### DISASTER RISK MANAGEMENT INFORMATION SYSTEMS IN TAIWAN

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- Taiwan has been implementing National GIS Projects for more than 20 years.
  - Many nationwide maps, concerning topography, cadastre, transportation, geology, water, soil, vegetation, land use, etc., have been established.
  - SPOT and FORMOSAT-2 imagery are popularly used .
- Census, social, economic statistics are regularly surveyed.
- Based on the Information Infrastructure, Disaster Management Information System has been promoting, establishing, and improving for more than 10 years.



### FUNCTION MODULES OF EWS

#### **Disaster Analysis and System Integration** Output Integrated with **QPE-SUMS** Radar System Rainfall Input Meteorology Division Forecasting Automatic Estimation of Data Information for **Inundation** Areas Inundation Flood and Drought Warehouse Post-Disaster Recovery Disasters Reduction Division Potential Automatic Estimation of Debris Debris Flow Flow and Landslide Areas Metadata Potential Slopeland Establishment Disaster Reduction Division Integrated with TELES System Hazards Maps Data Disaster Reduction Division Standardization **Risk Assessment** Data Real-Time Information Risk Analysis of Toxic Substance Visualization Rainfall Monitoring Release **QPE-SUMS** Radar System Technology and Manmade Management Water Information Of Software Disaster **Disaster Investigation Information** and Hardware Investigation System Information Division Common Platform for Data Sharing Web-GIS (GUI Interface) Governmental Information Agencies and for Early NGOs

**Decision Makers** 

Jsers

Warning

### THE SYSTEM NETWORK OF EWS



# THE FRAMEWORK OF COMMON PLATFORM FOR DISASTER INFORMATION SHARING AND EXCHANGE





### FUTURE WORKS (1/3)

- Instant disaster information collection for remotely mountainous area using
  - UAV: Unmanned Aerial Vehicle
  - SAR: Synthetic Aperture Radar
  - MVLAN: Multi-hop Mobile Virtual LAN
  - Sensor network
- A Governmental Computing Cloud Project for disaster management has been announced recently. To fully take advantage of it, following tasks should be done:
  - Establishing real-time information updating and sharing mechanisms
  - working with the NGIS program,
  - teaming up the information divisions of associate research centers,
  - establishing a data warehouse as a common platform with an XML/GMLbased data exchange standards,
  - developing Web Processing Service (WPS),
  - joining international cooperation projects.

### FUTURE WORKS (2/3)

- In addition to computer/telecommunications hardware and software, information flow should be examined and improved. In particular, bi-directional emergency information exchange and check mechanism should be built up.
- Human factors should be further studied and elaborated. Communications and interpretations among researchers, governmental officers, NGOs, NPOs, local communities, and general citizens, should be greatly improved.
- Ontologies for disaster risk management and response should be studied and implemented.

### FUTURE WORKS (3/3)

- The disaster management information system should be gradually upgraded to a real decision support system, where more intelligent reasoning and prediction models should be installed together.
- Scenario-based simulation and training systems should be developed for the general public, response teams, and commanders.

## THANK YOU FOR YOUR ATTENTIONS