Introduction of Sichuan Surveying and Mapping Emergency System
Background

Sichuan province is one of the most serious provinces in China which suffered from the natural disasters deeply. Various types of disasters happened with wide distribution, high frequency and heavy losses. Notable events include the 2013 Lushan Earthquake, 2013 Wulipo Landslide, and 2014 Kangding Earthquake.
Background

Based on the urgent needs of geo-information and service for disaster, Sichuan Bureau of Surveying Mapping and Geoinformation (SCBSM) started to establish an emergency service system for surveying and mapping (SCESS), and regards this as the focus point to serve provincial government.

From 2011 to 2015, SCBSM has got 650 million Yuan from Sichuan provincial government for fundamental surveying and mapping work, and used 140 million Yuan of the funds for emergency service system construction.
One database, Three centers and One system

Provincial high resolution geo-disaster database

Emergency command center for surveying and mapping

Engineering technology research center of emergency and disaster control

Emergency safeguard center for surveying and mapping

Unmanned aerial vehicle (UAV) cluster disaster information acquiring system
Provincial high resolution geo-disaster control database

The database contains high resolution aerial photograph and satellite image, topographic data and thematic data used for geo-disaster control.
Sichuan Emergency Command Center for Surveying and Mapping

This is the first time for a provincial surveying and mapping organization to build emergency command center in the country.
To support emergency command, SCBSM has developed
1. An emergency response pre-plan
2. A coordinated response mechanism
3. An emergency guarantee team
4. A geoinformation command platform.
(1) Pre-plan

Provincial government emergency center

Municipal government emergency center

NASG

Learning disaster situation

Activating pre-plan

Decision deployment

Team collection

Acquiring and processing data

Open the green channel

Collecting existing GIS data

Data transmission

Loading data to platform

On-line GIS service

Thematic map making

Data offering

Procedure of emergency service work
Sichuan Emergency Command Center for Surveying and Mapping

(2) Coordinated response mechanism

- NASG
- Provincial emergency committee
- SCBSM
- Municipal Surveying and Mapping Departments
- Sichuan Surveying and Mapping emergency command center
- Provincial geo disaster emergency headquarters
- Provincial earthquake relief headquarters
- Provincial forest grassland fire command headquarters
Sichuan Emergency Command Center for Surveying and Mapping

(3) Emergency guarantee team
Sichuan Emergency Command Center for Surveying and Mapping

(4) GIS Emergency Command Platform
Engineering Technology Research Center for Emergency and Disaster Control

Aim at International and national major demands on disaster prevention and reducing, resolve key technology and application engineering issues.
Major duties:
1. Responsible for the on site disaster or emergency safeguard work;
2. Responsible for GIS data collection, updating and processing of the major monitoring area for disaster.

Emergency Safeguard Center for Surveying and Mapping
UAV Cluster Disaster Information Acquiring System

The system aims to acquire disaster information in a timely, efficiently, accurately and comprehensively way. It integrates Emergency Surveying and Mapping UAV Platform, 36 sets of multi dimension and multi source earth observation hardware, and 8 sets of software.
3. UAV cluster disaster information acquiring system

Unmanned aerial vehicle cluster disaster information acquiring system

- UAV System
- UAV Command System
- Mission Payloads System
- Data Chain System
- Safeguard System
- Mobile measurement and control System
- Mobile Surveying System
- Electro-optical pod
- Aerial camera
- Z-5 UAV
- DB-2 Plateau UAV
Challenges

1. Mechanism of coordinated emergency response
2. Data sharing and exchange.
3. Emergency service ability, including high quality team, advanced technology, methods and equipments in acquiring, processing and interpreting data, monitoring and forecasting disaster.
Future
Welcome to Chengdu, Sichuan
Welcome to Chengdu, Sichuan
Thank you!