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Joint Concept Paper

Prepared by ESCAP\IDD and ITU\ROAP

Asia-Pacific Regional Platform for Disaster Communications Management and Capacities

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Introduction

- Commercialized mobile cellular and broadband networks, including satellite-based ones, has provided the technical and infrastructure bases for more accessible capacities than years ago
- 13rd IWGICT meeting suggested ESCAP and ITU to prepare a concept on this topic
- UN General Assembly A/RES/64/251, adopted on 22 January 2010
  - on *International cooperation on humanitarian assistance in the field of natural disasters, from relief to development*
  - Emphasized international cooperation in disaster reduction and emergency response for countries, particularly for developing countries
  - Recommended development of emergency response telecommunication capacities, particularly in assisting the efforts of developing countries

1. Disasters hit without invitation and notification

2. Asia-Pacific experiences 42% of natural disasters, with 65% of their victims, especially 96% in 2009

3. During major disasters, Emergency Communication assisted saving valuable lives …

Information to be communicated for disaster management (1)

- *Prior to disaster event*
  - Information sharing among
    - All components of early warning systems
    - All disaster management information systems
  - Disseminating early warning alert to the public with guidance

Information to be communicated for disaster management (2)

- *Early response stage of major disaster events*
  - Information about the disaster
  - Information flow among different administrative bodies, technical supporting agencies and field teams for
    - Analyzing severity of the disaster, including in-situ and background information, and make them accessible to field actions
    - Activating relevant response plans and organizing and coordinating their implementation
    - Monitoring and early warning secondary disasters
    - Ensuring efficient field mitigation, rescue and relief operations
  - Networks may be congested due to increased traffic

Information to be communicated for disaster management (3)

- *During disaster response, to add more*
  - Survey, mapping and monitoring information acquired by satellite and air-craft
  - News gathering, teleconference and tele-medicine
  - Communication between victims and their family connections
  - Local voice communications becomes more important among rescue and relief teams
  - Effective expansion of handling capacities of both ground- and satellite-based networks
  - Enhancement of airport communication capacities

Communications capacity needs for disaster management

- Both telephony and internet services
- Resilience of local networks
- Reliable reporting and early warning
- Rapid restoration, expansion and installation of communication capacities
- Rapid deployable stand-by equipment and services
- Demonstrated means in recent responses
  - Cellular mobile
  - Satellite mobile
  - Wireless IP, ground- & satellite-based
  - Satellite-based short-message services (SMS)
  - Citizen band radio
  - Global Navigation Satellite System
  - Emergency communication vehicles

Available connectivity in the region

	Fibre Optical	Ground-based Wireless	Satellite
Supported Service Networks	Landline telephone; Cellular mobile; Wired and wireless IP	Wireless IP; Cellular mobile	Satellite mobile; Cellular mobile; wireless IP; Private networks
Normal Services	Most commonly used	Less commonly used	For specific services; For extension of networks; Backup of other telecom infrastructures
Availability	Population centers	Population centers where fibre optical is not cost-efficient	Wide coverage of satellite footprints
Resilience to disaster	Vulnerable	Less resilient	Handsets and portable terminals: robust; VSAT: resilient
Rapid deployment	Not possible	Less easily	Handsets and portable terminals: very easy VSAT: easy
Time for restoration	Days to weeks	Hours to days	Handsets and portable terminals: minutes; VSAT: hours
Rapid installation	Not possible	Hours to days	Handsets and portable terminals: minutes VSAT: hours
Handling capacity expansion	Depending on subscriber network	Depending on backhaul and subscriber networks	Depending on bandwidth assigned to the areas and number of terminals

Problems in disaster communication management and capacity

- Weak resilience of existing terrestrial infrastructure
- Lack of effective telecom disaster response arrangement
- Lack of reliable reporting capacity
- Lack of rapid deployable stand-by capacity
  - For restoration, expansion and installation of cellular mobile and wireless broadband services
  - For accessing satellite-based mobile, Internet & SMS services
  - For cross-boundary services and equipment movement
- Congestion of satellite and cellular mobiles, and Internet services

Capacity gaps could not be bridged easily by developing countries individually

- Development priority for building such capacities that are expected to be rarely used
- Necessary financial and technical capacities
- Capacity to deal with different technical options and relevant operators, service providers and equipment vendors
- Weak negotiation power with satellite operators and equipment vendors, partly due to small markets
- Cross-boundary telecom services and movement of communication facilities
- Establishment of institutional arrangement for disaster management

The lack of access to effective emergency communications in some recent disasters reminded us

While it is the responsibility of Governments to prepare the disaster communication capacities

How to assist less capable counties build the capacities

- **Sharing technical and financial resources for the capacity that is expected to be rarely used**
- **Dealing with different technical options and relevant satellite operators, servicer providers and vendors**
- **Enhancing negotiation power of small markets**
- **Making institutional arrangement for rapid deployment upon short notice**
- **Facilitating cross-boundary services and equipment movement**

Asia-Pacific Regional Platform for Disaster communications Management and Capacities

To provide comprehensive assistance and services at all phases of disaster management to countries in the region in a timely manner.

- Pool resources including equipment, human, funds, and etc
- Rapidly deploy the resources upon request to countries hit by disasters or in emergencies
- Provide extensive telecommunications/ICT services (e.g. telemedicine) for humanitarian assistance and rescue operations
- Assist countries in disaster communications preparedness through putting in place a proper national policy/plan and procedures
- Promoting ratification and implement of the Tampere Convention
- Enhance human capacity at the national level

Concept of a collaborative disaster communication capacity for the region

- As core component of the platform
- To Provide substantive technical support
- To assist less capable countries' affordable access to the life saving communication means
- Through shared infrastructure and services resources
- Used collaboratively when needed
- Two major arrangements for:
  - Rapid deployable stand-by equipment and services for emergency response
  - Pre-disaster distributed capacity for reporting and early warning
- To be built at regional or subregional levels

Rapid deployable stand-by capacity for emergency response (1)

- Each country maintains an agreed number and types of stand-by equipment
  - As basic national disaster communication capacity
- Activated and deployed to response sites and used collaboratively
- Maintained under a agreed list of equipment and services
  - By agreed service providers within or outside the country
- Cross-boundary shipment and deployment are planned in advance
  - According to agreed arrangement and procedure

Rapid deployable stand-by capacity for emergency response (2)

- Specific characteristics to be addressed
  - Uncertainty of location for deployment
  - Short notice and rapid deployment
  - High mobility, easy installation and operation
- Standby equipment may include:
  - Satellite-based mobile & SMS handsets, IP & cellular mobile backhaul & access spots
  - Rapid deployable cellular mobile base stations & restoration and expansion kits
  - Wireless IP backhaul stations & access spots
  - Flight control communication restoration and expansion kits

Pre-disaster distributed capacity for reporting and early warning

- To ensure reliable reporting of disasters from areas prone to major destructive disasters, as well
  - for monitoring and early warning of secondary disasters
  - used as communication means at early response stage
- Through satellite-based mobile and SMS services
- To be built collaboratively by countries with relevant satellite operators
  - Provision of handsets, services, good condition checking and joint training of users for properly reporting of the disasters with the equipment

Technical considerations

- For disaster reporting at community level
  - Satellite-based mobile and SMS through handsets
- Emergency response
  - A set of equipments be identified
  - Minimum amount, types and specifications of equipment agreed by each member
  - The shipment procedures be formulated for major disaster high risk areas
- Other considerations
  - Commercially demonstrated affordability with expressed intention of operators and vendors
  - Compatible with existing services
  - Rapid deployment and installation
  - Identified service providers for maintenance of stand-by equipment

Institutional considerations

- At regional level
  - A coordination body to facilitate relevant discussion towards its realization and future operation
  - Promoting ratification of Tampere Convention
  - Group negotiation of small economies with operators and vendors
- National arrangement by communication and disaster management authorities
  - Requesting and receiving procedure
  - Arrangement for cross-boundary shipment & deployment for high risk areas in advance
  - Inventory of existing capacities among governmental and non-governmental response agencies & organizations
  - Estimation of capacity needs for different possible scenarios
  - Formulation of communication restoration and expansion plans

Financial considerations

- It is Governments' responsibility to equip national disaster management networks with appropriate communication means
- Small economic may not have financial capability to build the capacity
- Resource-sharing principles among relevant stakeholders
- Needs enabling environment
  - Multi-stakeholder and public-private approaches

Multi-stakeholders approach

- Involvement of user communities
  - National disaster management authorities
  - Response agencies at different levels
  - International humanitarian assistance agencies
  - Governmental and non-gov. disaster response organizations
- Joint efforts of development assistance agencies
  - As an important development area
  - Joint efforts of national and regional efforts
  - Joint efforts of multi-lateral and bi-lateral aids
- National coordination and partnerships
  - Among disaster management and telecom authorities
  - Integral part of national disaster reduction strategy & telecom response plan
  - At policy, institutional and technical levels

Public-private partnership approach

- Build on well demonstrated quality products and services
  - To ensure reliability, interoperability and compatibility
  - Most rapidly deployable capacity
  - More affordable and sustainable
- Many satellite operators and equipment vendors have expressed intention to work with UN system
  - Inmarsat, Thuraya, Thaicom, Compass, Motorola, MS. …
  - Some have provided equipment & services through ITU
  - Further interested to develop regional mechanism

Inter-agency cooperation

- Interagency Working Group on ICT
  - Co-conveners of ESCAP, ITU/ROAP and APT
  - Over 20 member agencies in Asia-Pacific
  - Emergency communications identified as a joint work field
  - To joint broaden stakeholder base of
    - telecom authorities and private industries
    - disaster management community
    - development partners & humanitarian aid agencies
    - subregional intergovernmental organizations
    - Professional associations
- UN ESCAP with programmes on ICT & DRR
  - May work as policy intermediary between communication & disaster management authorities
- ITU
  - Long time experience in emergency communications
  - Has provided substantive equipment assistance
- APT
  - With its members of national telecom authorities
  - Emergency communications identified as a priority

Thank you

ESCAP strength & mechanisms in DRR

- Economic-social analysis of disaster impacts
  - Damage and losses assessment (DaLA)
  - Joint Asia Pacific Disaster Report with ISDR
- Space-based
  - Drought monitoring and early warning Mechanism
  - Earth observation satellite information sharing
  - Training network
- Water-related:
  - Mekong River Commission
  - ESCAP/WMO Typhoon Committee
  - WMO/ESCAP Panel on Tropical Cyclones
- Tsunami Trust Fund
- To be promoted
  - Regional disaster communications capacities