
Japanese Contribution for Disaster Management Support

June 11th 2010

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Japan Aerospace Exploration Agency (JAXA)

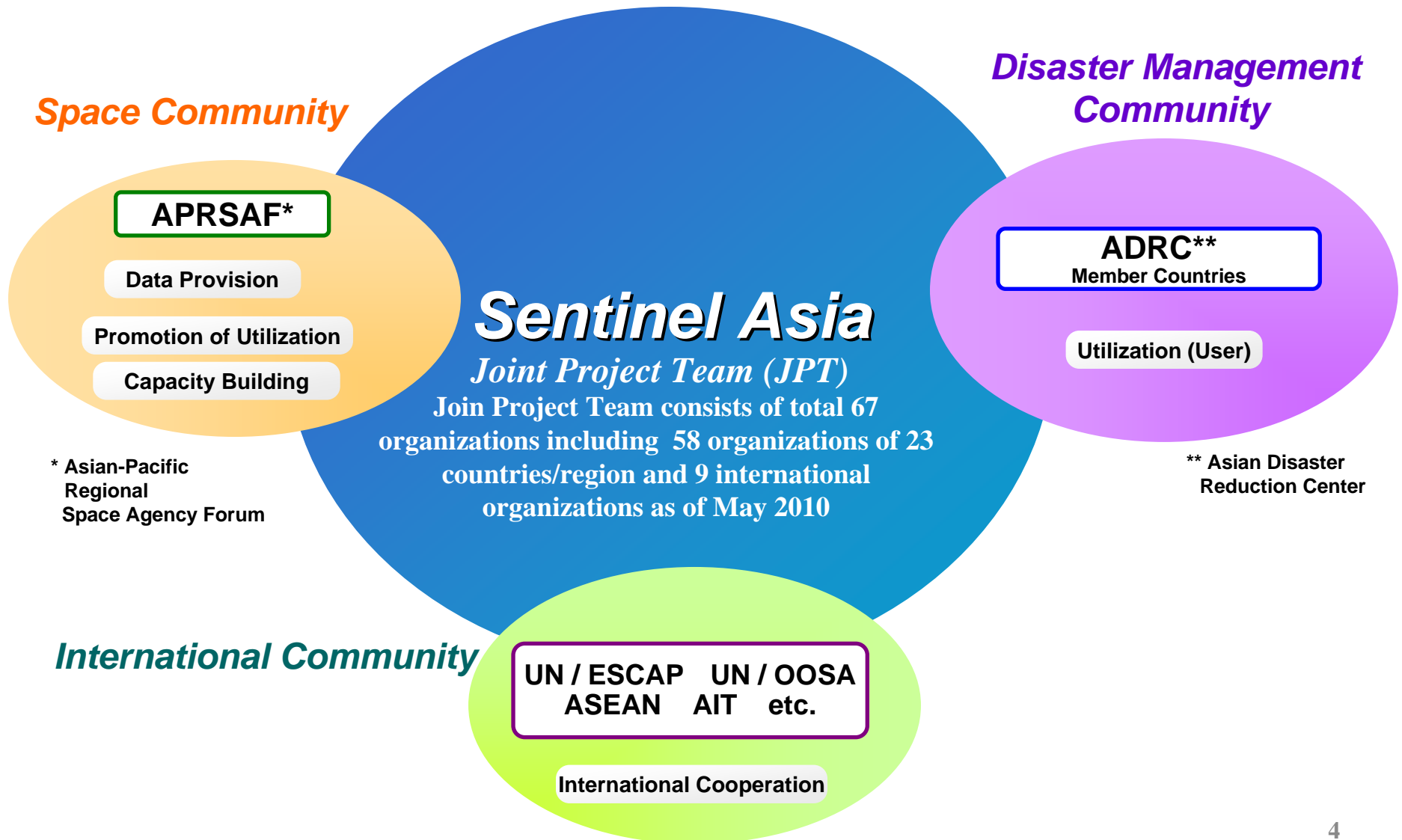
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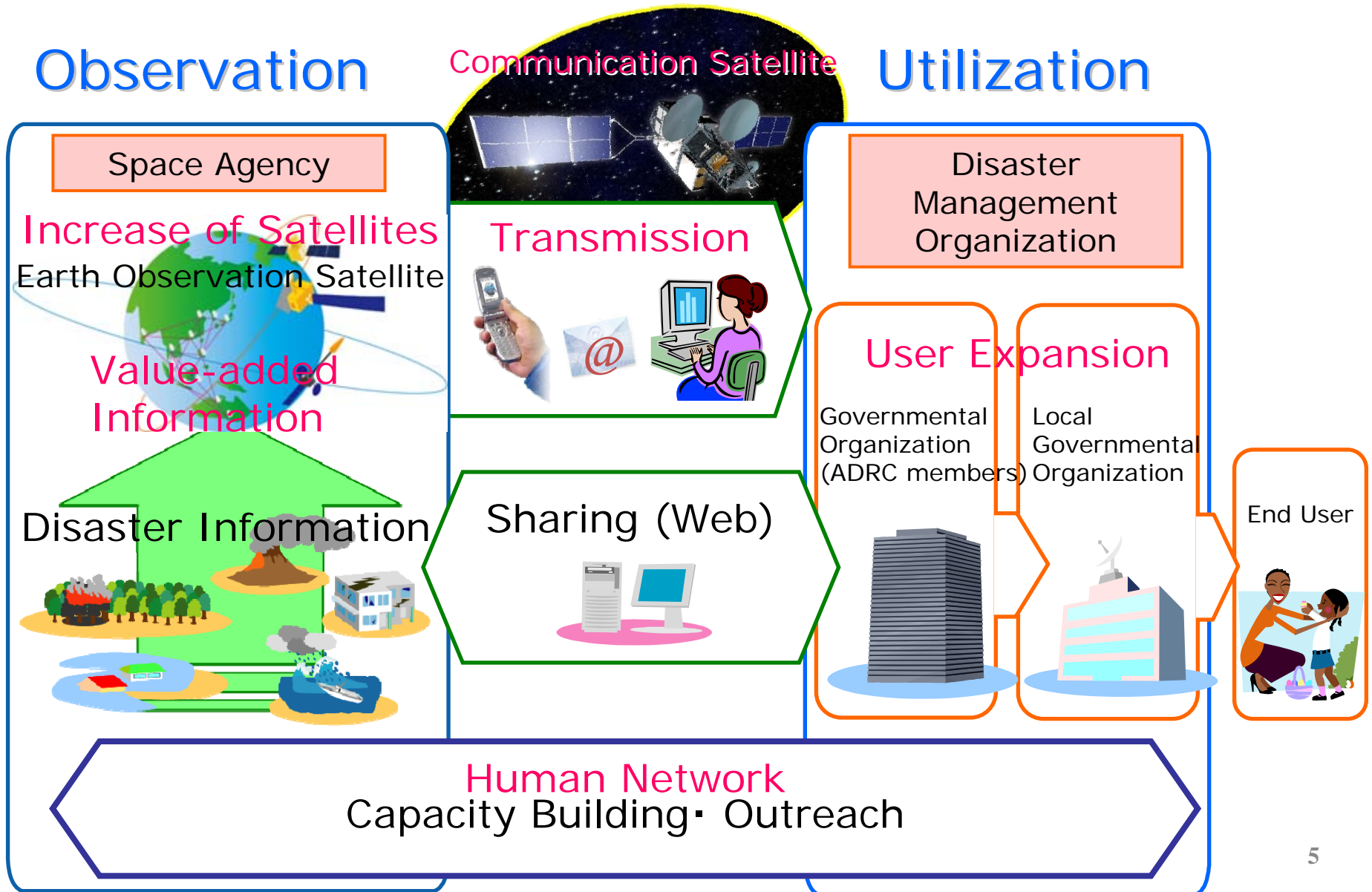
Introduction

- Four key pillars for contribution to Disaster Management Support
 - **Promotion of utilization of Sentinel Asia**
 - **Contribution to the International Charter**
 - **Linkage to UN-SPIDER**
 - **Capacity building for Asia-pacific region**

Activities of Sentinel Asia (Framework)

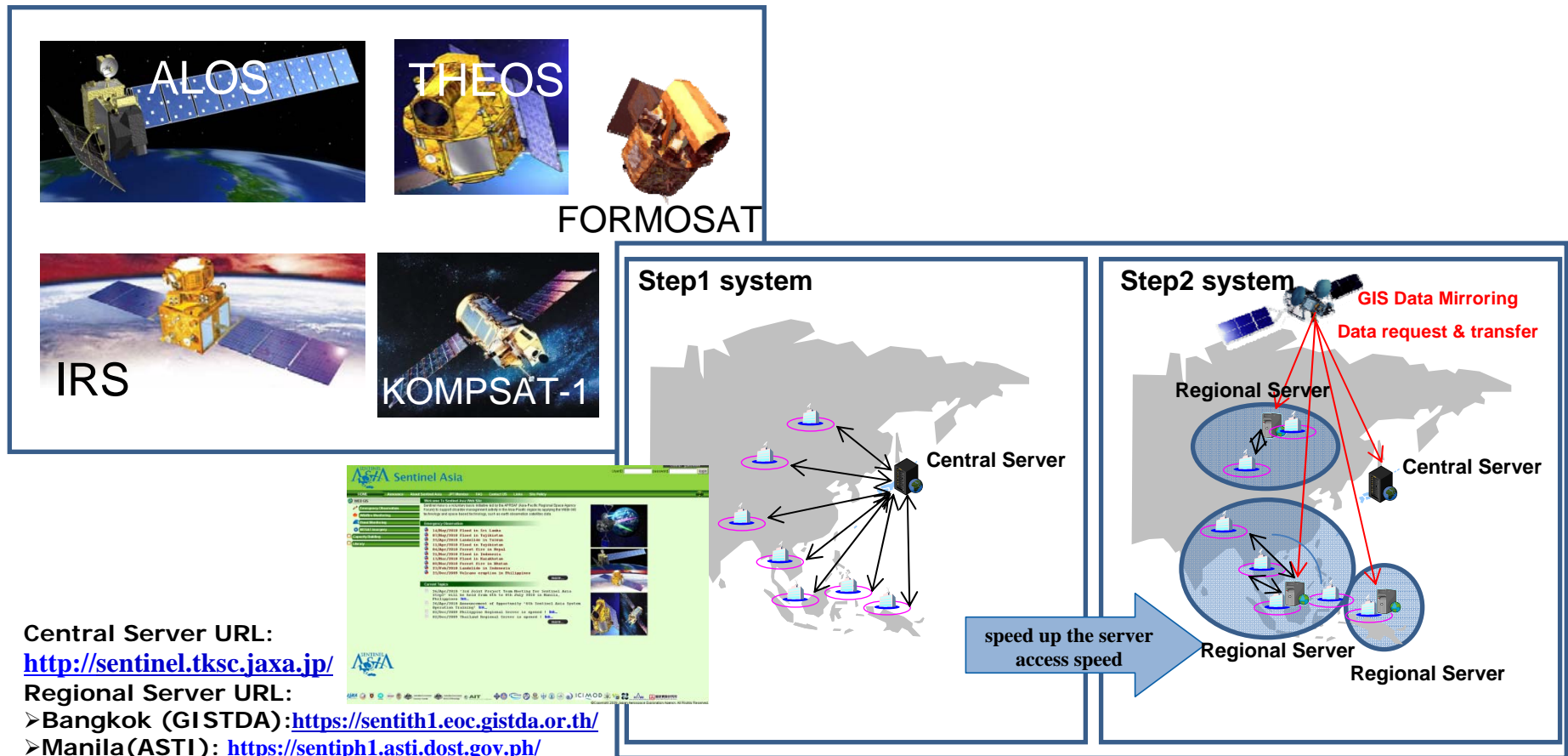


Activities of Sentinel Asia (Concept)



Activities of Sentinel Asia

- 5 earth observation satellites are participating in Sentinel Asia.
- To improve the accessibility of information provided by Sentinel Asia, Sentinel Asia utilizes high speed communication satellite 'WINDS' for sending a data to regional server.



Contribution to the International Charter



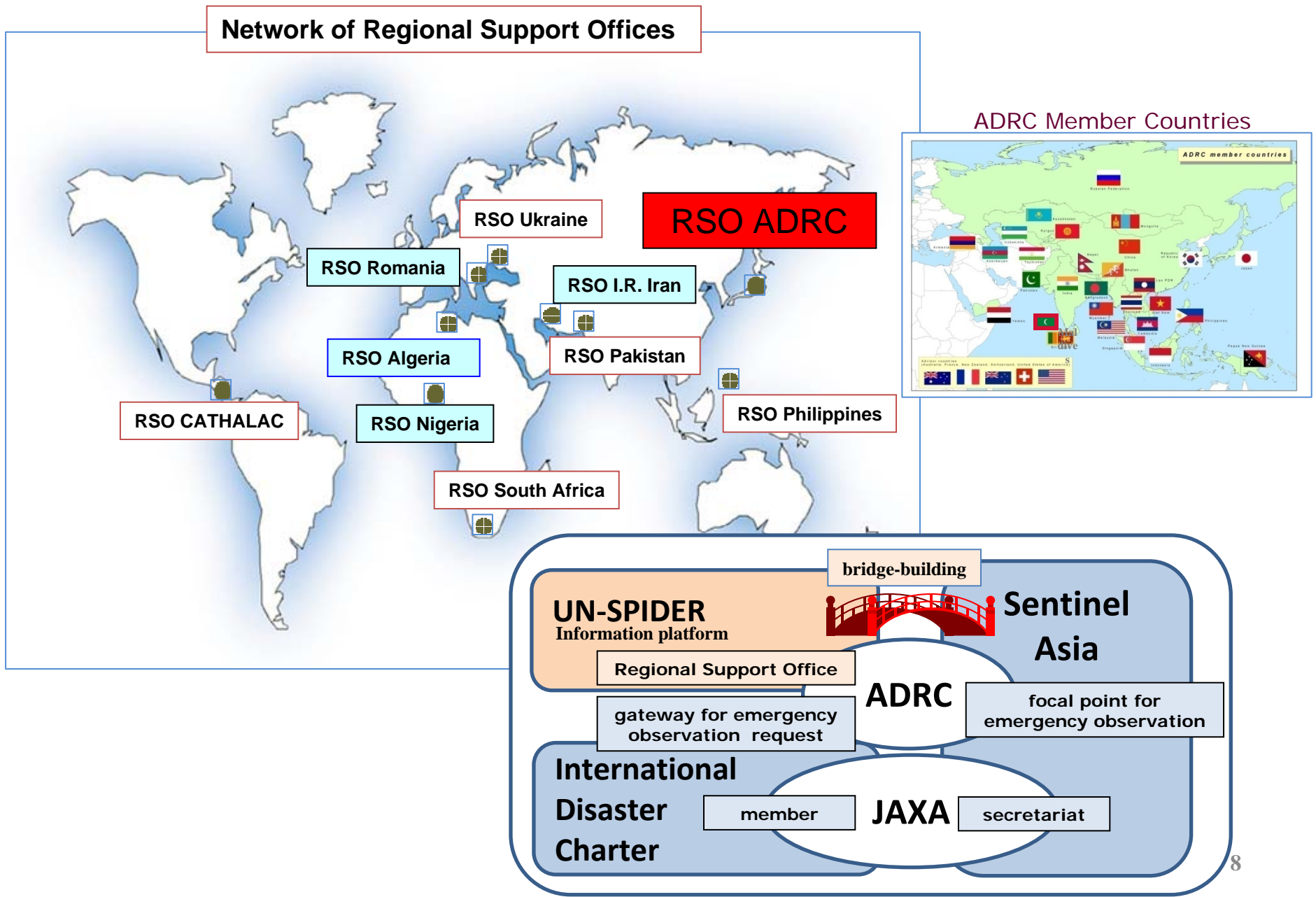
- JAXA became a member of the International Disaster Charter in February 2005.
- Since then, JAXA provided 109 world disasters data/image to the International Disaster Charter.

The number of disasters provided to the International Disaster Charter

Fy2005	Fy2006	Fy2007	Fy2008	Fy2009	Fy2010 (by end of May)	Total
1	13	28	31	31	5	109

Japanese fiscal year starts in April

Status of ADRC and linkage to UN-SPIDER



Capacity Building for Asia-Pacific region (1)

- **Objectives of Capacity Building**

- To provide necessary technical know-how to RS & GIS users in the Asia-Pacific region
- To develop in-house capacities of prospective users in the region
- To identify future space technology needs in the region

- **Sentinel Asia System Operation Training**

- This operation training has been held six times since 2007 and a total of 88 people from 18 countries participated to the training.
- Next operation training will be held in Bangkok, Thailand July 2010.



Capacity Building for Asia-Pacific region (2)

● Mini-Project

- For last 15 years starting from April 1995, to carry out various training programs mainly focusing on RS and GIS development of the Asia-Pacific nations.
- A total of about 1,200 trainees from 27 countries participated to the project.



● Japan-ASEAN Integration fund Project (JAIF)

- Utilization of Space Based Technologies for Disaster Risk Management



A meeting in the Philippines

Emergency Observation by Sentinel Asia

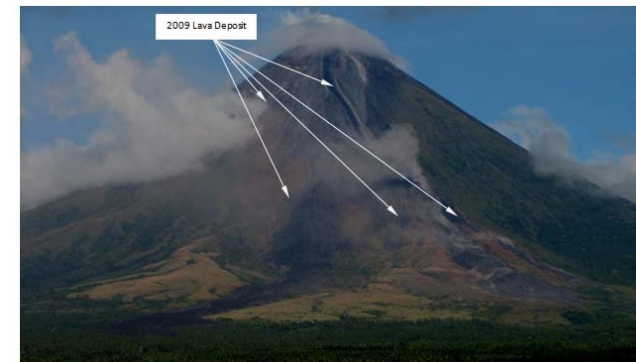
- Record of emergency observation by Sentinel Asia in the past year (from July 2009)

Year	Date	Country / Region	Disaster Type	Case example
2009	Jul. 5	Vietnam	Flood	killed at least 15 people, destroyed houses and damaged roads
	Aug. 8	Philippines	Typhoon	killed 10 people and injured 18 others
	Aug. 18	Nepal	Flood	27 persons were dead and 791 families were affected
	Sep. 2	Indonesia	Earthquake	81 deaths, 47 people as missing, 1,248 as injured, and 178,490 people as displaced.
	Sep. 26	Philippines	Flood	At least 54 people were killed
	Sep. 26	Vietnam	Flood	23 people dead and lost.
	Sep. 30	Indonesia	Earthquake	killed more than 529 people
	Oct. 4	Philippines	Flood	killed at least 12 people.
	Oct. 6	Nepal	Flood	killed at least 26 people
	Nov. 2	Vietnam	Flood	killed at least 13 people
	Dec. 16	Sri Lanka	Flood	28,640 families had been affected
Dec. 25	Philippines	Volcano eruption	A total of 12,415 persons evacuated (Example 1)	
2010	Feb. 23	Indonesia	Landslide	killing at least four people and burying 40 others
	Mar. 9	Bhutan	Forestfire	No casualties were reported
	Mar. 13	Kazakhstan	Flood	Around 20 people died and thousands were evacuated
	Mar. 21	Indonesia	Flood	More than 5000 houses in 21 villages were affected (Example 2)
	Apl. 4	Nepal	Forestfire	the loss worth Rs 5 million
	Apl. 11	Tajikistan	Flood	Killed 2 people, total 319 houses (with 1,914 inhabitants) have been damaged
	Apl. 25	Taiwan	Landslide	five people in four cars were trapped under the rubble
	May. 7	Tajikistan	Flood	killed at least 15 people and 40 others are missing
May. 14	Sri Lanka	Flood	134,646 families have been affected, include displacement of 15,002 people and 20 deaths (Example 2)	

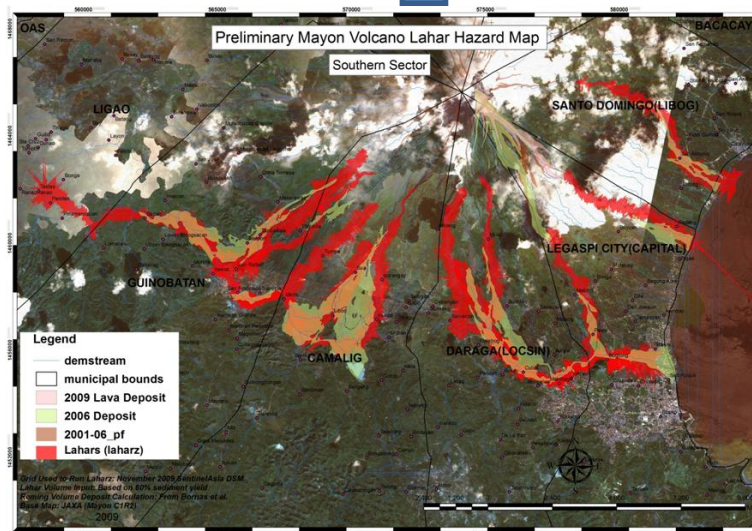


Example of emergency observation by Sentinel Asia (1)

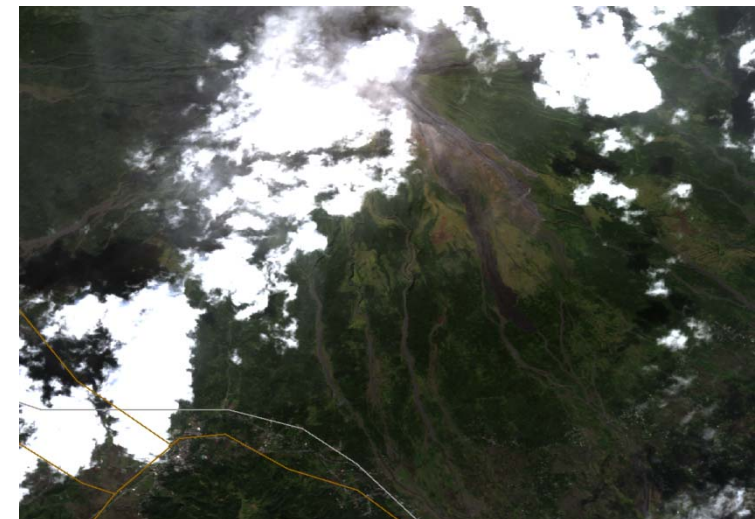
- Volcano eruption in Philippines December 25 2010.
- Emergency observation was made by ALOS/ AVNIR-2 and PRISM.
- The data of ALOS was used by PHIVOLCS to update Lahar (volcanic mud flow) Hazard Map.
- The updated hazard map was used for an evacuation alarm to residents.



Mayon Volcano
on 30 December 2009



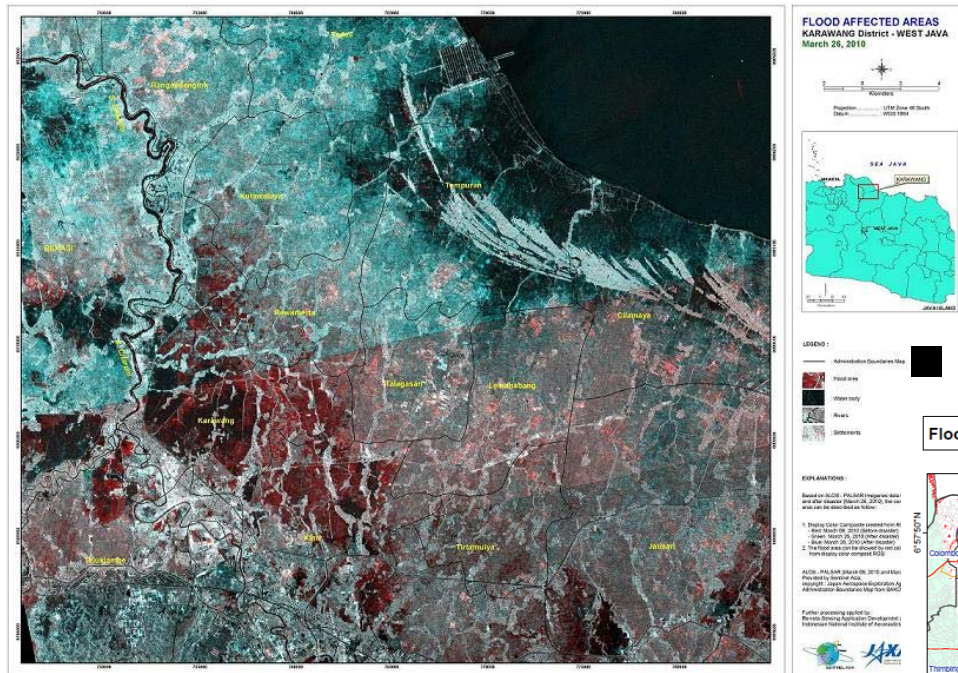
Lahar Hazard Map updated by PHIVOLCS
using ALOS imagery



Imagery by ALOS/ AVNIR-2 on 25 Dec. 2009

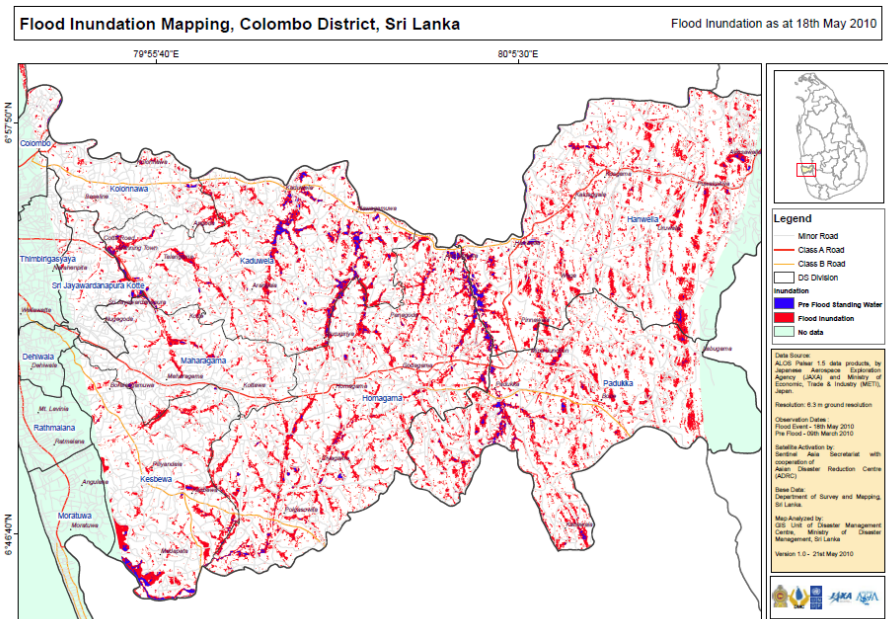
Example of emergency observation by Sentinel Asia (2)

- Flood in Indonesia March 21 2010.



<http://sentinel.tksc.jaxa.jp/>

Flood in Sri Lanka May 14 2010.



<http://sentinel.tksc.jaxa.jp/>

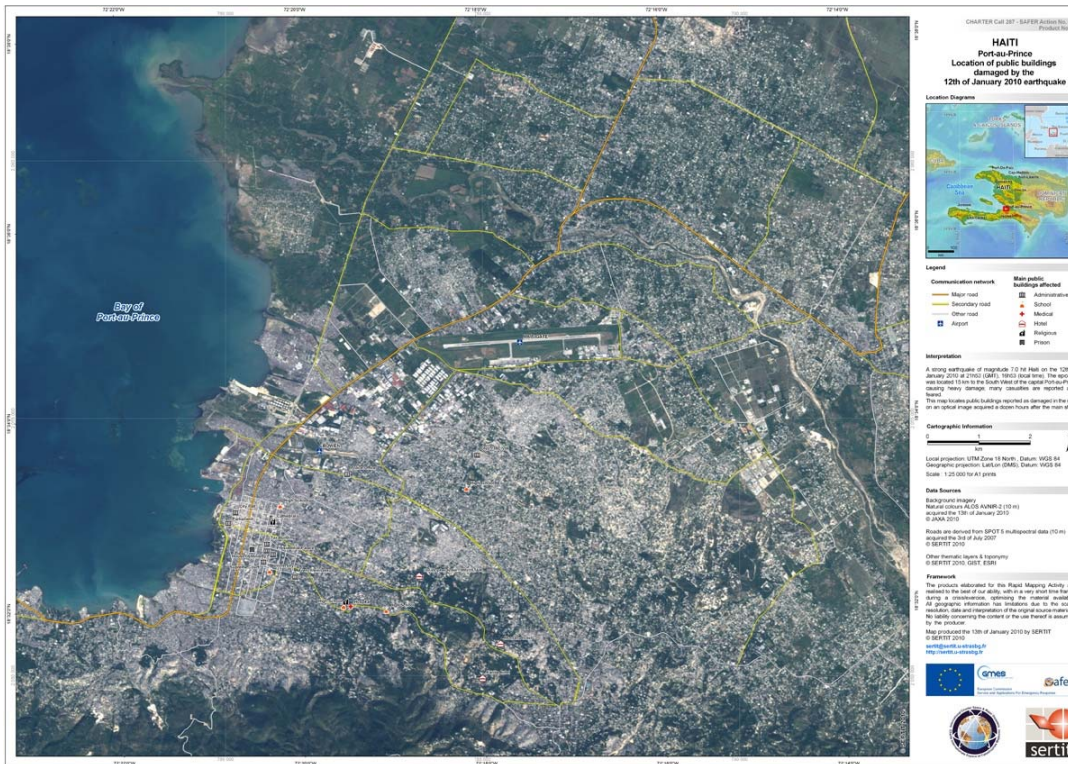
Emergency Observation by the International Charter

- Record of major emergency observation by ALOS in the past year (from July 2009)

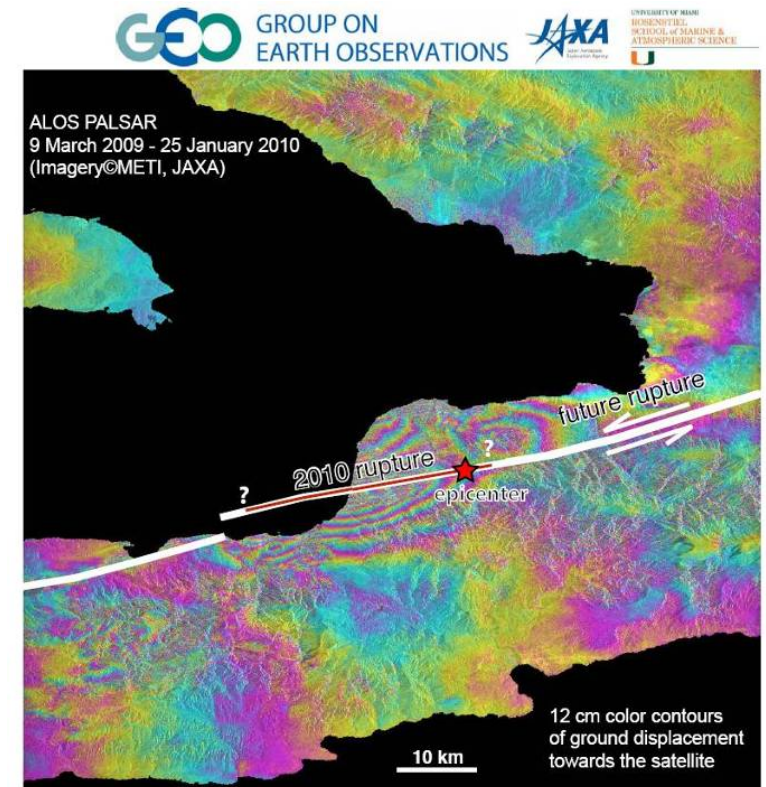
Year	Date	Country / Region	Disaster Type
2009	Aug. 24	Greece	Fires
	Aug. 30	Argentina	Wildfires
	Sep. 27	Philippines	Tropical Cyclone
2010	Jan. 13	Hiati	Earthquake (Example 1)
	Jan. 28	Peru	Flood
	Feb. 11	Pacific Islands	Cyclone
	Feb. 27	Chili	Earthquake and Tsunami (Example 2)
	May. 12	Iceland	volcanic eruption
	Apl. 11	Pakistan	Flood (Example2)

Example of emergency observation by the International Charter (1)

- Earthquake in Haiti January 13 2010.



The Disaster map developed using AVNIR-2 data of ALOS by SERTIT

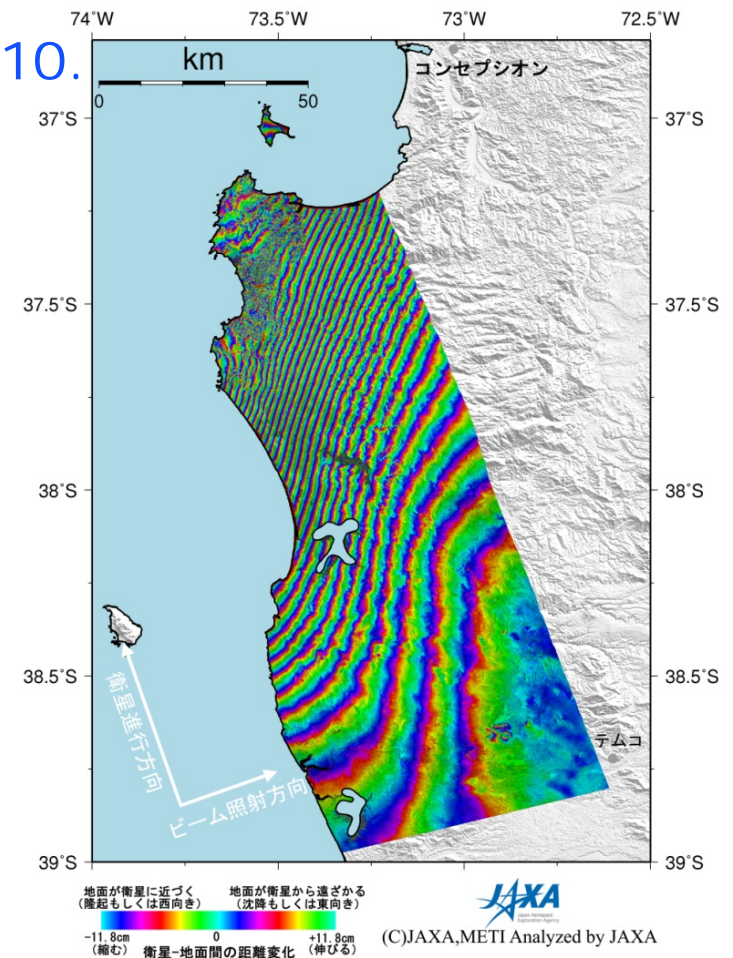


Sang-Hoon Hong, Falk Amelung, Tim Dixon, Shimon Wdowinski, Guoqing Lin, Fernando Greene
Rosenstiel School of Marine & Atmospheric Science, University of Miami

The Interferometry map developed using PALSAR data of ALOS by University of Miami

Example of emergency observation by the International Charter (2)

- Earthquake in Chili February 27 2010.

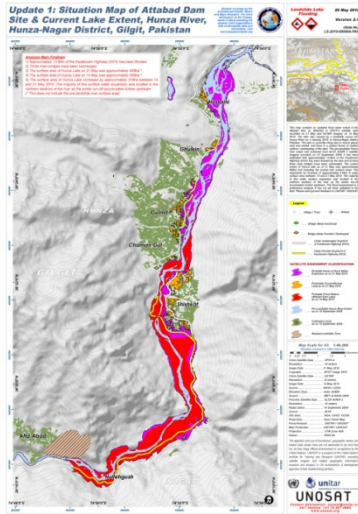


Interferometry Map using PALSAR data analyzed by JAXA .

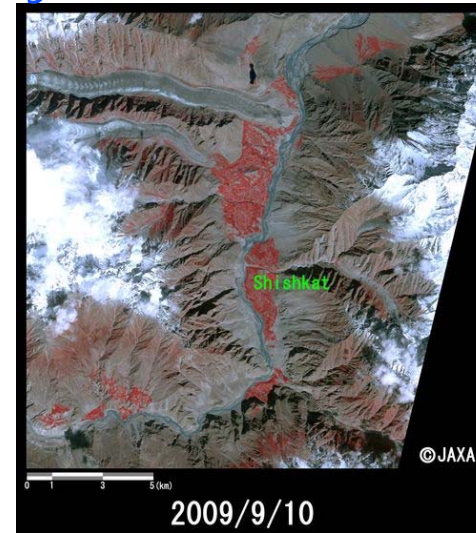
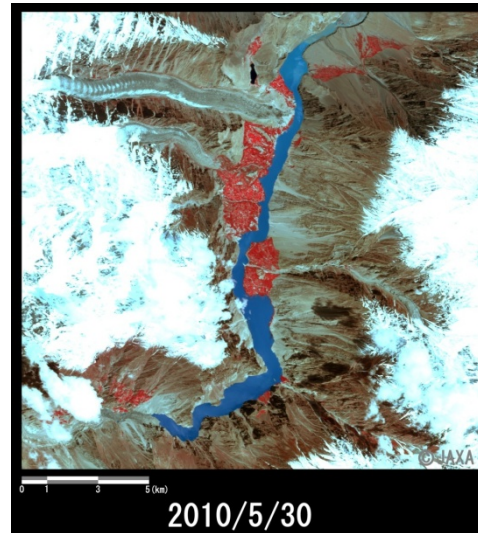
Image of Santiago observed by AVNIR-2 around 9 hours later the Earthquake occurred.

Example of emergency observation by the International Charter (3)

- Flood in Hunza River, Pakistan May 12 2010.



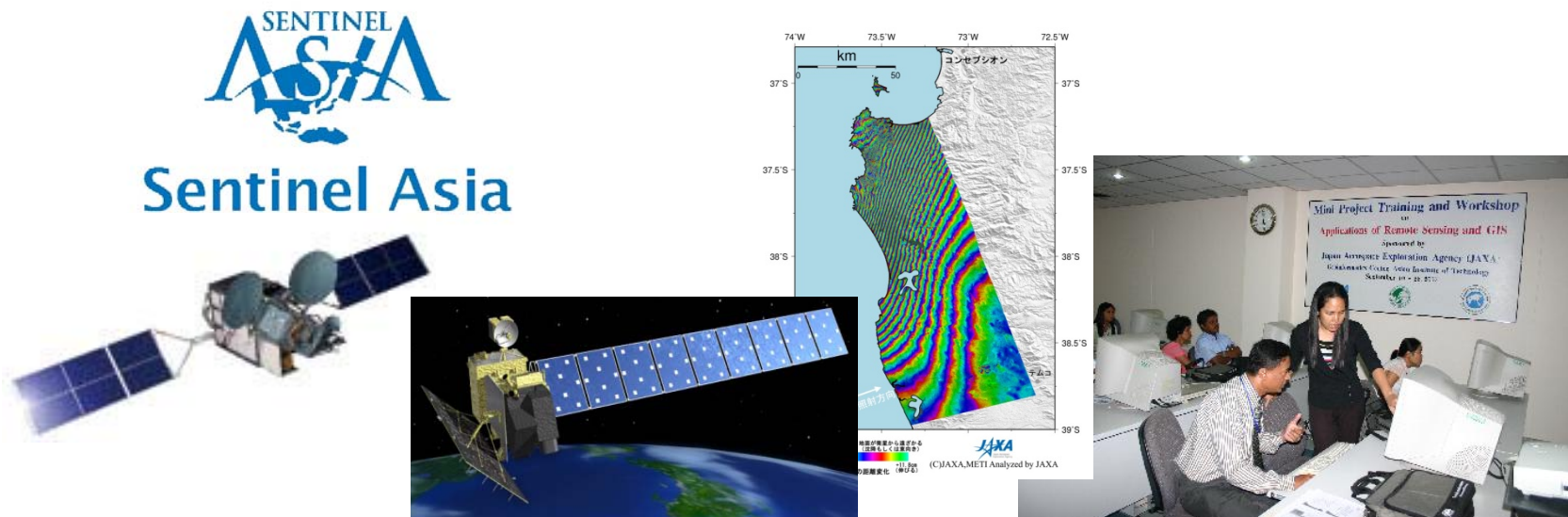
**Situation Map
Analyzed and
developed by UNOSAT**



**the Bird's view of
Hunza River**

Summary

JAPAN will contribute continuously to Disaster management support using Space Technology through the activity of Sentinel Asia, the contribution as a member of the International Charter, capacity building with a central focus on the Asia-Pacific region and with providing the knowledge from these activities to UN-SPIDER.



Thank You For Your Attention



http://www.jaxa.jp/index_e.html