries should work to utilize the Information and Communication Technology to reduce disaster effect. As Japan is prone to many natural disasters including tsunami, she is willing to share her experience and provide assistance to other member countries on disaster warning system and its training.

Giving presentation on ICT in pre-disaster awareness and preparedness Dr. Arnon Tubtiang - Vice Chair of APEC TEL outlined the risks of disaster, type of disasters, possible risks and focused the importance of ICT in every aspect. He described the role of ICT and the national and international collaboration in the Pacific region on tsunami. He spoke on the role of APEC and APEC TEL on disaster management and proposed to develop ICT collaboration in the region.

Mr. Yvon Henri - Head of Space Service Dept., ITU Radiocommunications Bureau gave presentation on ITU-R and ITU-T activities on telecommunications for disaster relief and early warning. He indicated that ITU has a mission of fostering universal access, which includes provisions that help in situations involving disaster. He mentioned that there are four communication scenarios namely; citizen to citizen, authority to authority, authority to citizen and citizen to authority. He said that ITU has so far worked more on the authority to authority scenario but in the awake of tsunami disaster ITU would also increase its activities regarding authority to citizen and citizen to authority scenarios.

He highlighted the important role ITU is playing on disaster communication by referring to the Tampere Convention, WRC-03 decision to reserve spectrum for emergency communications and the standardization work on call priority. He gave brief description of disaster phases and the radio service involved, the ITU-R studies, resolutions and recommendations on disaster prediction & detection, disaster alerting and disaster relief as well as future work activities of ITU-R and ITU-T related to disaster communications. He also reminded the delegates that ITU's work being contribution driven and progress in the disaster telecommunication area would only be concluded if Administrations, Members and Regional Organizations continue to contribute to ITU's work.

Mr. Jong-ok Joo, Director, Ministry of Information and Communications, Republic of Korea gave presentation on disaster warning system with Terrestrial Digital Multimedia Broadcasting (T-

DMB). He informed the delegates that this system provides video, data and CD-quality voice and is being deployed in the Republic of Korea by the end of this year. He said that T-DMB systems

are easy to install, cost effective, spectrum efficient and provide wide area coverage. Great interests were shown by countries including People's Republic of China, UK, France, Netherlands, Germany, and Brazil.

Mr. Bharat Bhatia, Chairman – Spectrum Sub-Working Group 2, APT Wireless Forum gave presentation on global frequency spectrum needs for disaster warning and recovery. He noted that with the increasing number of disaster relief agencies, the communication need is also increasing. It further necessitates global and regional harmonized frequency bands. He informed that Public Protection and Disaster Relief systems are working on narrow, wide and broadband communication. He enforced that for the effective relief communication seamless mobility is very important. He noted that under Agenda Item 1.3 of WRC-03, ITU has already identified regionally harmonized frequencies for Disaster relief on which the AWF is working towards implementation.

Representing International Amateur Radio Union (IARU) Region 3 Mr. David Wardlaw gave presentation on the better utilization of amateur radio service as a resource for disaster communications. He said that amateurs in all countries were very much involved in the tsunami relief effort mainly because the amateurs have designated band, which make it simple for international effort for relief. For disaster relief communication the national regulation should catch up with international regulation in regulating amateur service, which was proved very effective during the last disaster. IARU urges for changes in regulation of amateur radio in case of disaster information.

Giving presentation on the impact on broadcasting infrastructure Mr. Sharad Sadhu, Head of Transmission Technology & Spectrum, Asia-Pacific Broadcasting Union (ABU) informed the delegates that during the last tsunami broadcasting stations were damaged, staff were in disarray and reception facilities were decimated. During the relief operation ABU established contact with affected broadcasters, coordinated relief effort of members and others, issued appeals for relief assistance and made extensive use of website. ABU proposes to establish public early warning systems using broadcasting stations for broadcasting public relief information.

Mr. Ichiro Nagao, Deputy Director of the Ministry of Internal Affairs and Communication of Japan gave a presentation on disaster management in Japan where he talked about disaster countermeasures basic act, management plan, preparedness, emergency response, recovery and reconstruction. He described the communication network used for disaster, use of loud speaker for notification and tsunami specific measures in Japan.

Mr. Shinji Watanabe, Director of the Ministry of Internal Affairs and Communication of Japan gave presentation on the establishment of a radiocommunications system for disaster prevention in Japan. He outlined the objective for the tsunami warning system, announcement to residents, tsunami warning communications system, radiocommunication system for disaster prevention in Japan. He also spoke of the municipal wireless simultaneous transmission system, automation in transmitting information to the public and ways of securing communications in emergency situation.

Giving presentation on tsunami disaster response by IMO, Mr. Hartmut G. Hesse, Senior Deputy Director of International Maritime Organization said that IMO organized IMO/IHO/IALA inter-

agency coordinating meeting in January this year and took active participation at UN World Conference on Disaster Reduction. He spoke of COMSAR 9 and contribution of IMO to the establishment of a tsunami early warning system. He said that IMO is organizing joint IMO/IALA/IHO maritime safety infrastructure assessment and evaluation missions to Indonesia and Sri Lanka.

Mr. Eui K. Koh, President of Asia-Pacific Satellite Communications Council gave presentation on satellite based solutions for disaster recovery and prevention where he said that due to the vulnerability of terrestrial network to the disaster, a back up system based on satellite is always preferred. He outlined different satellite system which can be utilized for disaster prevention network. He described the functioning of broadband interactive bi-directional data, broadband applications and services and applications to prevent natural disaster.

Giving presentation on emergency broadcasting at natural disaster Mr. Markoto Harada, Bureau Chief, NHK Bangkok spoke on the broadcasting guide for tsunami and other natural disaster. A video developed as training material was shown. The video showed how tsunami warning system works in the pacific countries and in Japan. He mentioned that as soon as the NHK get information on tsunami it is broadcasted.

Session 3:

Chairman: Mr. Hideyuki Oku, Director, International Cooperation Division, MIC, Japan

During this session Indonesia, Maldives, Sri Lanka and Malaysia gave presentation on effect of India Ocean Tsunami, extent of the damages and relief measures taken in those countries. The presentations focused on the need for tsunami early warning system. Indonesia informed that 45,318 telephone lines were damaged by the tsunami in Indonesia and it was also informed that mobile system was deployed immediately to serve the disaster affected area. Maldives said five major transmission nodes were damaged, which were restored within a few days. Sri Lanka said that ICT should also be utilized in detecting disaster in conjunction with disaster warning. Malaysia said that the broadcasting services should relay information in coordinating and providing rescue, recovery and relief effort.

Mr. Yukio Toho, Senior Manager NTT East Corporation of Japan gave presentation on disaster countermeasures by NTT group. He described major disaster countermeasures equipment used by NTT and disaster emergency message service known as i-Mode Disaster Message Board Service. He gave example of work done after the Chuetsu earthquake and briefed on the status of traffic congestion and usage of disaster emergency message dial service.

Mr. Yasufumi Ohashi of Panasonic System Solutions Co., Japan introduced disaster prevention solutions system known as Regional Digital Simultaneous Communication System (DOHO), which can warn many sites in the city simultaneously. DOHO can send information in various format including text. He also spoke of emergency warning system using digital broadcasting which can be used for automatic switching to emergency program.

Dr. Fumihiko Tomita of National Institute of Information and Communications Technology (NICT), Japan gave presentation on NICT research for natural disaster reduction. He spoke of the NICT aspects for disaster reduction through sensing, warning system, information & human resource, and data and communication network. He informed the delegates that NICT also provides routines services like time information. He highlighted the importance of remote sensing

for disaster prevention. He spoke of helicopter satellite communication system for disaster relief operation where ground relay stations are not necessary.

Session 4:

Chairman: Mr. Bistamam Siru Abdul Rahman, Chairman of APT Management Committee

During this session, report of the meeting was developed through floor discussion on the draft prepared by the Drafting Committee Chairman Dr. Alan Jamieson. The meeting decided to adopt the report given below.

At the end of the meeting Executive Director of Asia-Pacific Telecommunity thanked Chairman of APG, session chairmen, speakers and the participants for active participation at the meeting and expressed his appreciation on the timely completion of the meeting report.

Report of the Meeting

THE ROLE OF ICT FOR DISASTER WARNING AND RELIEF

Introduction

- The tsunami triggered by the recent 26 December 2004 huge earthquake off the coast of Sumatra in the Indian Ocean brought death and destruction on an unprecedented scale in a moment of time. We would like to express our sympathy and condolences to the disaster victims and afflicted areas.
- This catastrophe moved APT Members to come together to learn from this experience and to exchange views on what role ICT plays in mitigating the effects of such disasters. The members also shared recognition of the importance of the role of ICT.
- APT Members, through the exchange of opinions expressed at the meeting, affirmed that ICT plays an important role in 1) early disaster prediction, 2) communicating and disseminating disaster information to residents as promptly as possible, and 3) ensuring a speedy communication system after a disaster occurs, as well as recognizing the importance of the diffusion of disaster relief telecommunications system in the Asia-Pacific region.

Summary of views and experiences from disaster events

- When disaster events occur getting the best out of high technology based telecommunication systems and infrastructure requires national, regional and international cooperation.
- The occurrence of disaster events cannot be prevented but their impact can be reduced by preparing appropriate advance operational plans, establishing warning systems, training

emergency response personnel, educating citizens and testing emergency procedures.

- Systems for emergency warning and disaster relief need to make use of existing telecommunication and radiocommunication systems as well as new applications of existing broadcasting, amateur, mobile, satellite and fixed services in setting up warning systems and to provide information response systems.
- Responses to large disaster events are likely to involve a large number of relief agencies and relief teams which create severe pressure on requirements for interoperability and cooperation including frequency coordination of radiocommunication systems. Harmonised frequency use has been identified as one approach that leads to improved interoperability.

Attention was also drawn to the relevant activities within the three sectors of the ITU and APT programmes. The need for member countries to participate actively in the studies currently underway on public protection and disaster relief within the ITU and the APT was emphasised.

The way forward

Based on this recognition and experiences the meeting confirmed the following:

- Recognizing that ICT can play a significant role in disaster management including communicating and transmitting information for disaster relief, early warning, risk reduction, etc. to residents as well as gathering information necessary for disaster relief and reconstruction, member countries are urged to promote actively the utilization of ICT in case of disaster, such as strengthening the existing mechanism of a disaster relief telecommunication network/system and developing new systems including, in particular, the wireless communications system for disaster relief, which is useful in case of a disaster.
- Acknowledging the importance of cooperation for disaster relief between national and local governments, disaster management using ICT including developing a disaster relief telecommunication network system that enables smooth information transmission among the central government, disaster prevention-related agencies, local municipal entities, and hospitals, schools and other public institutions as well as developing a disaster relief management mechanism under related organizations needs to be pursued vigorously.
- Recognizing the importance of cooperation among the member countries to work together to tackle disaster management in the Asia Pacific region, as many opportunities as possible need to be provided to enable APT members to exchange views on disaster relief telecommunications systems and share information and experiences among the member countries.
- Building a disaster relief telecommunications system appropriate to the characteristics of each country, positive measures need to be taken to help member countries such as promoting human resources development through the implementation of training courses and providing support in the construction of a system by dispatching technical experts.
- Taking into account the effectiveness of ICT for disaster relief, cooperation among the members for sharing information on regional and international level needs to be further promoted.

- Recognising that telecommunications systems must be accompanied by a high level of community awareness in order to stimulate a culture of disaster resilience, efforts to develop disaster relief telecommunication systems that are integrated into the broader process of developing and strengthening risk reduction institutions and capacities at all levels, in particular at the community level should be promoted.
- Establishing appropriate technical standards and recommendations for disaster early warning and relief systems, immediate initiatives to foster the relevant APT work programmes at the regional level and the ITU process at the global level should be taken.