

The Critical Role of Emergency Telecommunications and ICTs: Impacts of Natural and Man-made Disasters

**8th Symposium on ICTs, the Environment and Climate Change
First Meeting of the Focus Group on Smart Sustainable Cities
Workshop on Human Exposure to Electromagnetic Fields
6-7 May Turin, Italy**

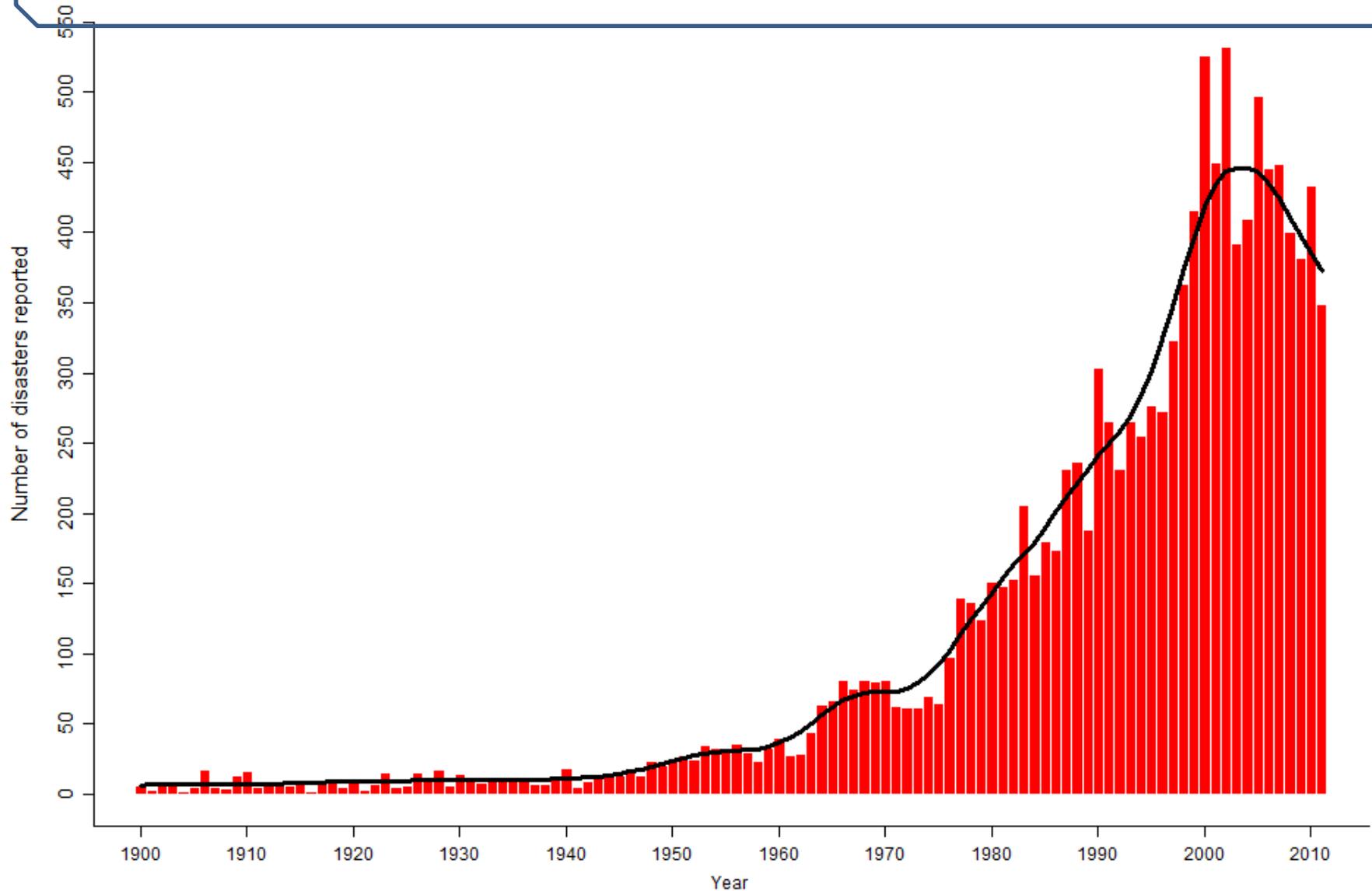
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Natural disasters reported 1900 - 2011

Disasters on the rise



Disasters Affect Everyone

but they impact poor and vulnerable the most

LOW INCOME COUNTRIES ACCOUNT
ONLY FOR 9% OF THE WORLDS
DISASTERS, BUT

48% OF FATALIITIES

1980

2.3 Million people killed by disasters

2011

GFDRR, Source



Recent Big Disasters

- Super storm Sandy October 2012
- Japan earthquake 9.0 and tsunami - March 2011
- Pakistan floods - July 2010 and 2011
- Chile in February - 2010
- Haiti earthquake – January 2010
- China floods - May 2010
- And more



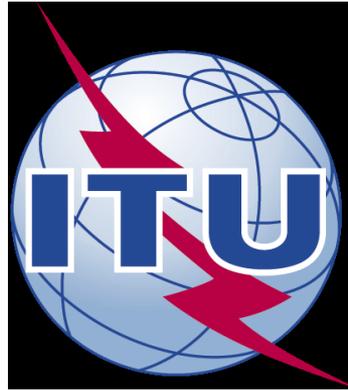
About ITU

ITU

Committed to Connecting the World

ITU-T

Telecommunication
standardization of
network and service
aspects



ITU-D

Assisting implementation
and operation of
telecommunications in
developing countries

ITU-R

Radiocommunication
standardization and
global radio spectrum
management

193 Member States
700+ Sector Members, Academia



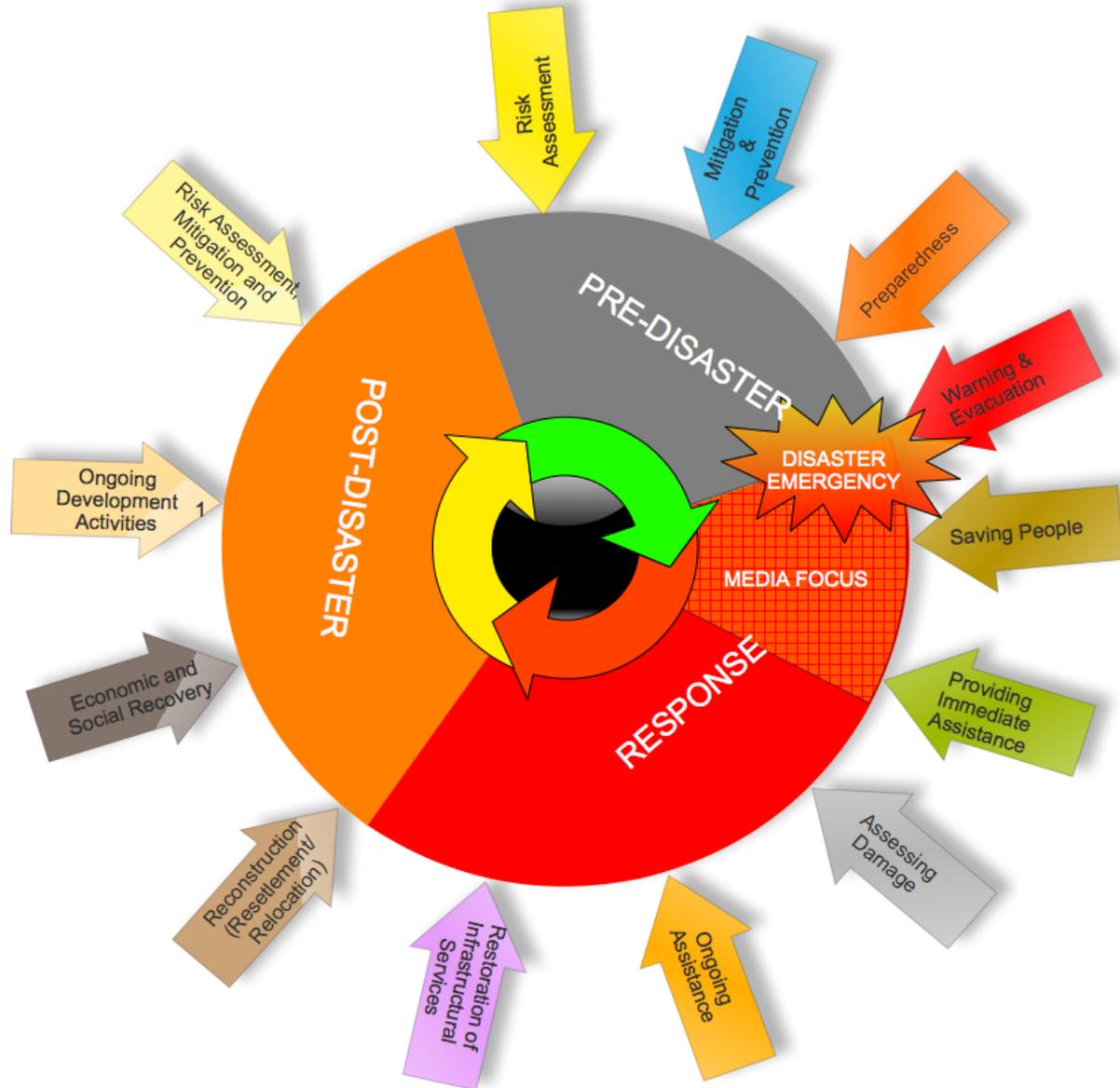
Why emergency telecommunications?

- Alert the population before, during and after the disaster
- Convey information necessary for important decision-making during all the phases
- The coordination during the interventions between the different actors

Saving Lives



Disaster Lifecycle Phases



ITU & Emergency telecommunications

- Emergency telecommunications is an integral part of Telecommunications Development Bureau (BDT). Emergency telecommunications unit implements **activities** related to telecommunications/ICTs in disaster management and disaster risk reduction.
- Our work can be summed up in four principles:
 - Multi-hazard
 - Multi-technology
 - Multi-phased and
 - Multi-stakeholder



Areas of action

1. Disaster Risk reduction: focuses on the mitigation and preparedness aspects of the emergency cycle
2. Disaster Management: a systematic process that aims to reduce the negative impacts or consequences of adverse events.
3. Climate change mitigation and adaptation: a response that seeks to reduce the vulnerability of natural and human systems to climate change effects.

Key Activities of ITU

- Designing National Emergency Telecommunications Plans and formulating Standard Operating Procedures
- Deploying telecommunication resources during emergency situations such as satellite telecommunications equipment for voice and data services to support communication needs in the field.
- Human and Institutional Capacity Building
- Assisting countries to formulate policies and draft appropriate regulations for emergency telecommunications
- Forging stakeholder partnerships as a form of resource mobilization, etc.



Key Activities of ITU

- Project Development and Implementations (Early Warning Systems, Remote Sensing, etc.)
- Development of manuals, handbooks, etc.
 - E.g. implementation of X.1303 (CAP1.1)
- Assistance in Telecommunications Infrastructure Reconstruction

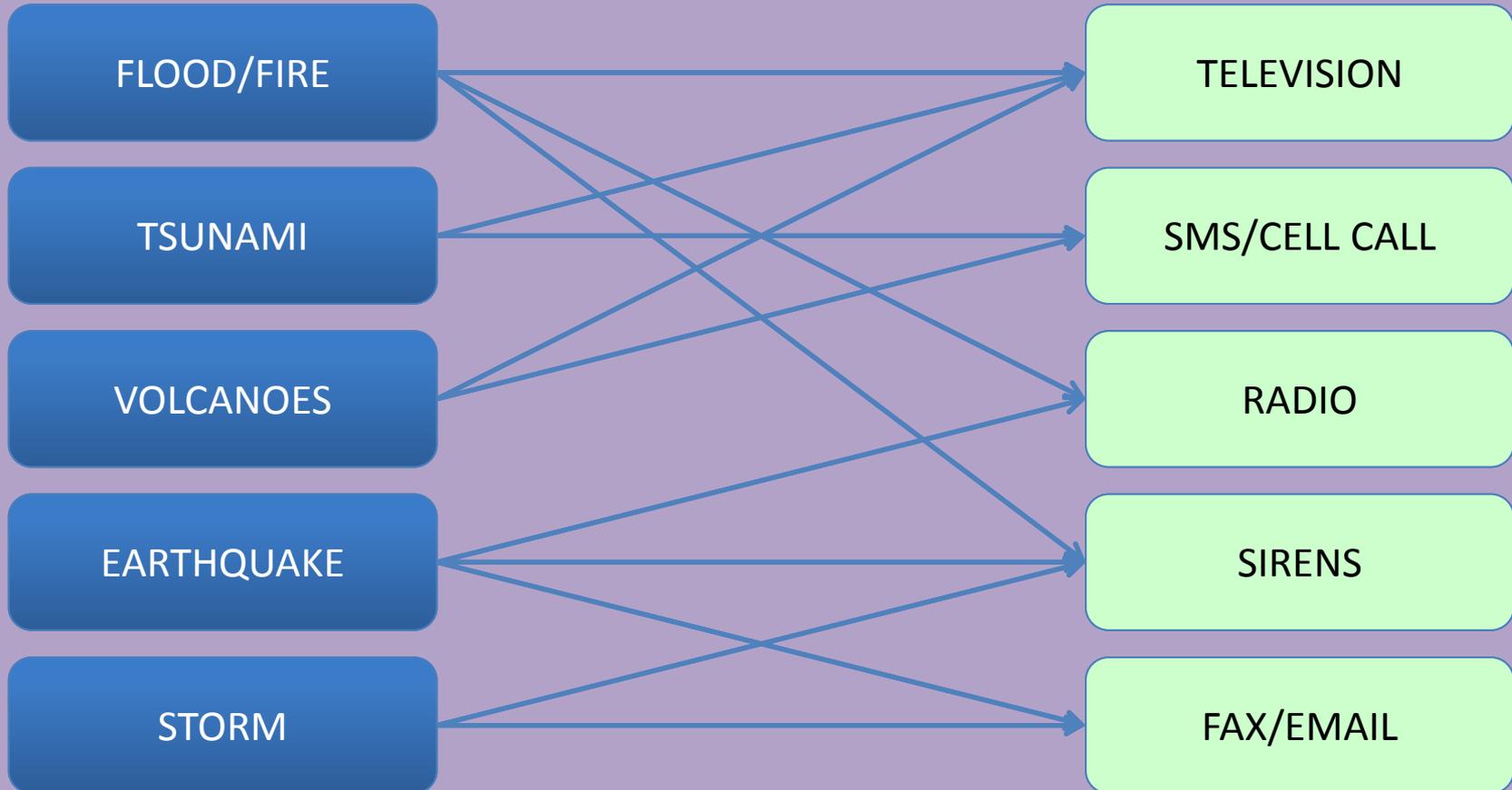


DIFFERENT ALERTING SYSTEMS

AND SO ON

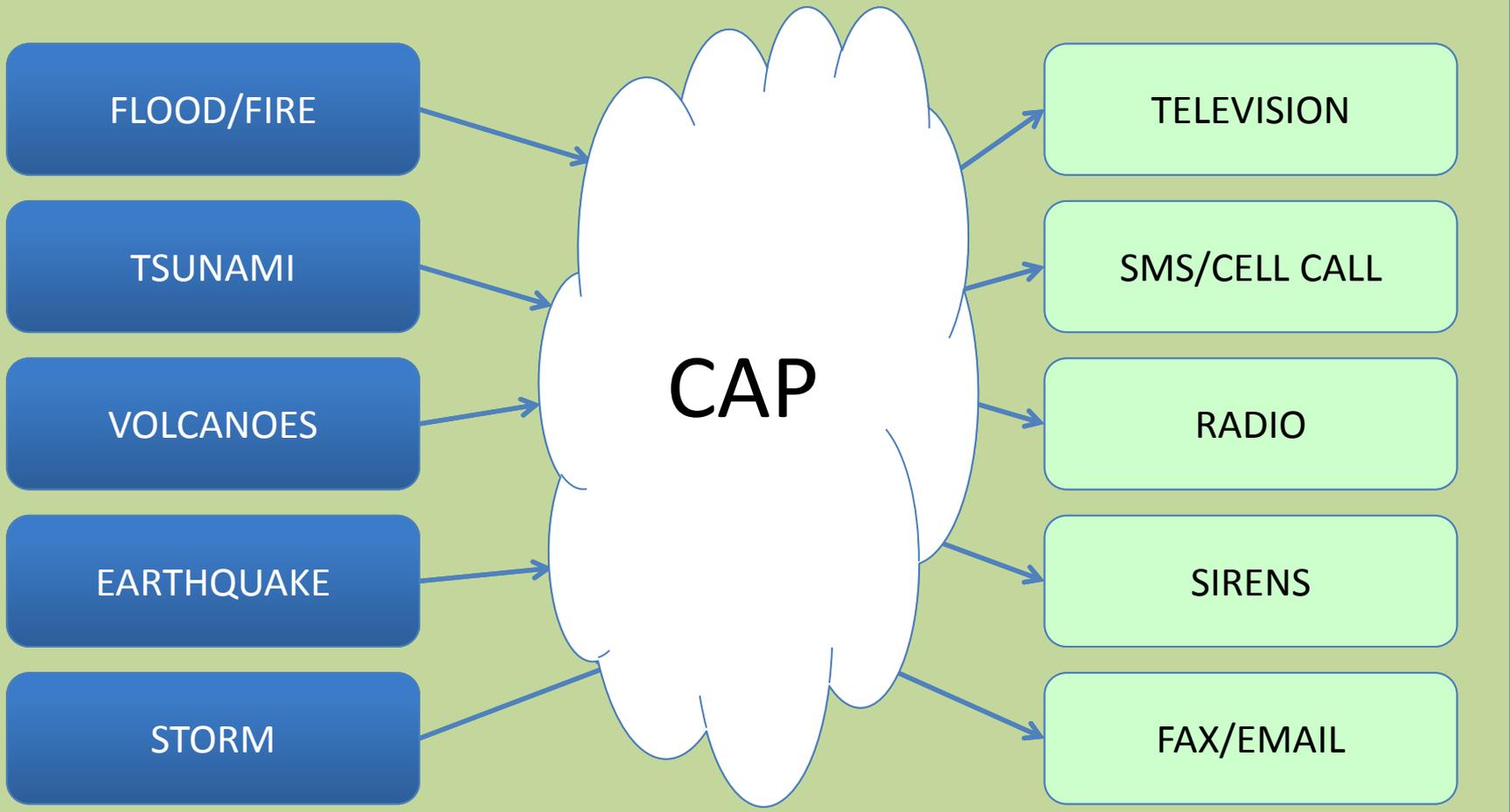
ANOTHER CITY/PROVINCE/COUNTRY

ONE CITY/PROVINCE/COUNTRY



X.1103 – Common Alerting Protocol

ANY CITY/PROVINCE/COUNTRY



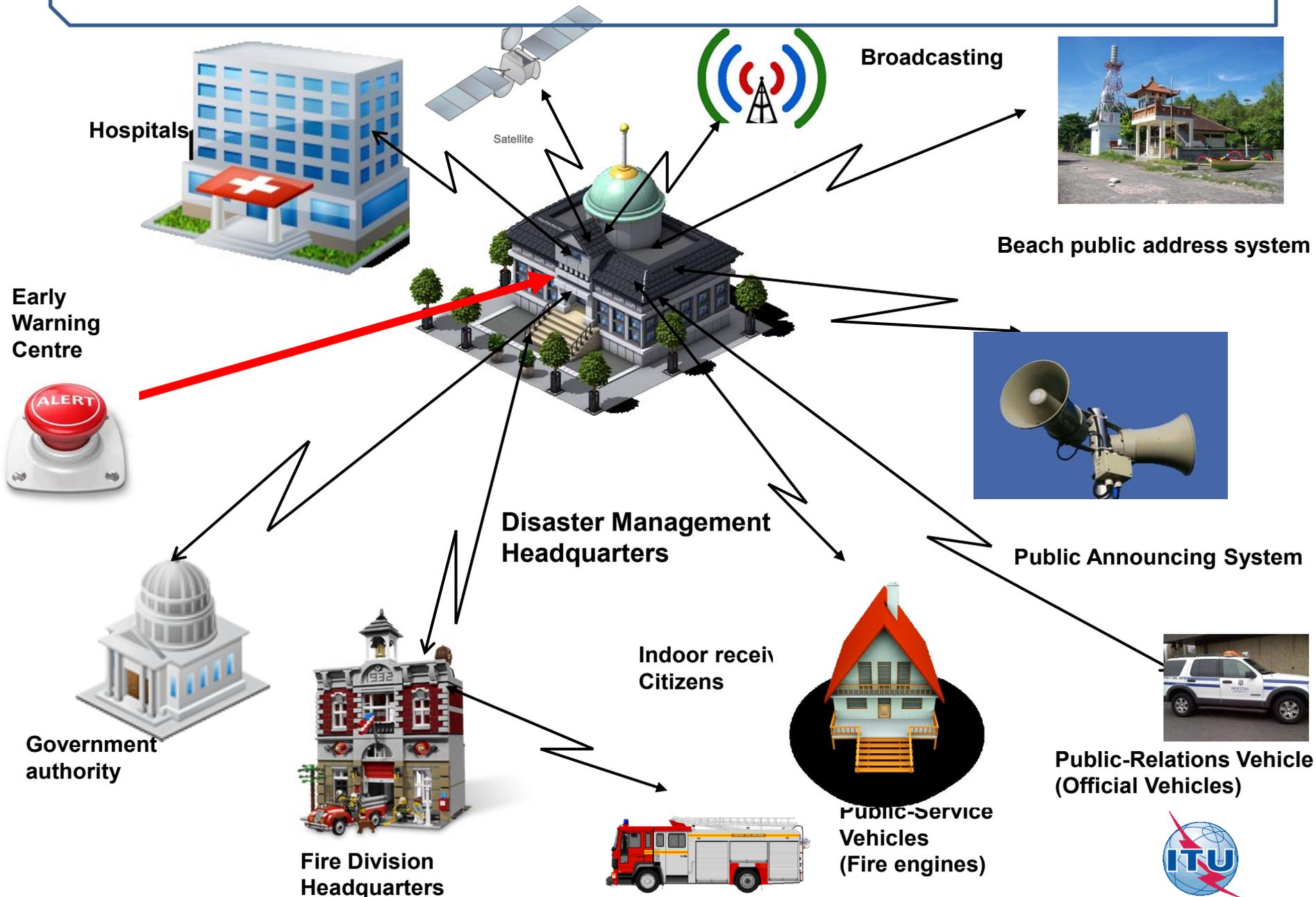
Role of Telecommunications/ICTs

Services	Tasks
<ul style="list-style-type: none"> • Meteorological services (meteorological aids and meteorological-satellite service) • Earth exploration-satellite service 	<ul style="list-style-type: none"> • Weather and climate prediction. Detection and tracking of earthquakes, tsunamis hurricanes, typhoons, forest fires, oil leaks etc. Providing warning information
<ul style="list-style-type: none"> • Amateur services • Broadcasting services terrestrial and satellite (radio, television, etc.) • Fixed services terrestrial and satellite • Mobile services (land, satellite, maritime services, etc.) 	<ul style="list-style-type: none"> • Receiving and distributing alert messages • Disseminating alert messages and advice to large sections of the public • Delivering alert messages and instructions to telecommunication centers for further dissemination to public • Distributing alert messages and advice to individuals
<ul style="list-style-type: none"> • Amateur services • Broadcasting services terrestrial and satellite (radio, television, etc.) • Earth exploration-satellite service • Fixed services terrestrial and satellite • Mobile services (land, satellite, maritime services, etc.) 	<ul style="list-style-type: none"> • Assisting in organizing relief operations in areas (especially when other services are still not operational) • Coordination of relief activities by disseminating information from relief planning teams to population • Assessment of damage and providing information for planning relief activities • Exchange of information between different teams/groups for planning and coordination relief activities • Exchange of information between individuals and/or groups of people involved in relief activities

Role of Telecommunications/ICTs

Services	Tasks
Earth Observation Satellites & Geographic Information Systems (GIS)	Allow to establish extensive and accurate knowledge of Country Situation and areas at risks
Global Navigation satellite systems (GNSS/ GPS)	Allow to complement the Earth observation data with geographical ground truth Information in real time
Earth Observation Satellites and Meteorological Satellites	Allow to predict, monitor in real time, raise timely awareness and alert on disasters occurrence for rapid decision making and life saving
Satellite Communications	Essential for communicating during emergencies
Land Observations Systems	Allow to monitor different types of natural hazards and to reduce the vulnerability of the communities

Role Telecommunications/ICTs in Disaster Management



Importance of ITU's Assistance

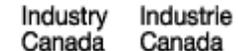
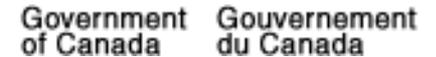
Providing a communication equipment for the government that is critical in:

- Coordinating rescue and relief operations;
- Setting up telemedicine links between hospitals and medics in the field;
- Providing call centers where disaster victims can contact their loved ones.
- Coordinating infrastructure recovery/re-building operations.

ITU bears the costs for the delivery of equipment, service subscription and airtime charges.



POWER OF PARTNERSHIPS



ITU Framework for Cooperation in Emergencies (IFCE)

Technology Cluster

- Satellite Operators and Service Providers
- Land Earth Station Operators
- Telecom Operators
- GIS and Remote Sensing Operators
- Radio Communication Equipment Providers

Financial Cluster

- Governments
- Private Sector
- Development Banks
- Regional Economic Groups
- Philanthropic foundations
- International Organizations

Logistics Cluster

- International Couriers
- Air-Transport Operators
- National Airlines
- International Organizations



Need Assistance?

- Always send your requests to the ITU/Telecommunication Development Bureau (BDT)
- An agreement will be signed between ITU and the requesting country
- ITU will respond quickly to meet the needs



Concluding Remarks

- Develop National Emergency Telecommunication Plans (NETP) as a strategy of National Disaster Management Plans
- Develop Standard Operating Procedures
- Establish multi-disciplinary partnerships
- Develop and use ICTs for disaster prediction, detection monitoring, and response
- Design and Develop Early Warning Systems
- Establish collaboration platforms to share information for better preparedness and response
- Strengthen Institutional Capacities through training
- Link the Development and Disaster Management Agendas to optimize the use of resources.



Thank you

