Sentinel Asia

Roll of Nodes and Measures to Strengthen their Activities

3rd Sentinel Asia JPT Meeting
13-15 March 2007, Singapore

Kazuya KAKU
Japan Aerospace Exploration Agency (JAXA)
Until now the framework of Sentinel Asia has been organized.

Now, the next target is how to activate it !?

- As much data/information as possible from data providers
- Utilization of those data/information by users
- Capacity building for users by experts on RS/GIS/Disaster Management
Framework of Sentinel Asia

**Sentinel Asia**

*Joint Project Team (JPT)*
Join Project Team consists of total 52 organizations including 45 agencies from 19 countries and 7 international organizations as of January 2007

**Space Community**
- APRSAF*
- Content
- Satellite Image
- Promotion of Utilization
- Capacity Building

* Asian-Pacific Regional Space Agency Forum

**Digital Earth / Web-GIS Community**
- Digital Asia
- Information Sharing Platform
- Web-GIS
- Data / Meta Data Management
- Content
  - Digital Map
  - Social / Economic Data
  - Satellite Image

**International Community**
- UN / ESCAP
- UN / OOSA
- ASEAN
- AIT
- etc.

International Cooperation

**Disaster Reduction Community**
- ADRC**
  - Member Countries
  - Content
    - Disaster Information
  - Utilization (User)

**** Asian Disaster Reduction Center
Structure of Sentinel Asia

- Data Provider Nodes
- Local Service Provider Nodes (User Nodes)
- Research & Training Nodes
  - Technical Implementation Team
  - Wildfire Working Group
  - Flood Working Group
  - Secretariat

- UN/ESCAP
- UN/OOSA
- ASEAN
- AIT

- APRSAF

- ADRC
- Member Countries

- Digital Asia

- Disaster Reduction Community

- Digital Earth / Web-GIS Community

- International Community

- Space Community

- JPT
Status of Nodes

• How Many Nodes are Active Today?:

  - **Data Provider Nodes (Total 12 Organizations):** Australia (COSSA, GA, Australian Bureau of Meteorology); China (NDRCC); INDIA (ISRO); Indonesia (LAPAN); Japan (Keio U., JAXA); Malaysia (MACRES); Singapore (CRISP); Thailand (GISTDA); AIT

  - **User Nodes (Total 40 Organizations):** Australia (COSSA etc.); Bangladesh (SPARSSO); Brunei (MoD); Cambodia (Ministry of LMUPC); China (NDRCC); India (ISRO); Indonesia (BAKORNAS etc.); ADRC; Japan (Keio U. etc.); Lao P.D.R. (STEA-ERI etc.); Malaysia (PM-Dept.); Mongolia (NRSC); Myanmar (DMH etc.); Nepal (Dept. Wat Disast Prev. etc.); Philippines (NDCC etc.); Sri Lanka (Surv. Dept. etc.); Thailand (GISDTA etc.); Vietnam (MONRE etc.); AIT, ICHARM; CCOP

  - **Research & Training Nodes (Total 18 Organizations):** Australia (COSSA); China (NDRCC etc.); India (ISRO); Indonesia (LAPAN etc.); Japan (Keio U. etc.); Malaysia (MACRES); Thailand (GISTDA); Vietnam (VAST etc.); AIT; ICIMOD; ICHARM; CCOP
Data Provider Nodes

“Data Provider Nodes”

- not only run Web-GIS services, but they also operate their own satellite reception facilities, and in some cases their own spacecraft
- are tasked to process the imagery they can collect in near real-time into agreed information products (e.g. GeoTIFF RGB’s, wildfire hotspots), and make it available through the network
Current Status of Data Providers

Data Provider Nodes
• Satellite Images
  After Disaster:  
    JAXA (ALOS), ISRO, KARI, GISTDA
  Before Disaster (Archived Images):
    JAXA (ALOS), Digital Asia (LANDSAT), ISRO, KARI, GISTDA
• MODIS Hotspots: Hokkaido Univ, AIT/Tokyo Univ, CRISP, LAPAN, COSSA/GA, KARI, MACRES
• Satellite Image Products: JAXA, CRISP

Others
• List of Disasters: ADRC
• Precipitation products: IDI (IFNet)
• Digital Camera Images: WANTED!
• Map Data: Digital Asia
  Fine Regional Map: WANTED!
Local Service Provider Nodes (User Nodes)

“User Nodes”

- will establish Web-GIS services that show baseline digital map information for their part of the region, combined with satellite data products
- Such information would be provided in near real-time, and voluntarily posted to the network together with their own country’s more detailed GIS information if applicable
- Capacity building is essential to activation of User Nodes
“Research & Training Nodes”

- are encouraged to develop new products (e.g. new automated processing methods for other disaster types such as droughts, pre-post earthquake or landslide change detection, etc), or to develop hotspot/flooding/drought etc. algorithms for their countries’ satellite sensors.

- can also be involved in capacity building activities for Sentinel Asia.
Research & Training Nodes

New Products
• Development of new products will be a task in the next step.

Capacity Building
• Intended for User Nodes and Users (Disaster Management Agencies)
• Expected Activities:
  • Provide Training Materials about RS/GIS & disaster management
  • Hold Seminar/Workshop etc. about RS/GIS and disaster management
• Actual Cooperation is strongly requested for capable organizations.
Scheme of Sentinel Asia

Data Providers
- ADRC
- Keio Univ. (Digital Asia)
- Space Agency Institute University
- Disaster Org.
- Field Survey Team

Sentinel Asia Web Site
- List of Disasters
- Overlaid Images (GIS)
- Satellite Image Products
- Digital Camera Images
- Satellite Images (Download)
- Capacity Building

Users
- Government Disaster Org. (ADRC Members)
- Local Government Local Disaster Org.
- Local Residents Victims
- Policy / Decision Making for Disaster Management
- Other Information besides Sentinel Asia
- Value-added Disaster Info.

User Nodes
- Analysis & Processing by own GIS etc.
- Training Materials
- Capacity Building

Data Provider Nodes
- Space Agency Institute University

Research & Training Nodes
- Training Materials
- Capacity Building
Thank you for your attention.

Please visit Sentinel Asia at http://dmss.tksc.jaxa.jp/sentinel/

Japan Aerospace Exploration Agency
Space Applications and Promotion Center
Sentinel Asia Project Office
E-mail : sentinel.asia@jaxa.jp