
Introduction of Sentinel Asia - a Web-GIS Platform for Disaster Management -

Kenpei Kojika (kojika@adrc.or.jp)
Asian Disaster Reduction Center (ADRC)

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December 2006, Bangkok, Thailand



Background

- APRSAF-11, Nov 2004, Australia, agreed that a coordinated rapid-response pilot project should be developed for effective disaster reduction in Asia-Pacific region
- APRSAF technical WS: “Disaster Reduction through Effective Space Technology Utilization in the Asia Pacific Region”, held in May 2005, Malaysia, discussed the pilot project plan
- APRSAF-12, Oct 2005, Japan, approved the plan and initiated the pilot project
- The 1st Joint Project Team Meeting, Feb 2006, Vietnam, discussed the project implementation plan and JPT membership.

(APRSAF: Asia-Pacific Regional Space Agency Forum)



Framework

Voluntary and best-efforts-basis initiative by participating organizations and cooperation among APRSAF, ADRC, Digital Asia and international organizations

Space Community

APRSAF*

Content

Satellite Image

Promotion of Utilization

Capacity Building

* Asian-Pacific Regional
Space Agency Forum

International Community

**UN / ESCAP UN / OOSA
ASEAN AIT etc.**

International Cooperation

Sentinel Asia

Joint Project Team (JPT)

Join Project Team consists of total 51 organizations including 44 agencies from 18 countries and 7 international organizations as of July 2006.

Digital Earth / Web-GIS Community

Digital Asia

Information Sharing Platform

Web-GIS
Data / Meta Data Management

Content

Digital Map
Social / Economic Data
Satellite Image



Disaster Reduction Community

ADRC**

Member Countries

Content

Disaster Information

Utilization (User)

** Asian Disaster
Reduction Center

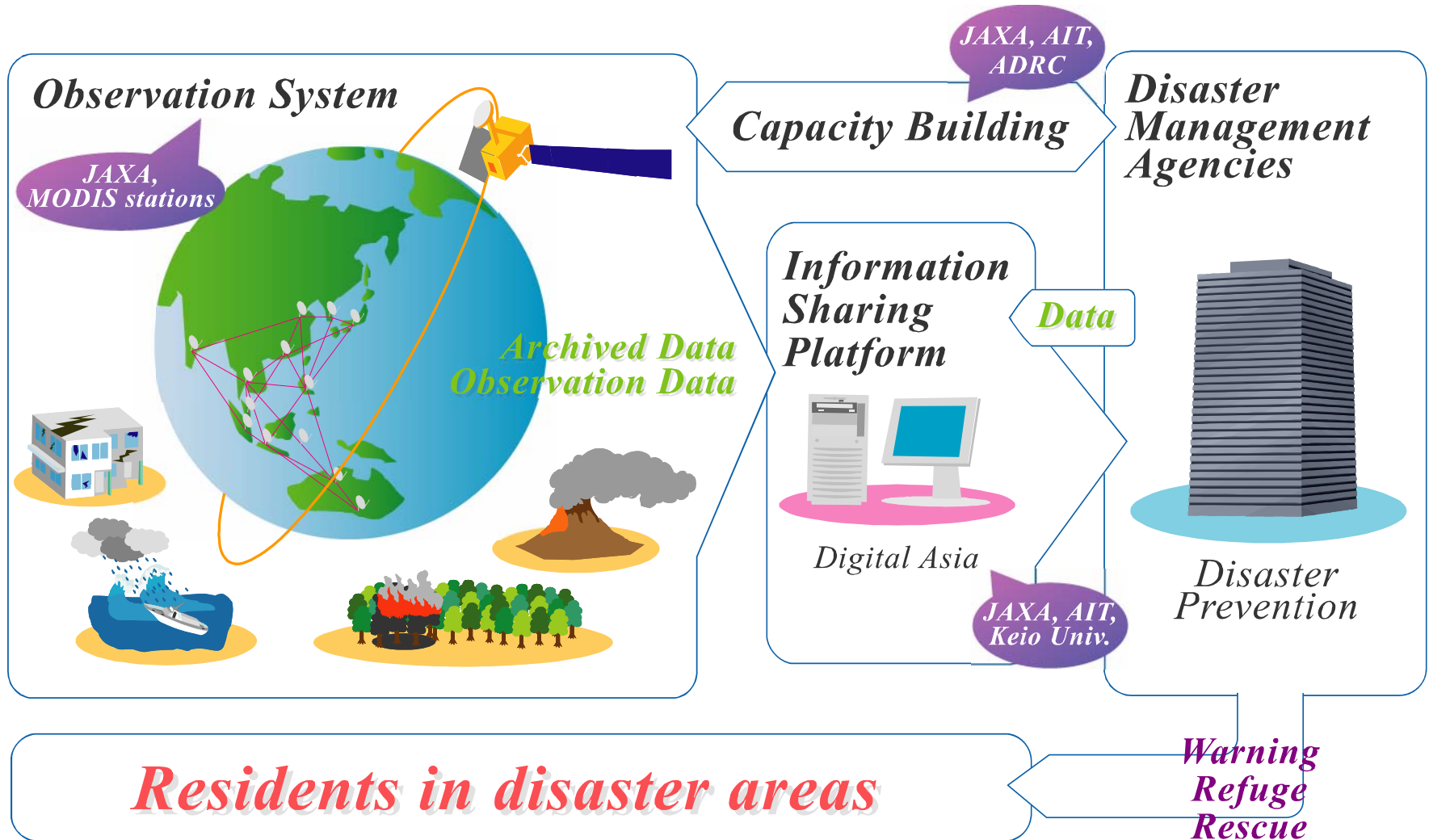
Main Activities

- **Emergency observation** in case of major disasters by ALOS and other available resources for ADRC members and JPT space agencies
- **Wildfire monitoring** by MODIS
- **Flood monitoring** by TRMM and AMSER-E
- **Capacity-building** for utilization of satellite images for disaster management

**Accept emergency observation from
October 24, 2006**



Overall Flow



Data Interface

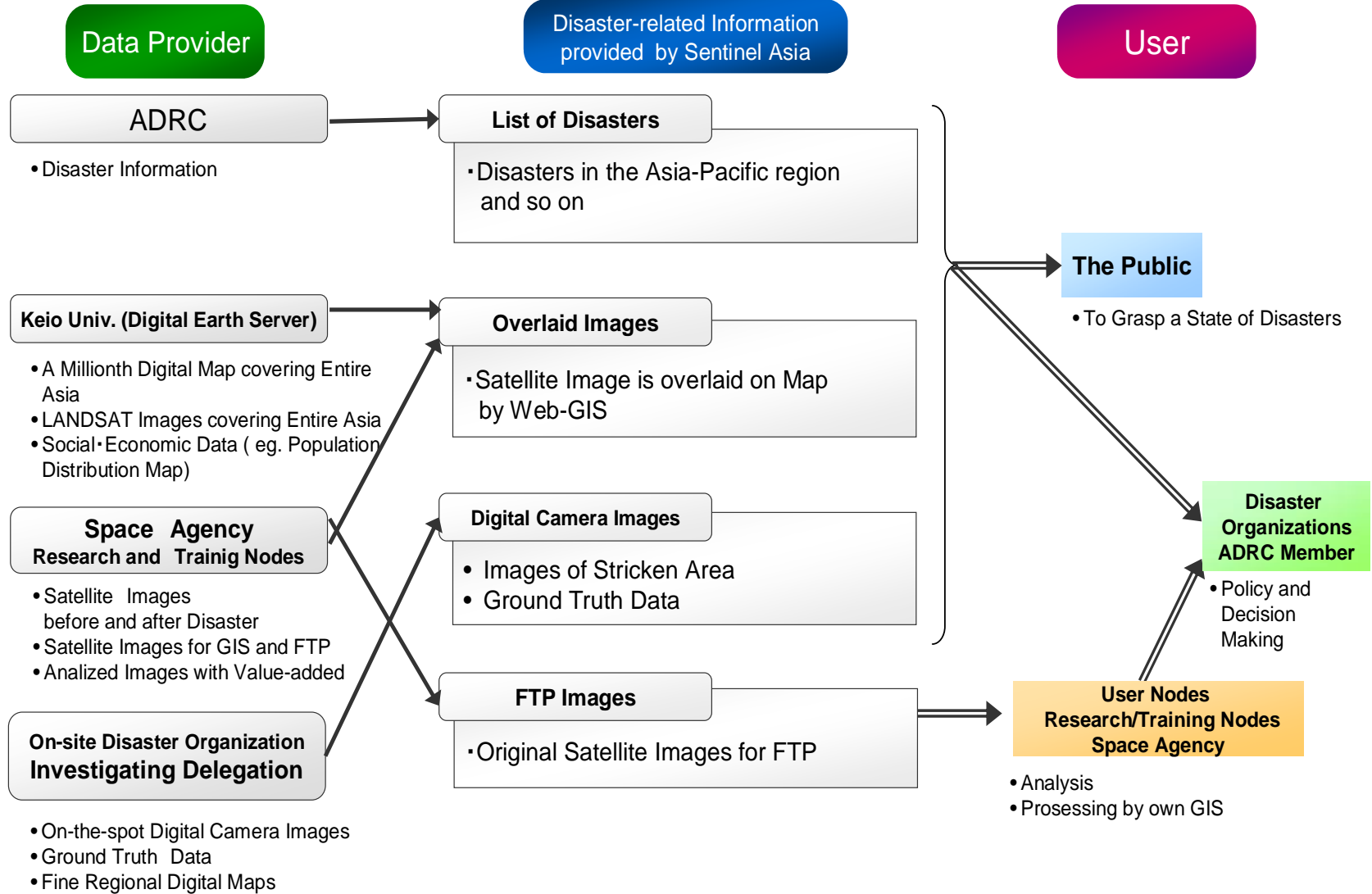
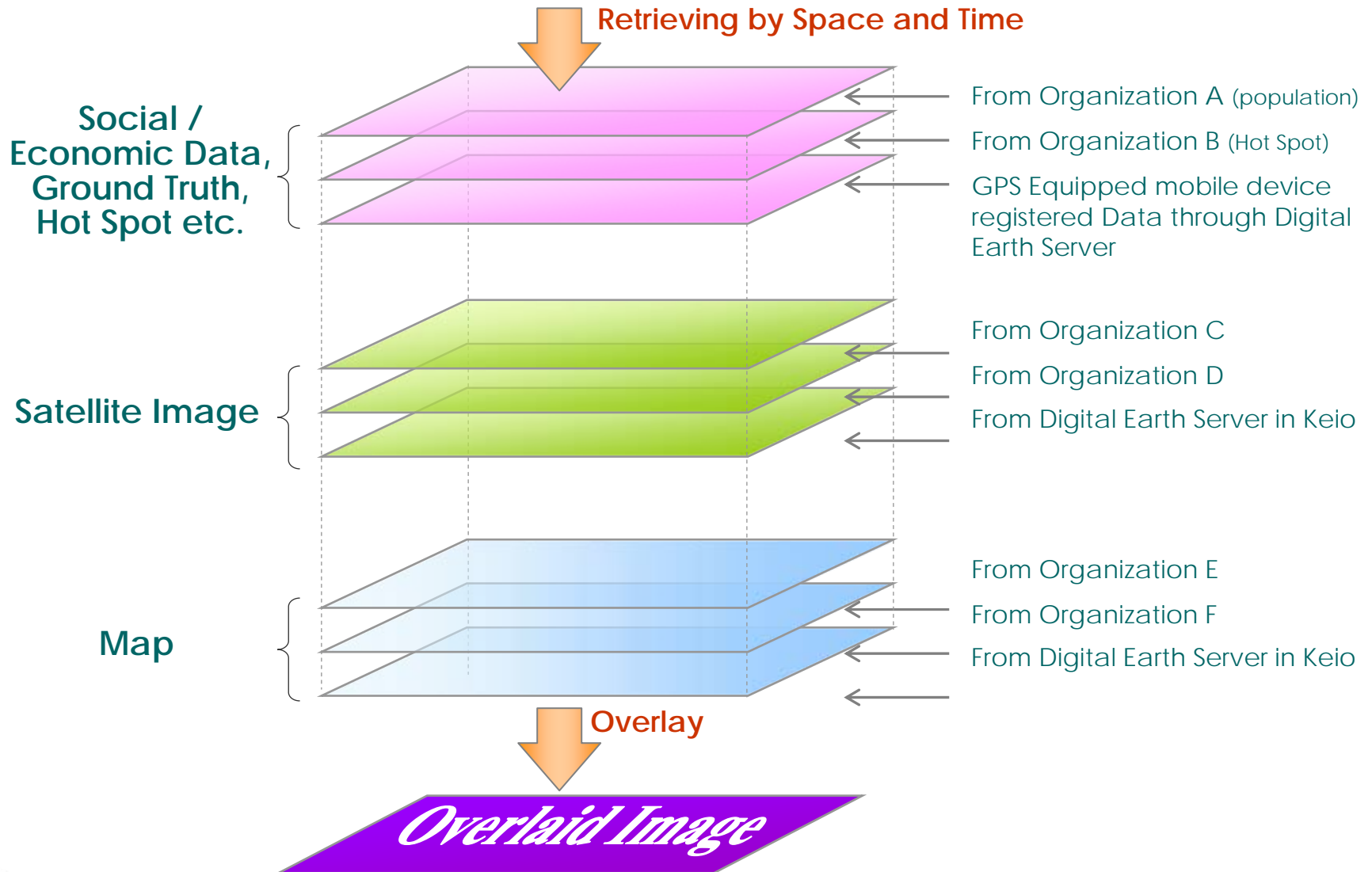
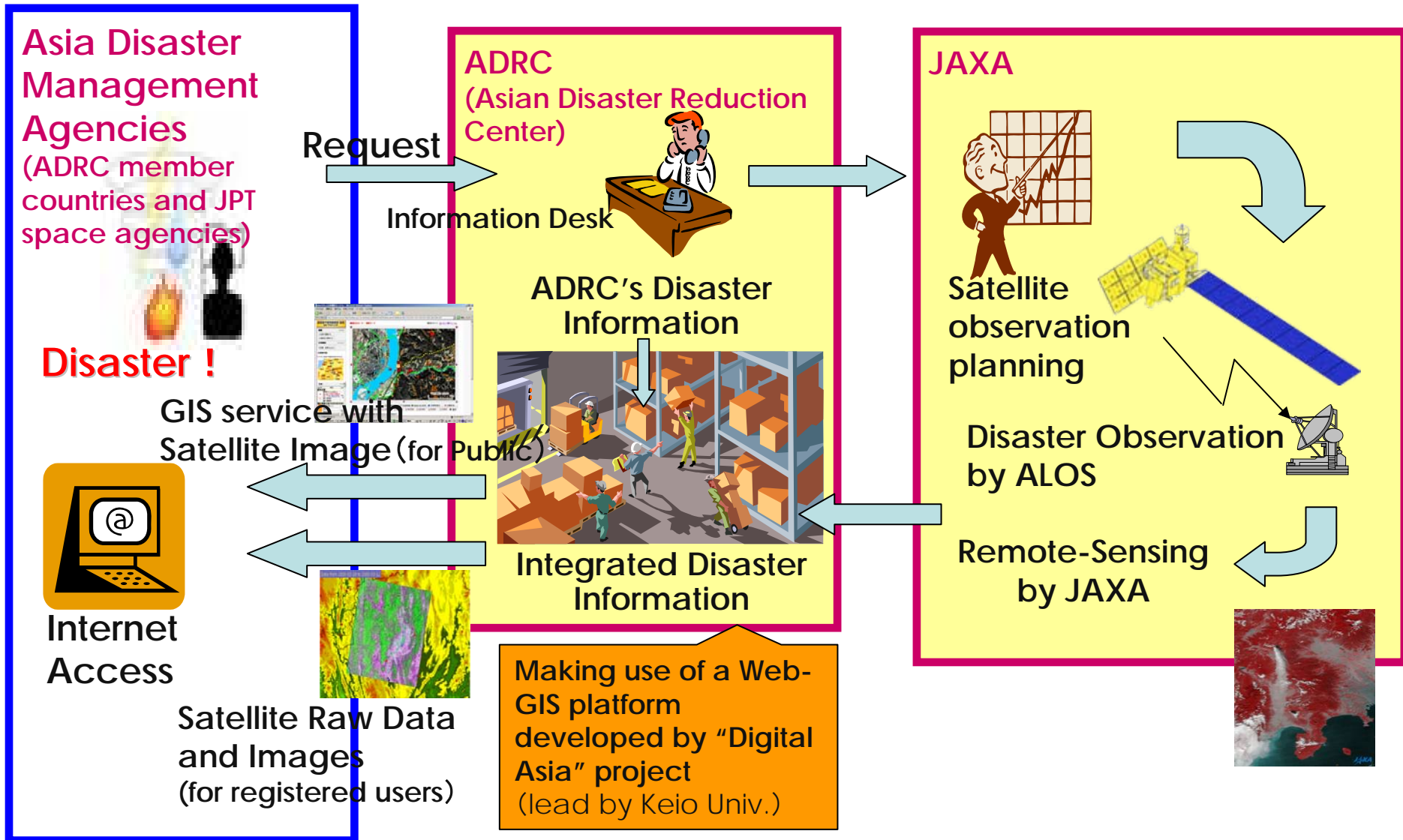


Image of Data Processing



Operation Flow of ALOS Observation



Sentinel Asia - Microsoft Internet Explorer

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戻る 進む 印刷 検索 お気に入り

Sentinel Asia

Disaster Management Support System in the Asia-Pacific Region

About Sentinel Asia

[How to provide data](#)

[How to request ALOS observation](#)

[JPT Members](#)

[Library](#)

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[Site Policy](#)

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NOTICE:
This web site will be temporarily unavailable due to inspection of electrical equipment. The periods are below;
Nov. 17th, 8:00(UT) - Nov. 20th, 1:00(UT)
Nov. 22nd, 8:00(UT) - Nov. 24th, 1:00(UT)

Recent Disasters and Emergency Observation

Wildfire Monitoring

Flood Monitoring

Capacity Building

Welcome to Sentinel Asia Web Site

Sentinel Asia is a "voluntary and best-efforts-basis initiatives" led by the [APRSAE](#) (Asia-Pacific Regional Space Agency Forum) to share disaster information in the Asia-

Topics

Commencement of the Sentinel Asia Operation
[read more >](#)

Wildfire Validation Activities
[read more >](#)

[Past topics >>](#)

[edit](#)



View Archived Disaster Information

Sentinel-Asia Project - Disaster Management Support System - Microsoft Internet Explorer

http://arrs.adrc.or.jp/adrc/MyMap/adrc/index.jsp?AUTHORIZED=yes&USERPROFILEKEY=1132191860541&MAPDIR=401

For request, LOGIN here with your ID and PW

Web-GIS provided by "Digital Asia Project" of Keio University

Search disaster database here

GLIDE No., for more detail, click here

Link to ADRC's latest disaster information

GLIDE Number	Event	Date	Region/Country	Comment	Provided by
TO-2006-000160-JPN	Tornado			... northern Japanese town on Tuesday, killing at least nine people and injuring	ADRC
FL-2006-000155-LKA	Flood and Landslide	2006/10/31	Sri Lanka	Due to torrential rains, Some parts of the country are experiencing Floods and Landslides. The most affected Districts are Gampaha, Puttalam, Kalutara and Colombo. Around 72,000 families have been affected and 25 deaths were reported by the District and divisional authorities in the affected areas.	ADRC
TC-2006-000144-VNM	Typhoon	2006/10/30	Philippines	Typhoon Cimaron battered the northern Philippines on Monday, killing at least 10 people in a barrage of landslides and flooding, officials said.	ADRC
FL-2006-000143-PHL	Flood	2006/10/11	Myanmar	On 11 October, the worst monsoon floods in more than a decade are reported in Myanmar, Thailand. At least 13 people have been killed over the last few days.	
FL-2006-000142-JPN	Flood	2006/10/09	Thailand	More than 32 dead in Thai floods since August 2006, reported on	
TC-2006-000144-VNM	Typhoon	2006/10/01	Viet Nam	At least 15 people in Vietnam are now known to have died as a result of being buffeted central provinces over the weekend (by Oct.1,2006).	
TC-2006-000144-PHL	Typhoon	2006/09/27	Philippines	On September 28,2006, at least eight people have been killed and several are missing in the Philippines after Typhoon Xangsane brought fierce winds and rain.	ADRC
LS-2006-000143-PHL	Landslide	2006/09/22	Philippines	At least eight people were killed and 14 were injured when a landslide slammed into a narrow mountain road in the northern Philippines, local disaster officials said on Friday.	ADRC
TC-2006-000142-JPN	Typhoon	2006/09/17	Japan	The strong typhoon,Shanshan, to strike southwestern Japan has killed at least seven people caused tornado and flash floods.	ADRC

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Detail Information of a Disaster

Sentinel-Asia Project - Disaster Management Support System - Microsoft Internet Explorer

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Sentinel-Asia Project
Disaster Management Support System

About DMSS | Home | Search Photo | Search Satellite Images | Help Lang: English User/Pass: Login

Disaster Details

GLIDE Number:	TC-2006-000144-VNM	At least 15 people in Vietnam are now known to have died as a result of Typhoon Xangsane, which buffeted central provinces over the weekend (by Oct.1,2006).
Event:	Typhoon	
Duration:	2006/10/01	
Country or District:	Viet Nam	

Related Locations of Satellite Images

Locations of satellite images and site photos

300 km

Open Map Window

Related Recent Photos

Thumbnail	Date/Provider/Title	Comments
	2006/10/01 Vietnam News Agency Nha sap	This photo was shot at Da Nang city.
	2006/10/01 Vietnam News Agency Cay bat goc	This photo was shot at Da Nang city.
	2006/10/01 Agency	This photo was shot at Da Nang city.

View all images

Site photos

Related Satellite Images

Thumbnail	Date	Provider	Image Type	Description
	2006/02/13 00:00:00	LANDSAT		Landsat Mosaic.
	2001/03/23 00:00:00	Landsat	ETM+	Orthorectified Landsat7/ETM+ image (p124r049_7t20010323_z49_band123_geotiff)

Satellite images

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Satellite Disaster Image

Sentinel-Asia Project - Disaster Management Support System - Microsoft Internet Explorer

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Sentinel-Asia Project
Disaster Management Support System

[About DMSS] [Home] [Search Photo] [Search Satellite Images] [Help] Lang: English User/Pass: [] [Login]

Satellite Image Details

Observation Date:	2001/03/23 00:00:00	Provider:	NASA	Satellite:	Landsat	Sensor:	ETM+	Observation Mode:	
Flight Direction:	Ascending	Product:	Orthorectified	Pointing Angle:		Scene Center Lat. / Lon.:	15.897352/108.794395		
Comments:	Landsat7/ETM+ image (p124r049_7t20010323_z49_band123_geotiff)								

Satellite Image

Legend:

User Layers:

- ☒ Landsat7/ETM+ image [snip]

Recommended Layers:

Base Map:

- ☐ DEM(GTOP030)
- ☐ DEM(ETOPO2)
- ☐ LAND COVER(GLCC)
- ☐ Population 1990(GPWv3)
- ☐ Population 1995(GPWv3)
- ☐ Population 2000(GPWv3)
- ☐ Population 2005(GPWfe)
- ☐ Population 2010(GPWfe)
- ☐ Population 2015(GPWfe)

DCW(Vmap0):

Reference

- ☒ Political Boundaries
- ☒ Library Reference

[Add Layers] [Redraw]

Lat: 15d 53m 50.468s N, Lon: 108d 47m 39.824s E
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Request for Emergency Observation

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Sentinel-Asia Project
Disaster Management Support System

[About DMSS] [Home] [Search Photo] [Search Satellite Images] [Search Observation Requests] [Request New Observation] [Help] Lang: English In Login: adrc Logout

[Request New Observation](#)

GLIDE Number: DO NOT USE THIS FORM, unless you can identify disaster or GLIDE number.
If you can, goto [top page](#) and click "GLIDE Number", then click "Request More Observation".

Event (type of disaster): (Select) ▼

Observation Span: 1 week(s) from the beginning of observation.
* These values depend on the selected event above.

Region/Country (location of occurrence): (Any) ▼ / (Any) ▼

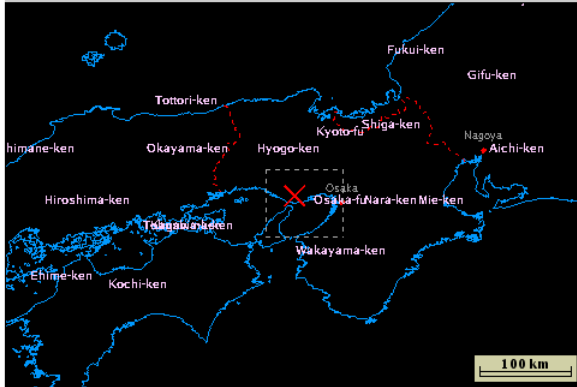
Organization: ADRC
* This value depends on your logged-in account.

Additional Information on the disaster:

Additional Instructions (shipping instructions):

Observation Location

operation mode
Scroll Select



Reset Submit Request

[How to request observation](#) Download request form: [\[MS-Word\]](#) [\[PDF\]](#) [E-Mail to JAXA](#) / [E-Mail to ADRC](#) [\[Back\]](#)

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Provisions for Emergency Observation

- ADRC counterpart organizations and space agencies of JPT are eligible to request for the emergency observation by ALOS (ID and PW required)
- Apply to any kind of large-scale natural disasters
- The result is provided free-of-charge and no commercial use is allowed for provided observation data and images



Limitations of Sentinel Asia

- Best-effort based system: request may not be accepted and the quality of the result is not guaranteed
- It may take time from request to data dissemination due to the position of the satellite and weather condition
- Remote sensing technology may be necessary for accurate damage estimation
- Archived data are not always available when the damage estimation requires



Aiming for a Higher Performance (1)

- Reduce time interval from observation request to data dissemination
 - JPT organizations who has earth observing satellite are welcomed to provide emergency observation
 - Cooperation with other initiatives (International Charter, etc.)
- Development of higher-resolution sensor for next generation of satellite
- Accumulation of archive data



Aiming for a Higher Performance (2)

- Development of remote sensing technology and damage estimation algorithm
 - To provide different kinds of information to satisfy various requirement of disaster management
- Combination with information communication technology to improve Internet environment
 - To utilize WINDS (Wideband Internetworking Engineering Test and Demonstration Satellite) from 2008



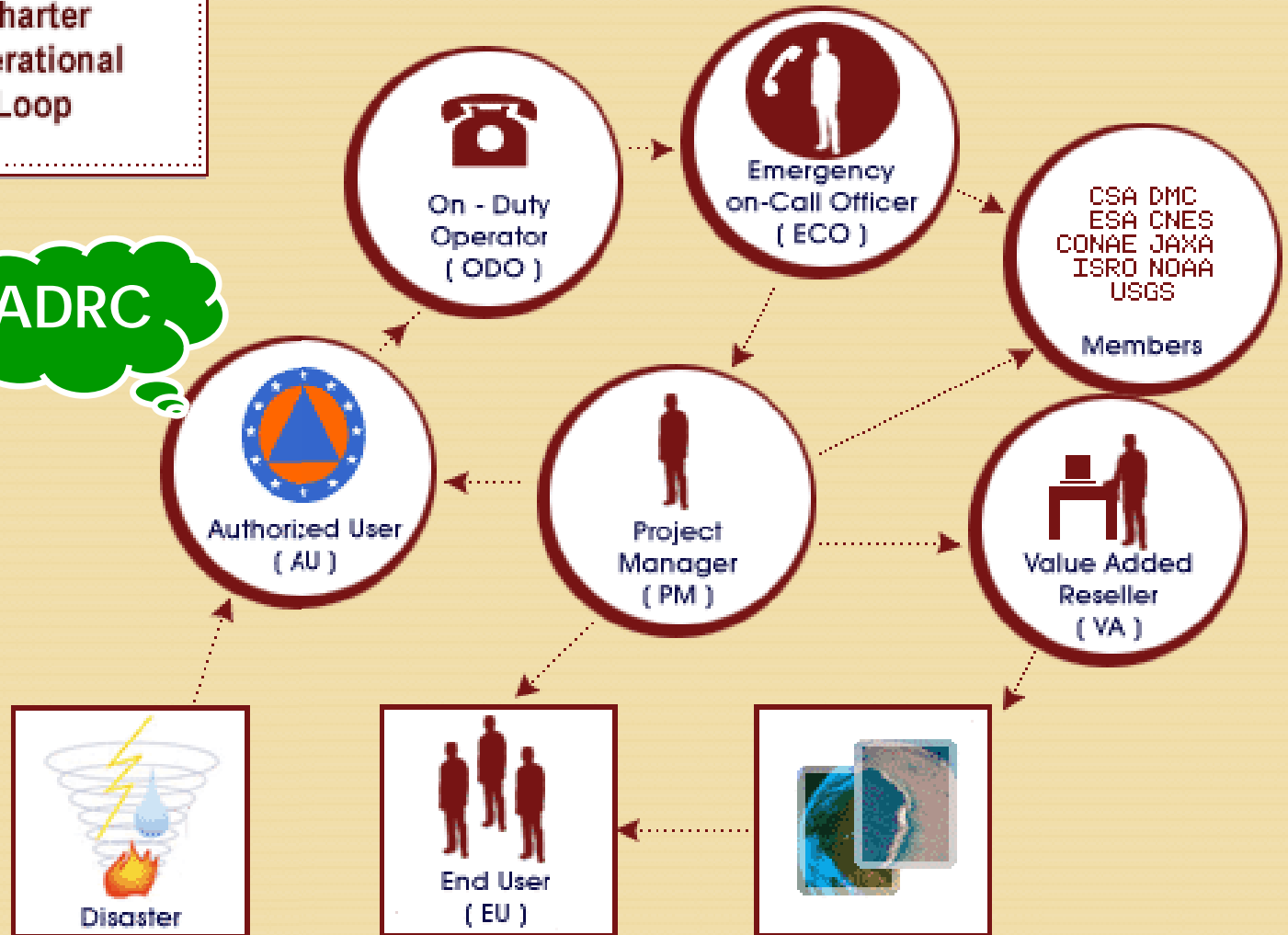
Joining International Charter



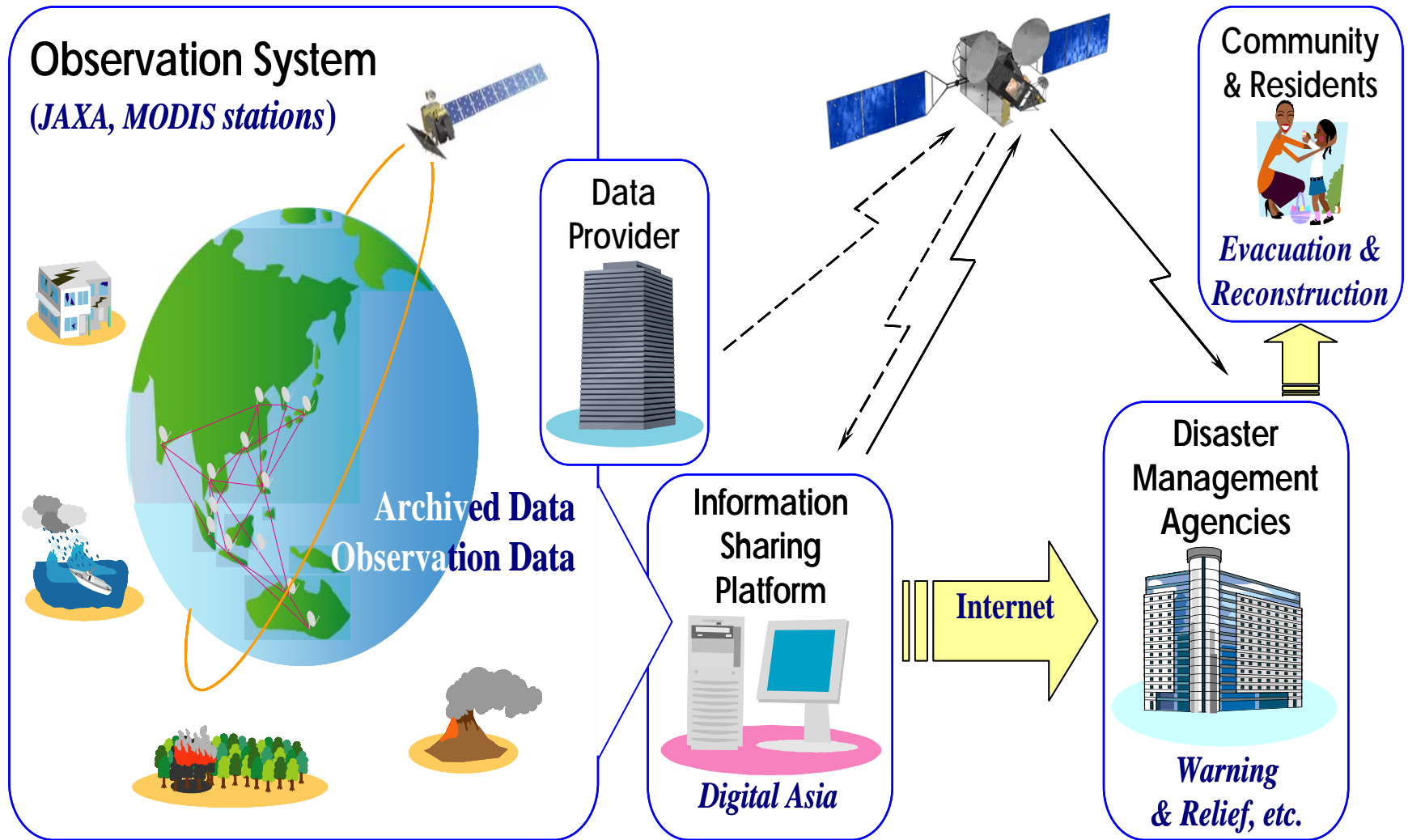
Charter
Operational
Loop



★ Start
Here



Combining with Communication Satellite



SUMMARY

- Sentinel-Asia was a internet-based Web-GIS platform providing disaster information in the Asia-Pacific region under cooperation among APRSAF, ADRC, Digital Asia and international organizations based on best-efforts and voluntary initiatives
- Accepts emergency disaster observation by ALOS at present after a large-scale disaster and the wildfire and flood monitoring will function soon
- It could be a useful tool for disaster management especially when it is combined with local GIS, social and economic information
- Utilization of communication satellite is expect to speed or enable real time disaster information exchange between the data providers and the end users



Thank you for your attention

