



総務省

Ministry of Internal Affairs and Communications

Emergency Telecommunications as the ASP Regional Initiative

Japan's International Contribution in the Field of ICT for Disaster Risk Reduction

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Disaster Impact all over the world since 2000-2012

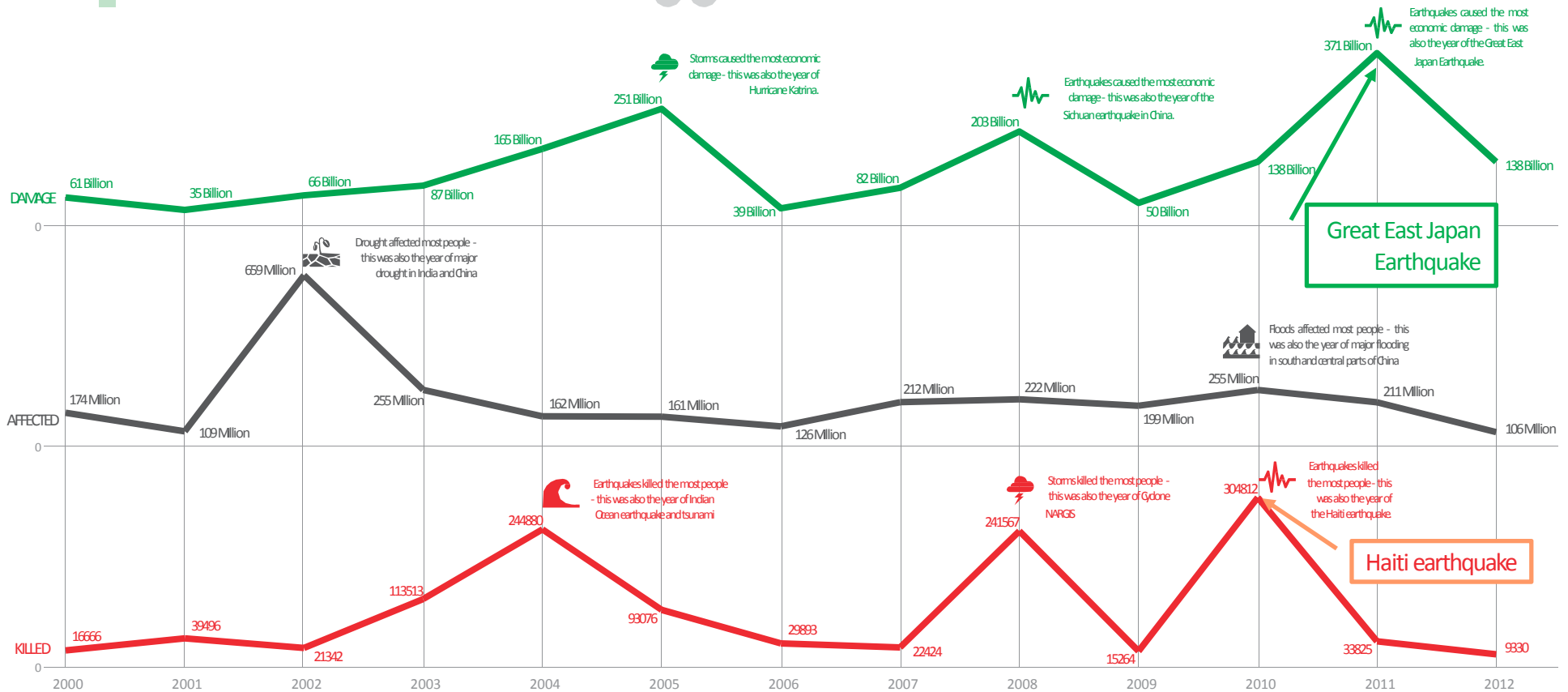


Source : UNISDR

\$1.7 TRILLION
DAMAGE (USD)

2.9 BILLION
AFFECTED

1.2 MILLION
KILLED

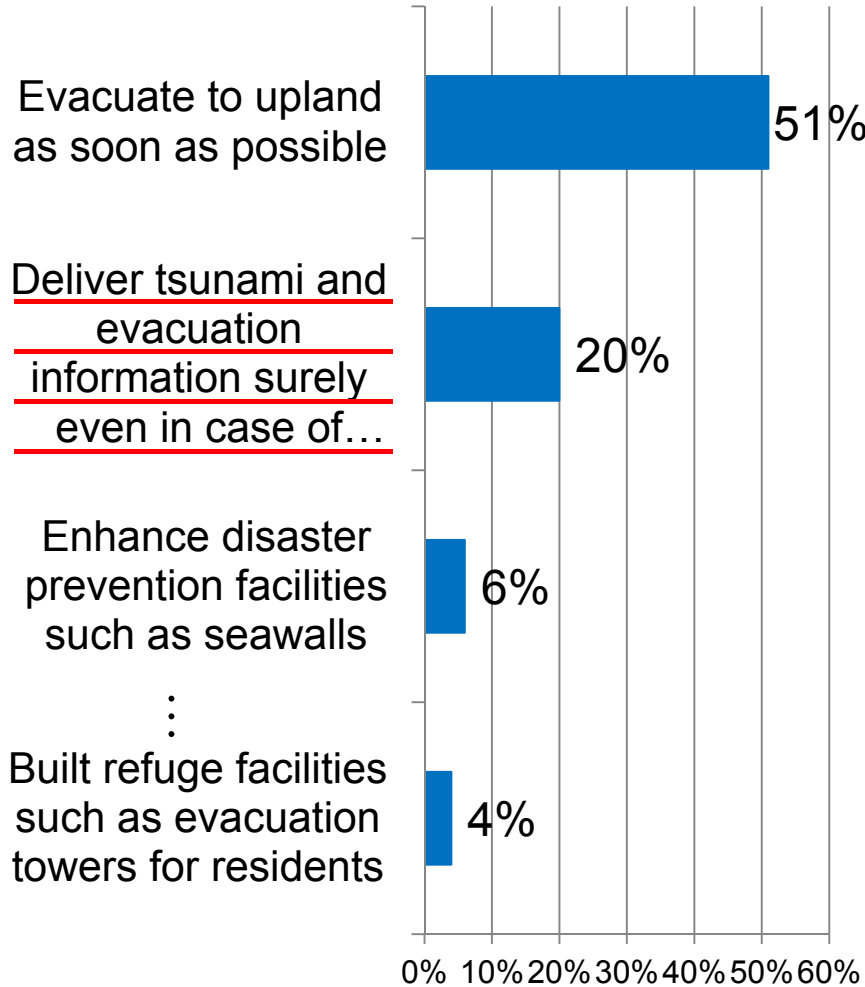




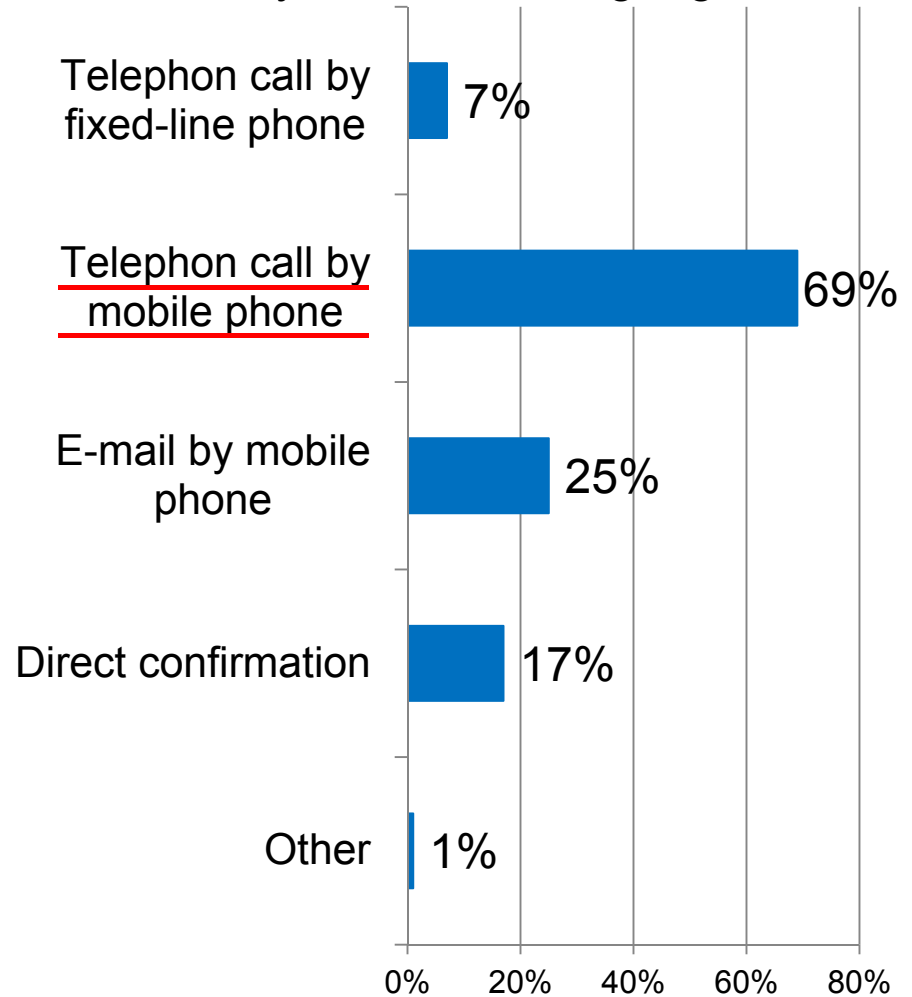
Lessons from the Great East Japan Earthquake



Most important counter measures to protect a community from tsunami



Method to confirm safety of family members living together

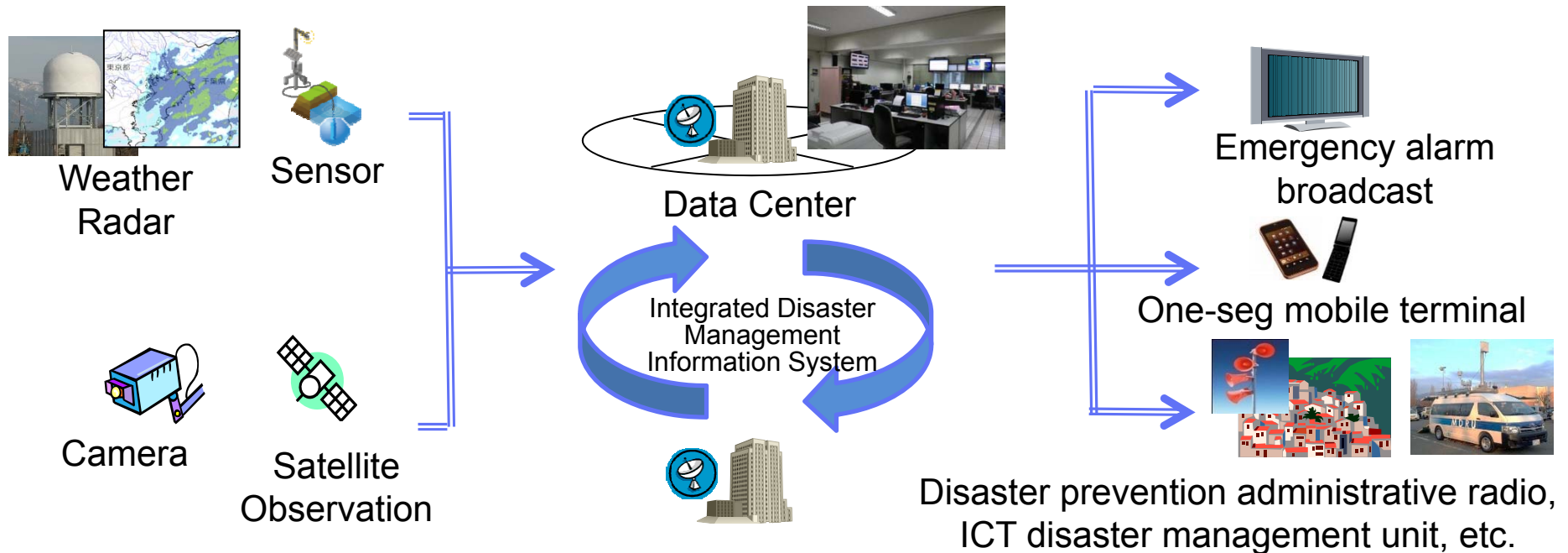


Source: Special Working Group of the Cabinet Office

To communicate with each other and to gather correct information from telecommunication network are important at a disaster.



- Information distribution is an important factor for disaster management.
- Effective and efficient disaster management is made possible by ICT.
- ICT for disaster management can be classified into 4 stages.





Disaster Management as the Asia-Pacific Regional Initiatives

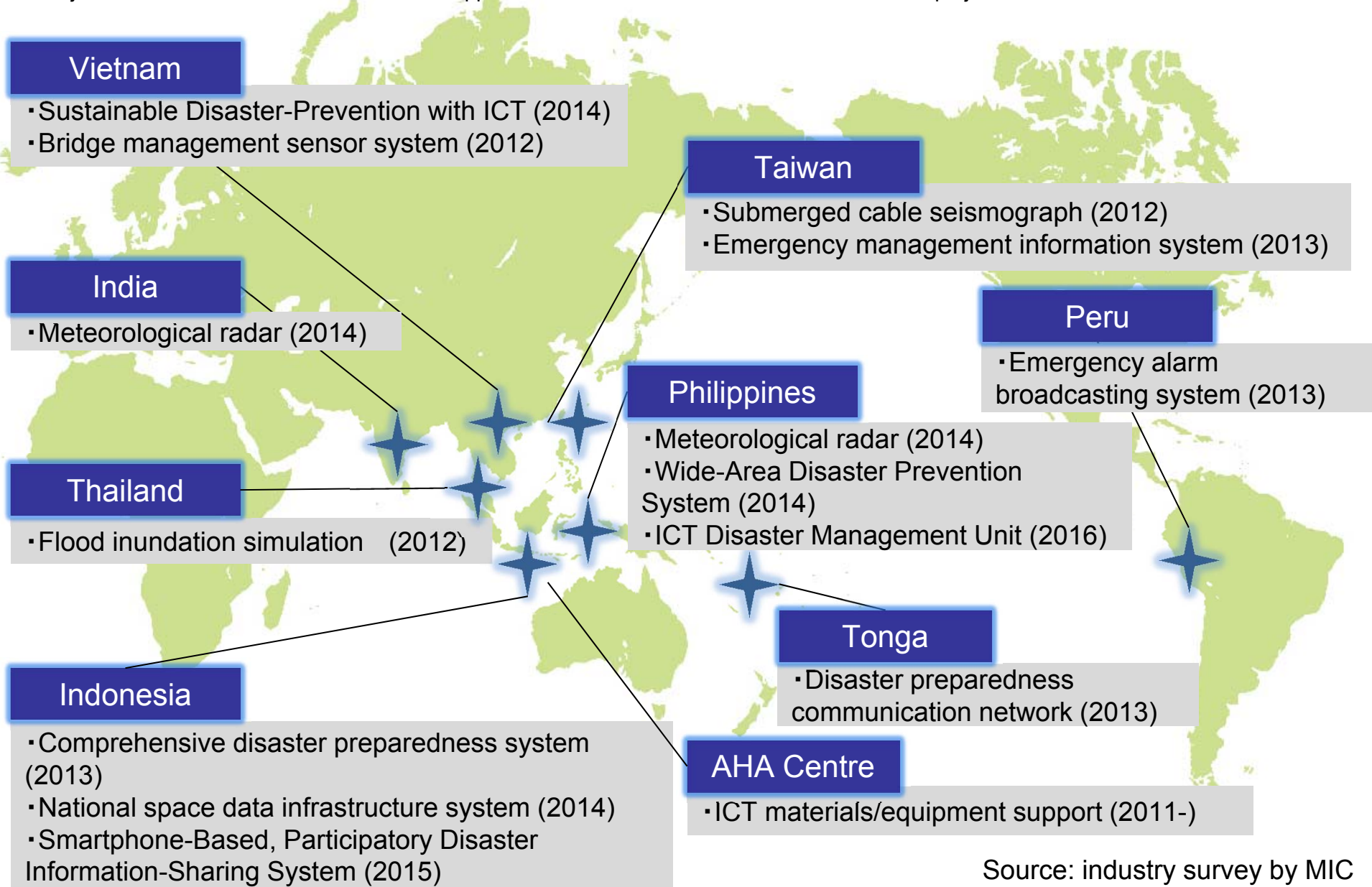


International Contribution in Disaster Management



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* Projects which the orders were received or supports were determined in and after FY2010. Pilot projects are not included.



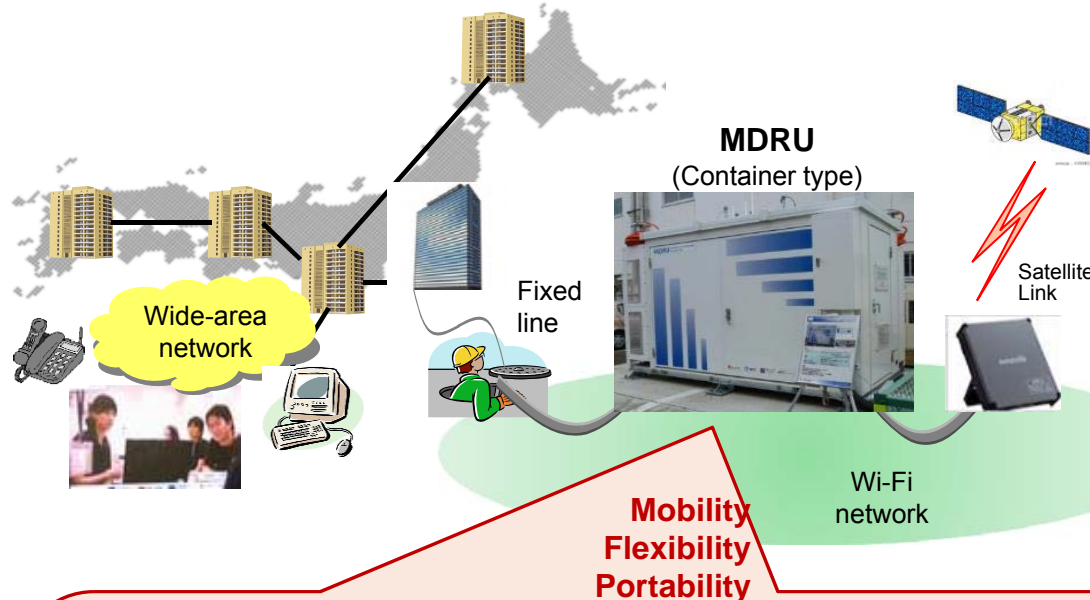
Source: industry survey by MIC

Distribution: ICT Disaster Management Unit



Movable and Deployable ICT Resource Unit (MDRU)

Communications equipment to be carried to a disaster-stricken area in order to immediately restore a communications network. The Ministry of Internal Affairs and Communications (MIC) did research and development of the MDRU, in response to the lessons learned from the Great East Japan Earthquake.



Key Features of MDRU

- Easily provide a Wi-Fi network and a server in a disaster-stricken area. Communications with outside areas by a landline and a satellite link.
- Voice and data communications (email, file sharing, and the Internet) available using the smartphone and the phone number same as usual.
- Compact car type or a portable attache case type..
- Also serves for daily use.

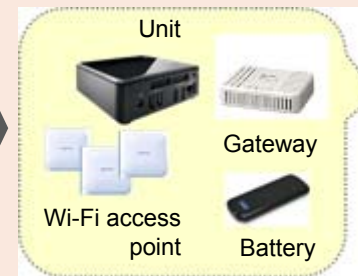
Car type MDRU



Equipped with a main unit (server/PBX), Wi-Fi base station, FWA equipment, and generator.

More small (install basic functions)

Attache-case type MDRU



Joint Project Background



- In November 2013, the MDRU won a prize of the contest* organized by ITU.
- *ITU-MCMC Contest to Promote the Transformational Power of Broadband—Connecting at the Roots
- In the same period, Super Typhoon Haiyan (Yolanda) hit Philippines and caused a large-scale damage. The damage of municipality of San Remigio, located in the north of Cebu Island, was the worst, and the communications network infrastructure suffered from catastrophic damage.
- The Philippine government paid attention to the MDRU, and requested test installation of the MDRU for the emergency restoration of the typhoon-affected area of Cebu Island. Following the request, ITU, MIC, and the Department of Science and Technology (DOST), Philippines, agreed to conduct a feasibility study of the MDRU. (May 2014)

<Damages caused by Typhoon Haiyan (San Remigio, Cebu Island)>



<MDRU won the prize of the contest>



ITU, MIC and DOST
concluded an
cooperation agreement.

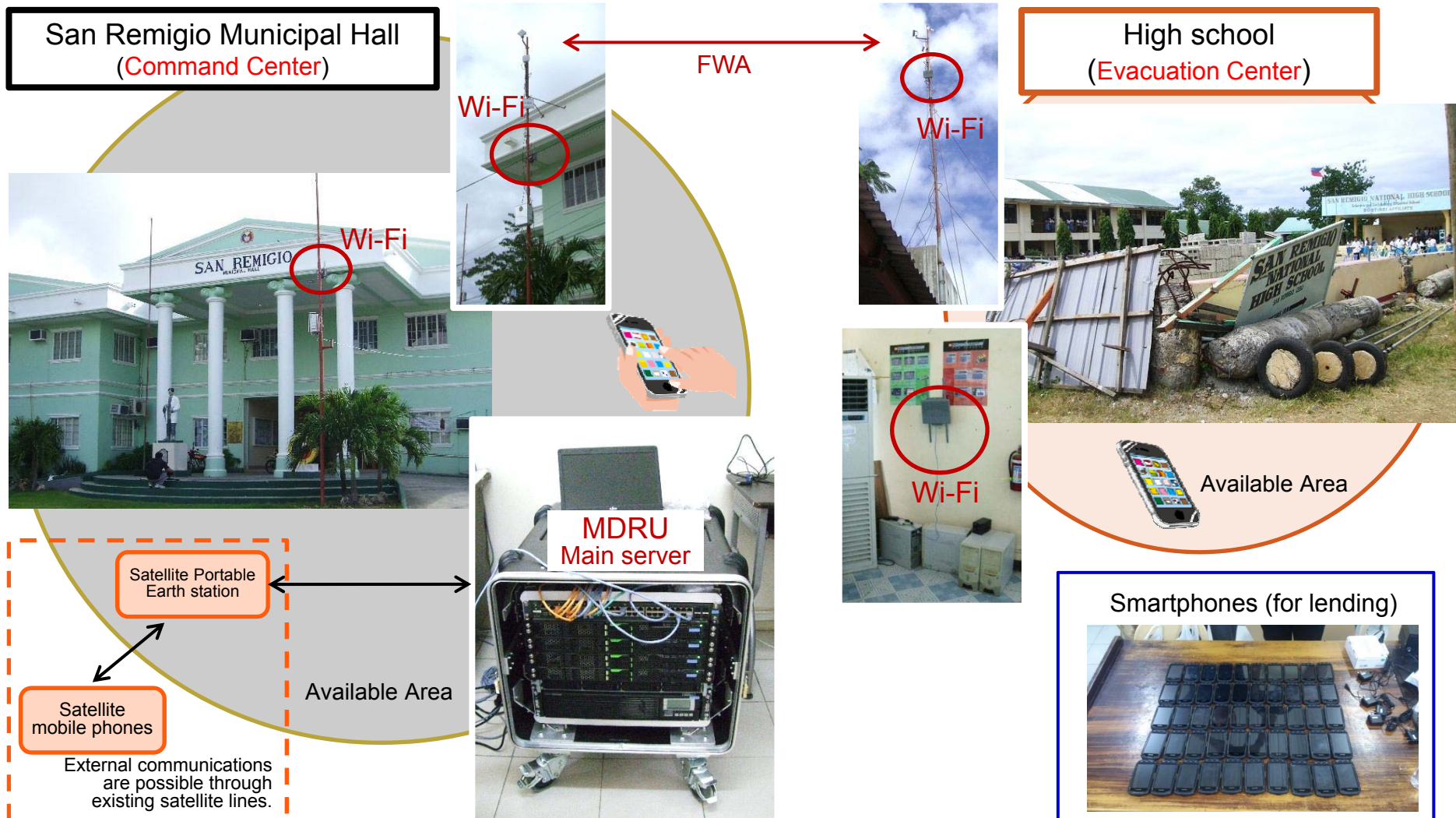
**Concluded an agreement of
MDRU joint project**



Feasibility Study System



- Carried out the Feasibility Study. (Term: December 2014 ~ March 2016)
- Installed the MDRU in the typhoon-stricken area of Cebu Island, Philippines. (Location: San Remigio)
- Tested voice and data communications using Wi-Fi networks at the Command Center and Evacuation Center. (Approximately 500m)



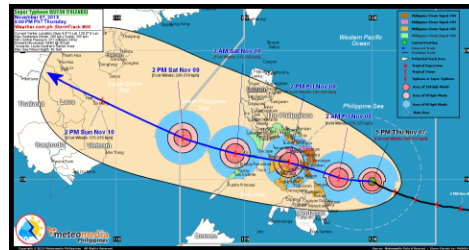


Disaster Drill



A disaster drill was conducted to prepare for a huge typhoon and some lessons have been learned. With this, the disaster management plan of San Remigio municipality has been revised.

- A huge typhoon is approaching San Remigio.
- The disaster command center is opened in the municipal hall.
- The disaster cause power outage and no fixed telephone or mobile phones are available.



(source: Meteomedia Philippines)



<Scenario>

1. Starting the power generator.
2. Starting the MDRU installed in the municipal hall.
3. Installing Wi-Fi access point in the high.
4. Taking photos in affected areas and browse the file.
5. Directions from the Mayor through a voice call
6. Making a list of victims and browse the file.
7. Providing relief supplies

(3. Installation of Wi-Fi access points)



(5. Voice Communications)



San Remigio mayor



(6. Confirmation of victims)



(7. Providing relief supplies)



MDRU-employed Support Activities for Kumamoto Earthquake Disaster (Immediately after Disaster through Recovery Phase)



In response to the huge earthquakes that hit Kumamoto Prefecture, we transported MDRUs to Takamori Town in the Prefecture and provided an Internet-access service and a voice call service at the town office and a shelter. A branch of MIC Japan there is still ready to offer some MDRUs by requests from local governments and other organizations.



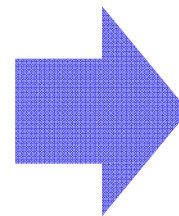
MDRU with NICT's vehicle-mounted satellite base station



Internet-access service



Residents using the Internet to collect information in a shared space



Voice call service

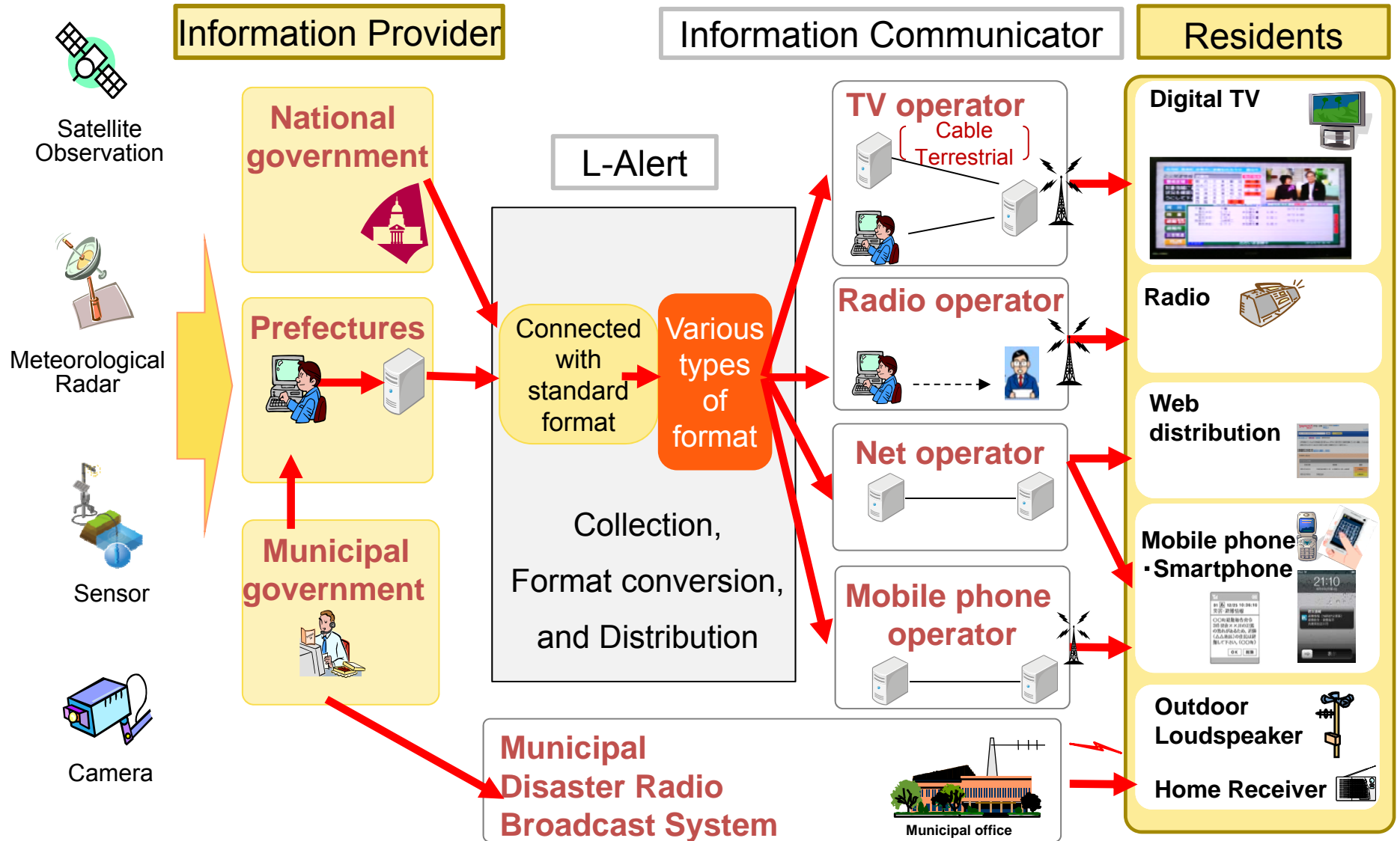


MDRU with Docomo's satellite-based mobile phones



Staff member using his smartphone to make a call via satellite at his desk

Distribution: Disaster Information Delivery to Residents



※L-Alert : 832 groups including 47 prefectures are participating. (33 out of 47 prefectures distributes information in practice)
 Direct information distribution without L-Alert from information provider also existed.



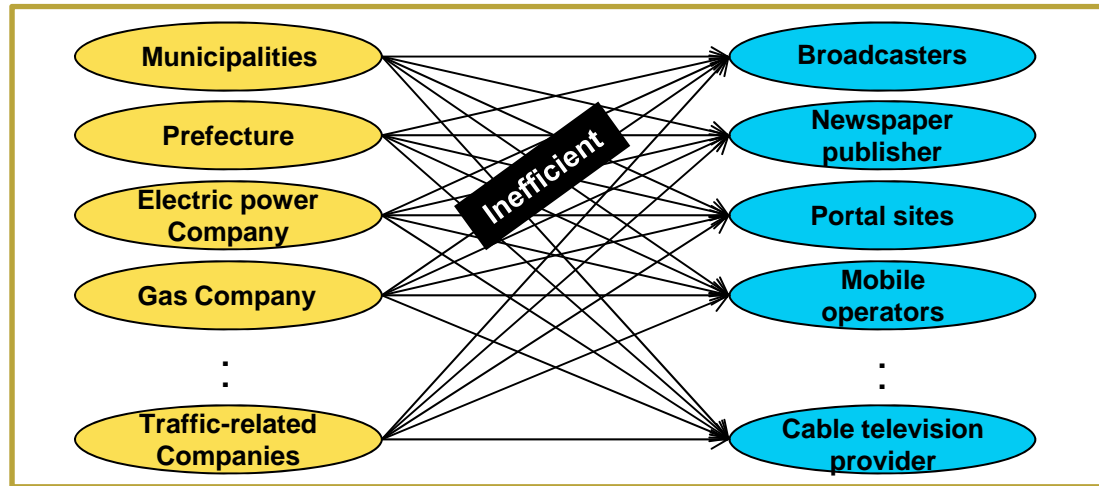
➤ Communication path

<Before>

N by N model

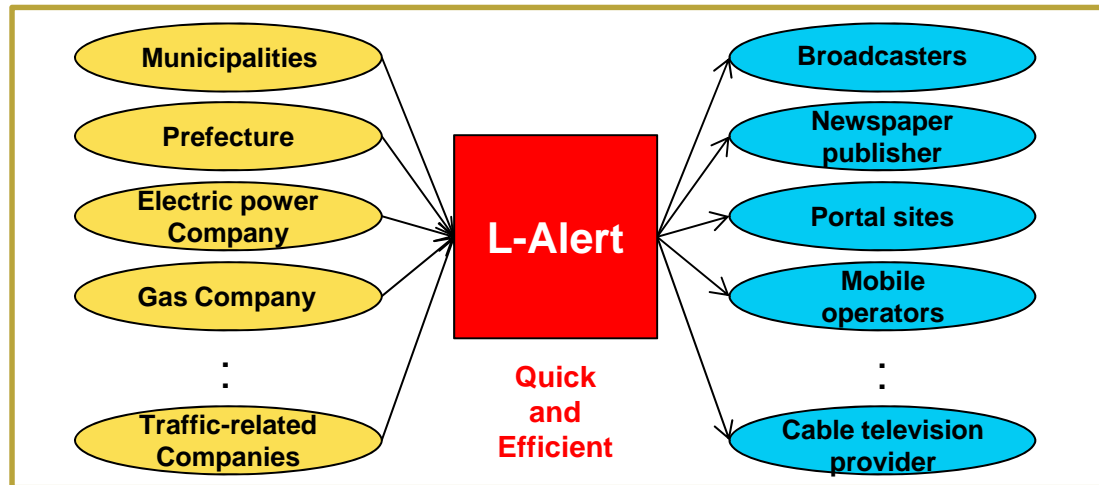
Information providers

Information Communicators



<After>

L-Alert model





Progress of L-Alert in 2016



- 40 of 47 prefectures have implemented this system and another 7 prefectures have a plan within 2 years.
- 82% of towns have implemented.
- 603 distributors (terrestrial TV, CATV, radio, newspaper, signages)
- 59 gas companies (72.6% users coverage) joined to provide information of gas supplying
- Electric companies joined to verification experiments.
- Metrological agency started to provide eruption information in this year
- Trainings and drills are carried out periodically.
- Japanese government promotes to distribution this system strategically and check their progress periodically.

These might be useful as indicators for disaster risk management



- After the Great East earthquake MIC enhanced policies for quick restoration of ICT infrastructure when a disaster happens.
- These measurements ensured these effects at the Kumamoto earthquake in last April.
- Japan is contributing to international communities through the ICT disaster risk management solution.
- Especially in Asia-Pacific Area, due to its high disaster risk, emergency telecommunication should be regarded as one of the critical regional initiatives.
- Japan has been fully supportive to Asia-Pacific countries and we would like to continue to collaborate in the field of emergency telecommunications.

Thank You for your kind attention!

**Ministry of Internal Affairs and Communications,
JAPAN**