

Sentinel Asia

Satellite Disaster Information Sharing by Sentinel Asia And its contribution to GEOSS

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Serious Damages in Asia (attacked by Natural Disaster)

Sumatra Tsunami Victims
221,856 peoples

Average of total loss during 1995 To 1999

■ All Asia

➤ Number of Disaster
 ■ 242
 ■ 92



➤ Economical Damage
 ■ 96 Billion US\$
 ■ 68 Billion US\$



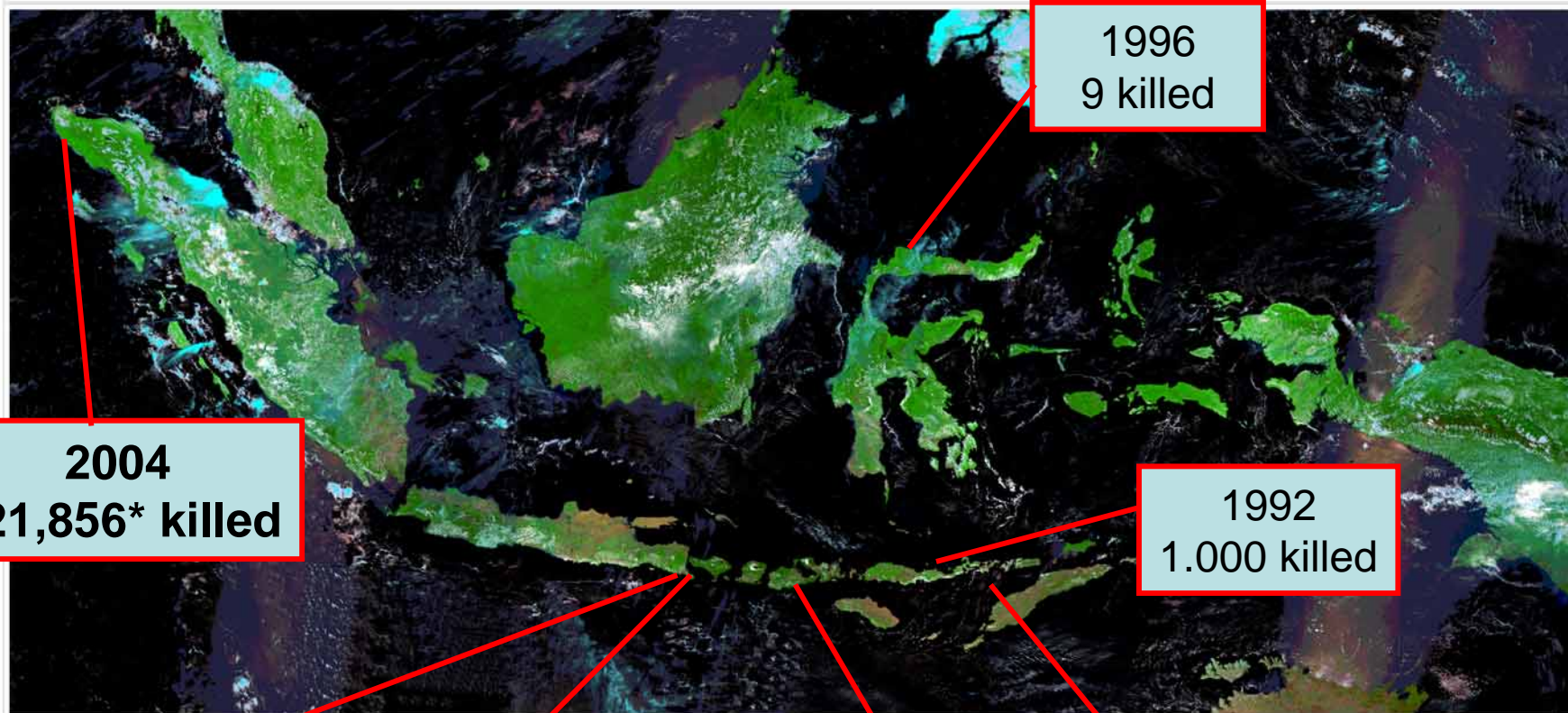
➤ Victims
 ■ 2.1 Hundred Million
 ■ 1.9 Hundred Million



Tsunami History in Indonesia

Almost big Tsunami has occurred at the trench line in Indian Ocean by the stress of plates motions

I N D O N E S I A



1996
9 killed

2004
221,856* killed

1992
1.000 killed

1994
238 killed

1917
15.000 killed

1815
10.000 killed

1883
36.000 killed

Sumber Data :
1. Citra MODIS
Tanggal Perse
2. Citra MODIS #
Tanggal Perse

*165,869 Indonesian



Established in 1993 after the Asia-Pacific International Space Year Conference (APIC) in 1992
Enhance the development of space programs in the Asia-Pacific region and promote regional cooperation in the field of space technology and its applications.

[Participation] Space agencies, related governments, regional and international organizations, institutions responsible for applying space technology.

[Organizers] MEXT, JAXA and co-host organizations

➤ **Past co-organizers:** Government entities of Mongolia, Malaysia, The Republic of Korea, Thailand, Australia

Working Groups



Earth Observation



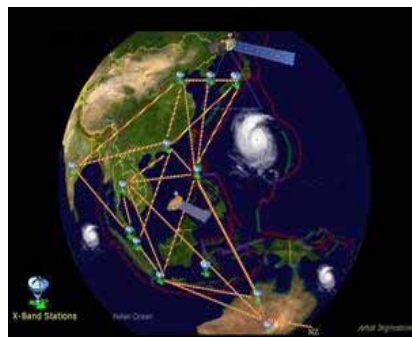
Communication Satellite Applications



ISS



Space Education & Awareness



Sentinel Asia Project
 establishing Disaster Management Support System

The 13th Session of APRSAF (APRSAF-13)
 5-7 Dec. 2006 in Jakarta Indonesia

Framework of Sentinel Asia

Voluntary and best-efforts-basis initiative by participating organizations

Space Community

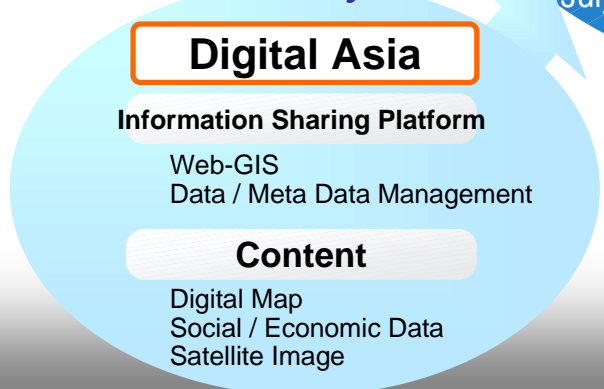


* Asian-Pacific Regional Space Agency Forum

International Community



Digital Earth / Web-GIS Community

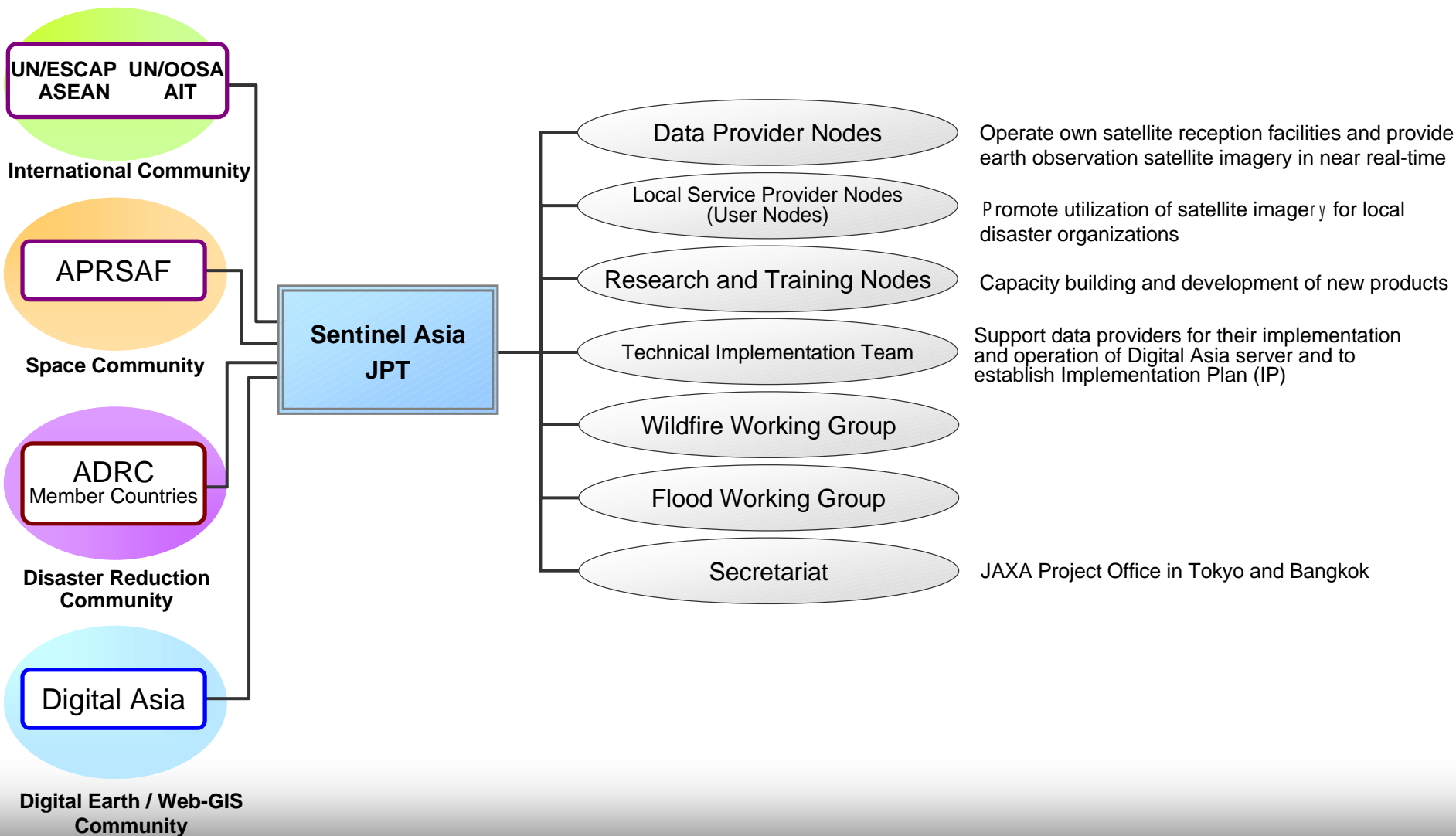


Disaster Reduction Community



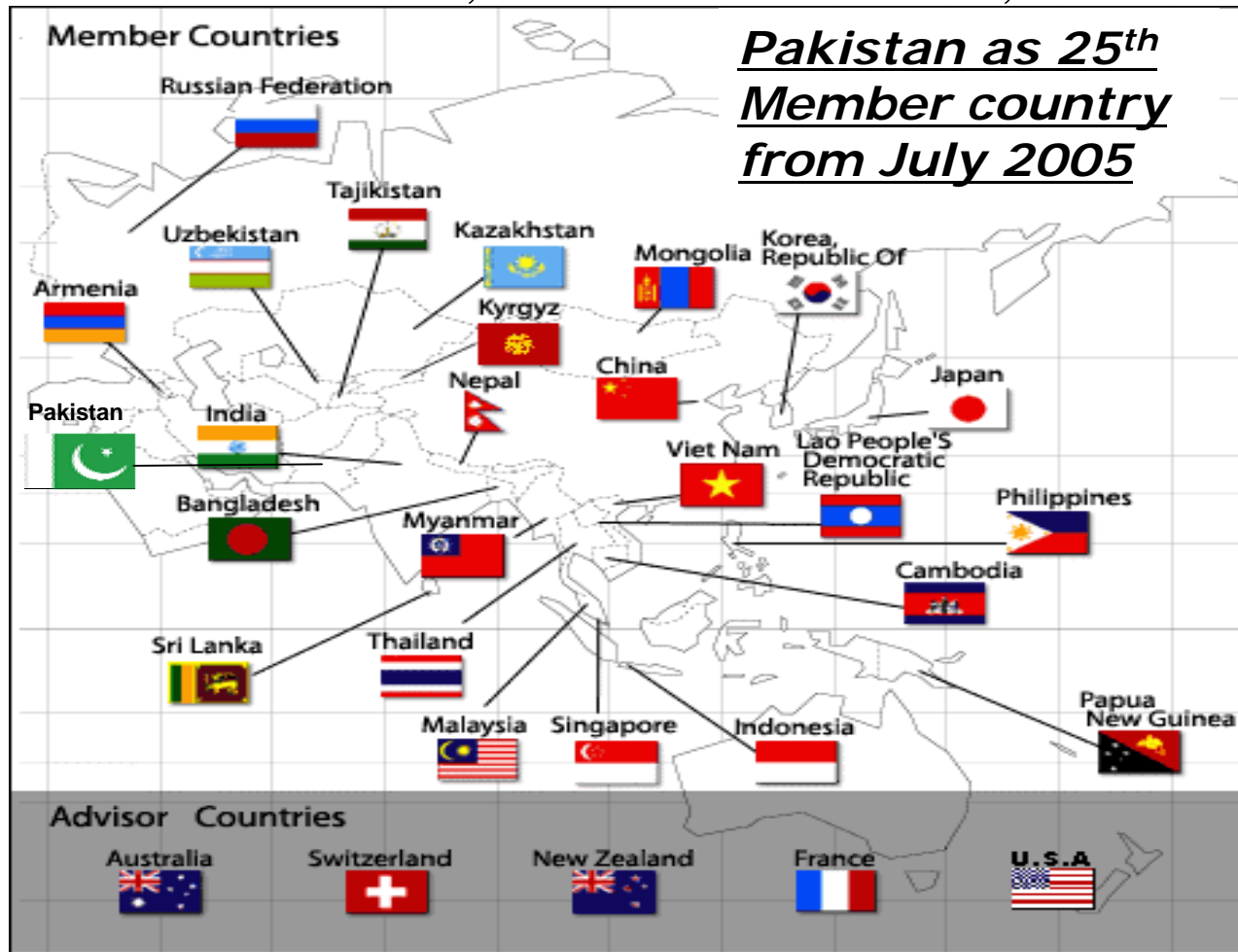
** Asian Disaster Reduction Center

Structure of Sentinel Asia



ADRC Member Countries

25 Member Countries, 5 Advisor Countries, 1 Observer



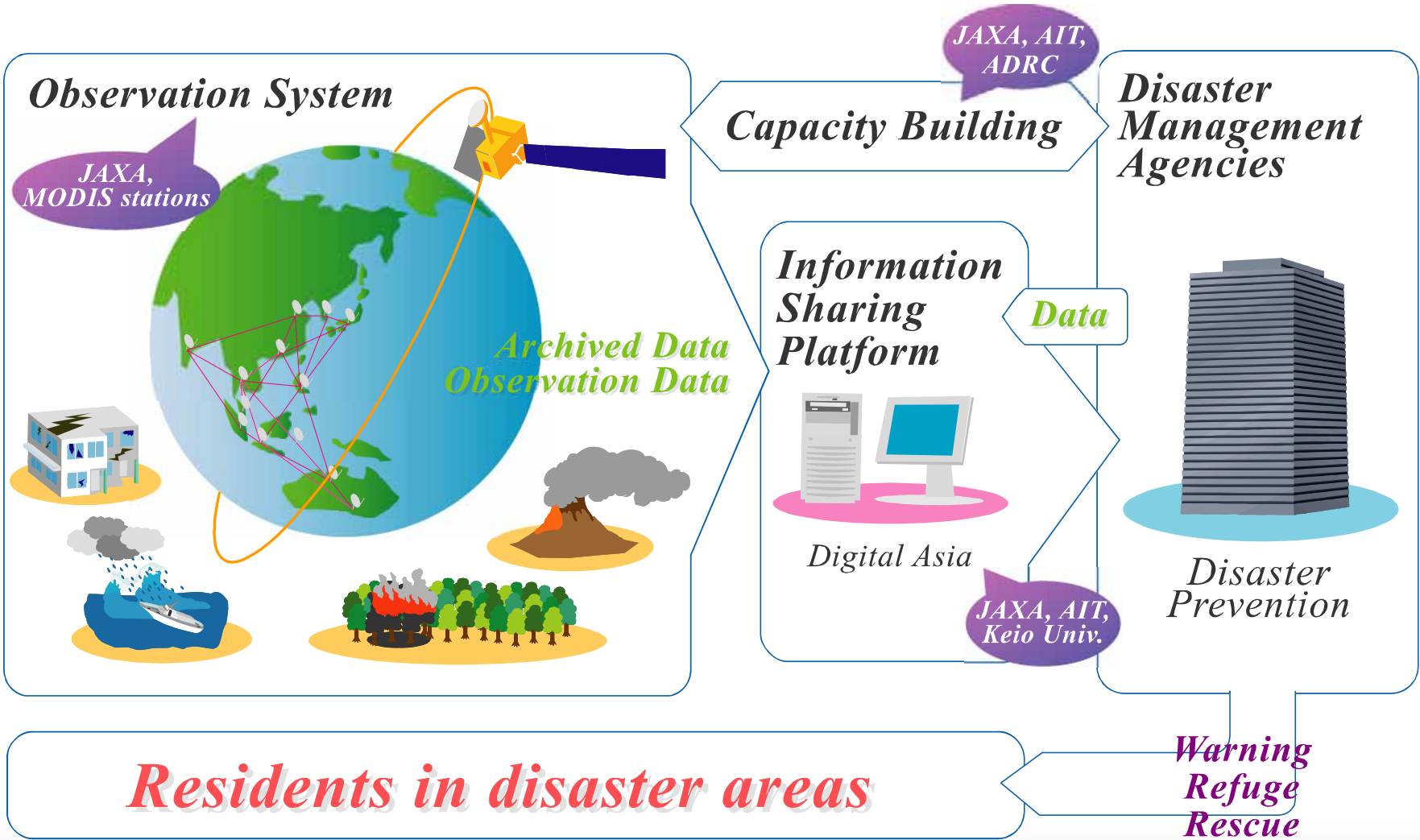
Implement Various Projects in cooperation with UN/ISDR, UN/OCHA, UNESCO, UNU, WMO, UN/ESCAP, etc.

Main Activities

- JAXA accepts ALOS emergency observation requests from ADRC members and Sentinel Asia members
- Wildfire monitoring by Satellite (MODIS, etc) >> on going
- Flood monitoring by TRMM and AMSR-E >>preparing
- Capacity-building for utilization of satellite images for disaster management>>on going

ALOS “DAICHI” Operation started in October 2006

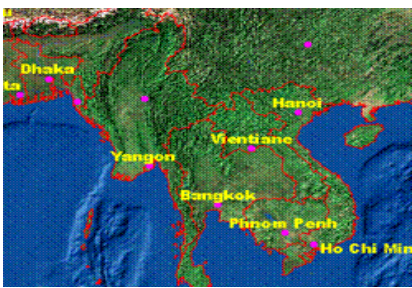
Overall Flow of Sentinel-Asia



Sentinel Asia (MODIS Wildfire Monitoring)



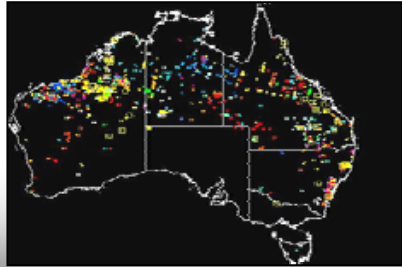
Hokkaido Univ. (Japan)



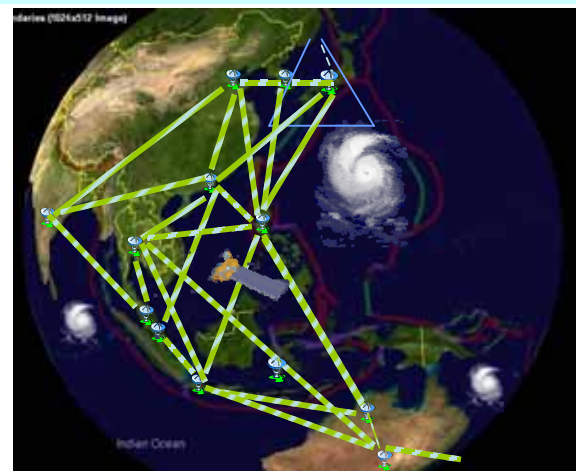
AIT/TokyoUniv. (Thailand)



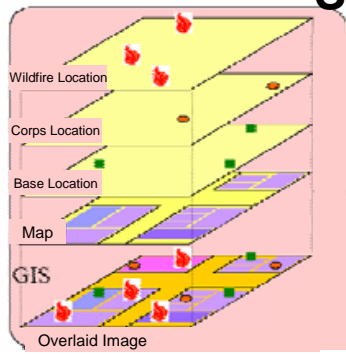
CRISP (Singapore)



CSIRO (Australia)



Satellite observation network



Integration by Digital Asia Web-GIS interface (Keio Univ.)

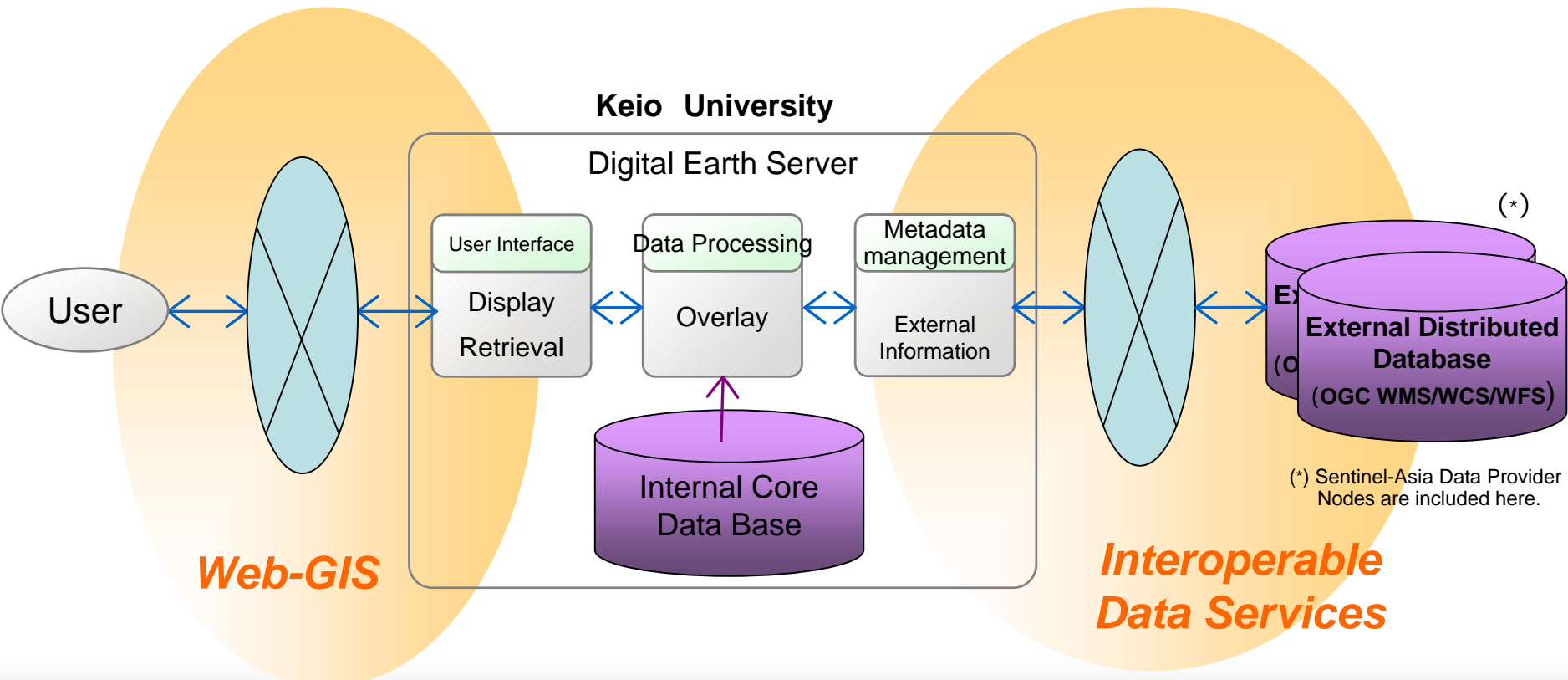
Main Activities

- Establishment and Improvement of Early Wildfire Detection based on MODIS
- Development of Wildfire Expansion Forecasting
- Serving Value-Added Information to Forest Fire Control Agency

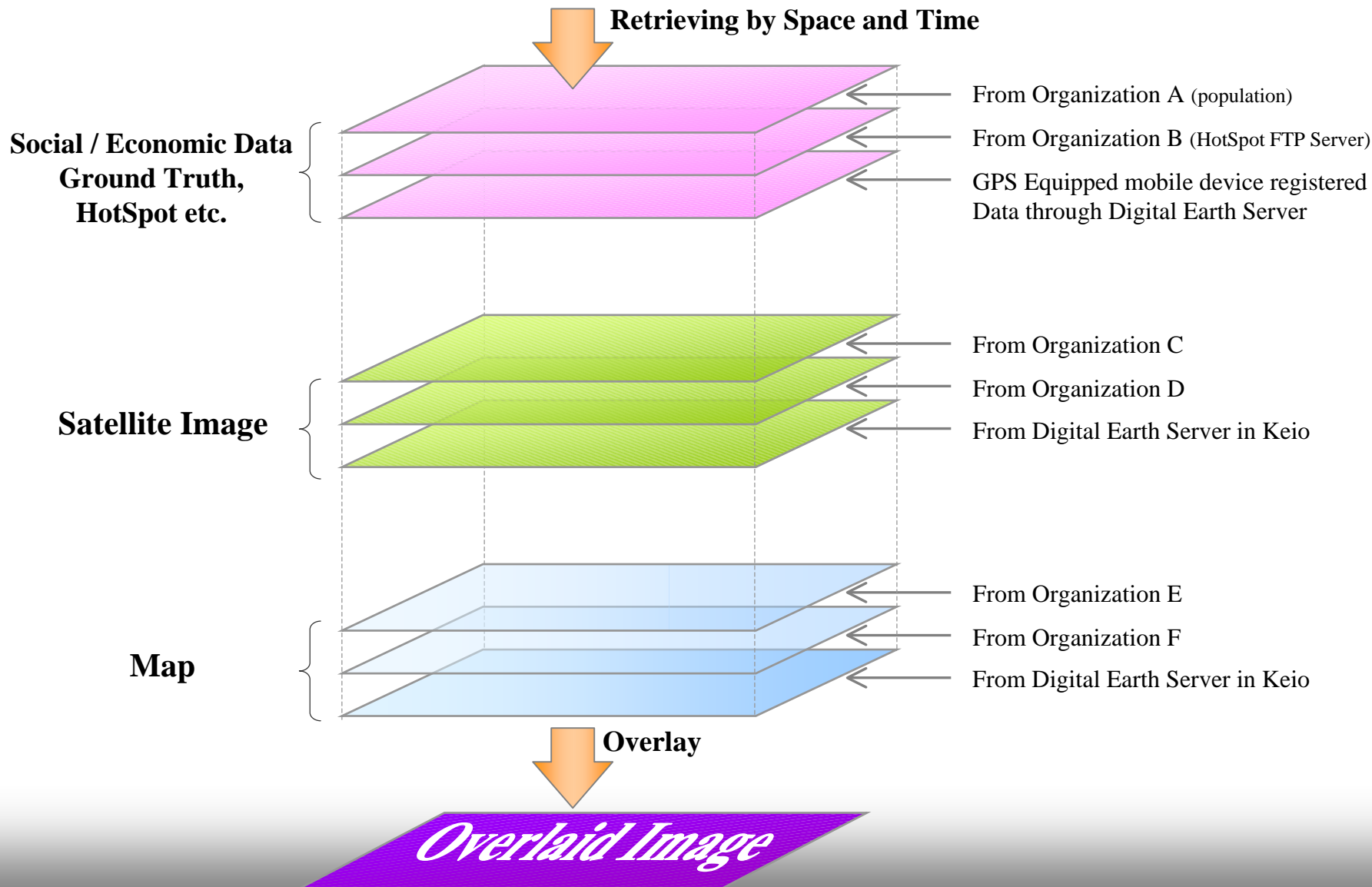


Wildfire map of Asia

Concept of Digital Asia



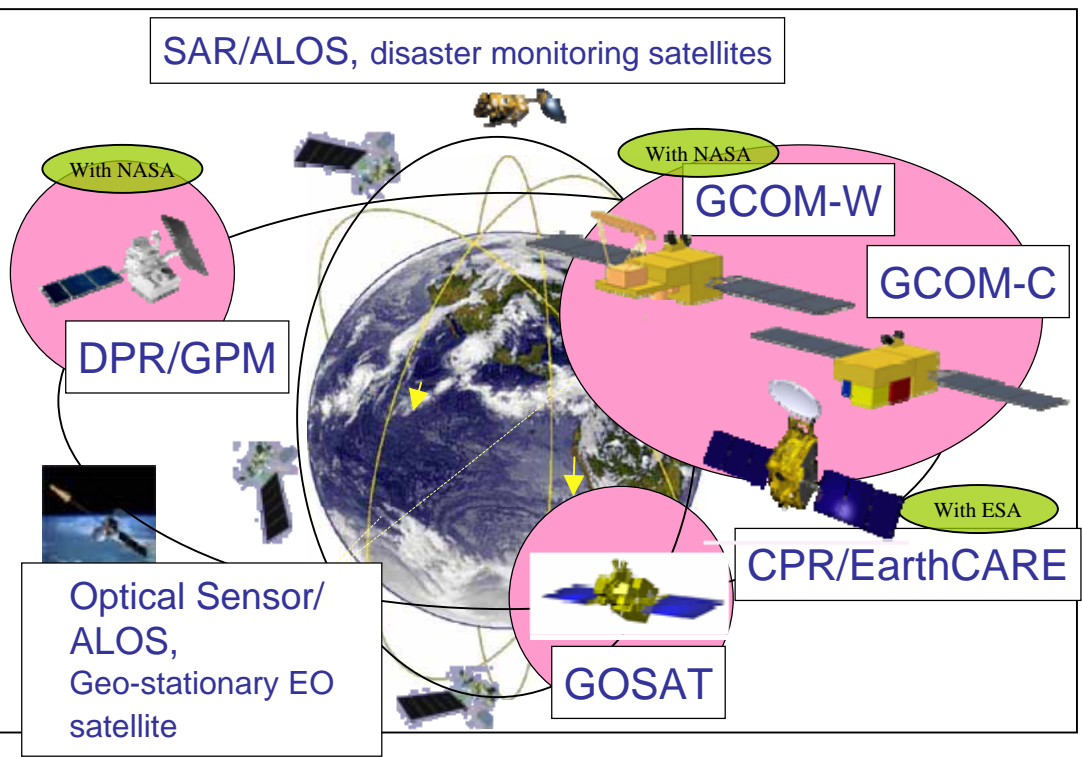
Overlay Processing of Digital Asia



JAXA Earth Observation Program for GEOSS

To develop and operate an Earth Observation System for GEOSS

A plan of advanced low Earth orbit satellites

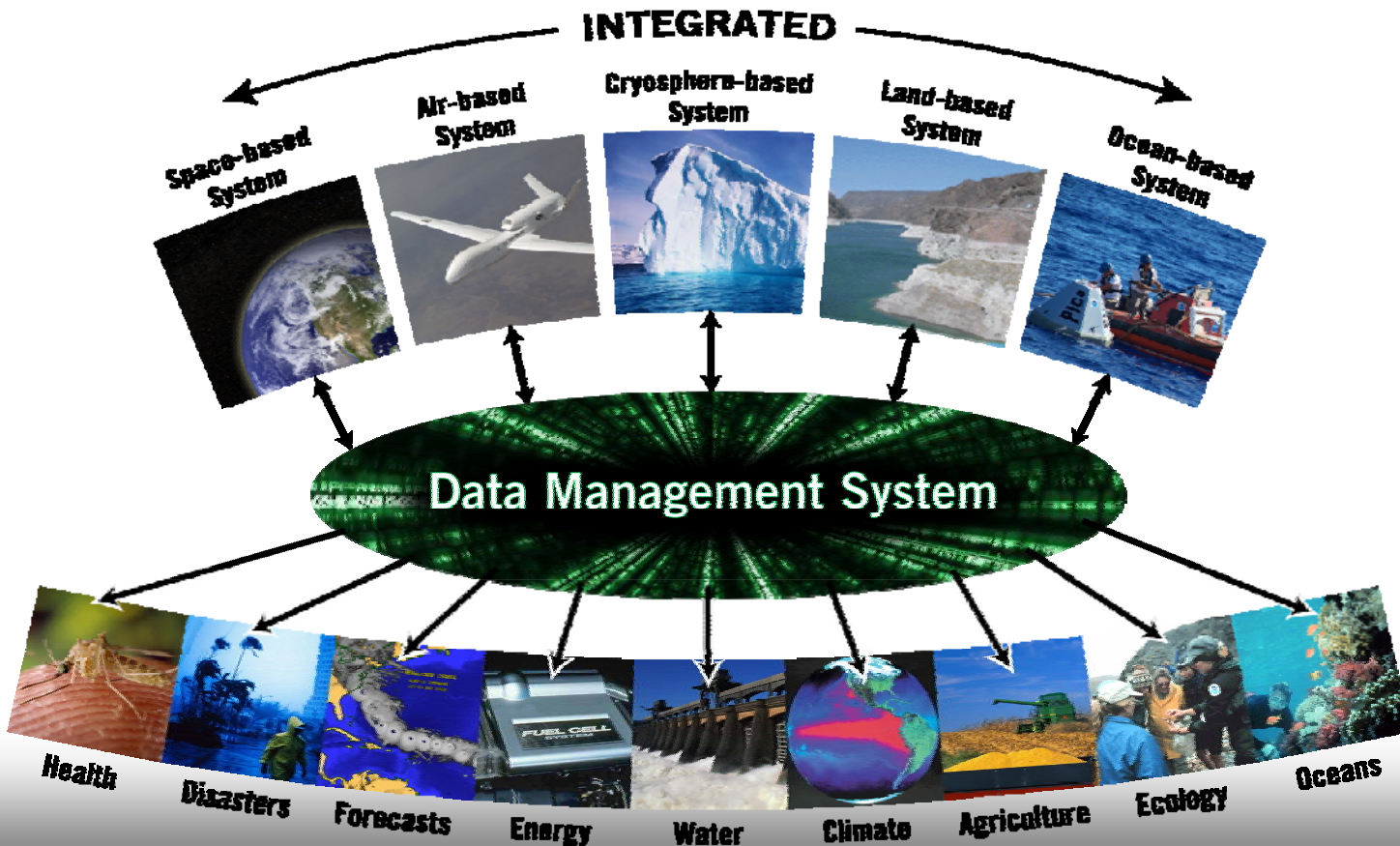


Water SBA <small>(Societal Benefit Area)</small>	Dual-frequency Precipitation Radar (GPM)
	AMSR2(GCOM-W)
	Scatterometer (GCOM-W)
Climate SBA	SGLI (GCOM-C)
	Cloud Profiling Radar (EarthCARE)
	Greenhouse Gas Observation Sensor (GOSAT)
Disaster SBA	SAR(ALOS, disaster monitoring satellites), Optical Sensor (ALOS, Geo-stationary EO satellite)

Sentinel Asia

GEOSS

- Comprehensive, coordinated and sustained Earth observation system of systems, serving for nine societal benefit areas
- GEOSS 10 Year Implementation Plan was adopted by the 3rd Earth Observation Summit, Brussels, Feb 2005



GEO-Netcast and Sentinel-Asia

