GROUP ON EARTH OBSERVATIONS

Global Earth Observation System of Systems

GEO Secretariat
Geneva, Switzerland

GROUP ON EARTH OBSERVATIONS

Group on Earth Observations

Intergovernmental Organization with 81 Members and 58 Participating Organizations (including WMO)

U.S. Department of State, Washington DC
July 31, 2003

GROUP ON EARTH OBSERVATIONS

GEOSS - Global Earth Observation System of Systems…

- **Coordinate and Sustain Observation Systems**
- **Provide Easier & More Open Data Access**
- **Foster Use through Science, Applications and Capacity Building**

… to answer Society's need for informed decision making

GROUP ON EARTH OBSERVATIONS

GEOSS

Global Earth Observation System of Systems

Distributed system of systems

- Improve coordination of strategies and observation systems
- Link all platforms: in-situ, aircraft, satellite, and buoy networks, etc.
- Facilitate exchange of data and information
- Identify gaps in our global capacity
- Improve decision-makers' abilities to address pressing policy issues
- Enable solutions for Societal Benefit

GROUP ON EARTH OBSERVATIONS

A Global, Coordinated, Comprehensive and Sustained System of Observing Systems

GROUP ON
EARTH OBSERVATIONS

THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS

A Global, Coordinated, Comprehensive and Sustained System of Observing Systems

GROUP ON EARTH OBSERVATIONS

WIS is an exemplar system (AR-09-02b)

Under "Interoperable Systems for GEOSS"

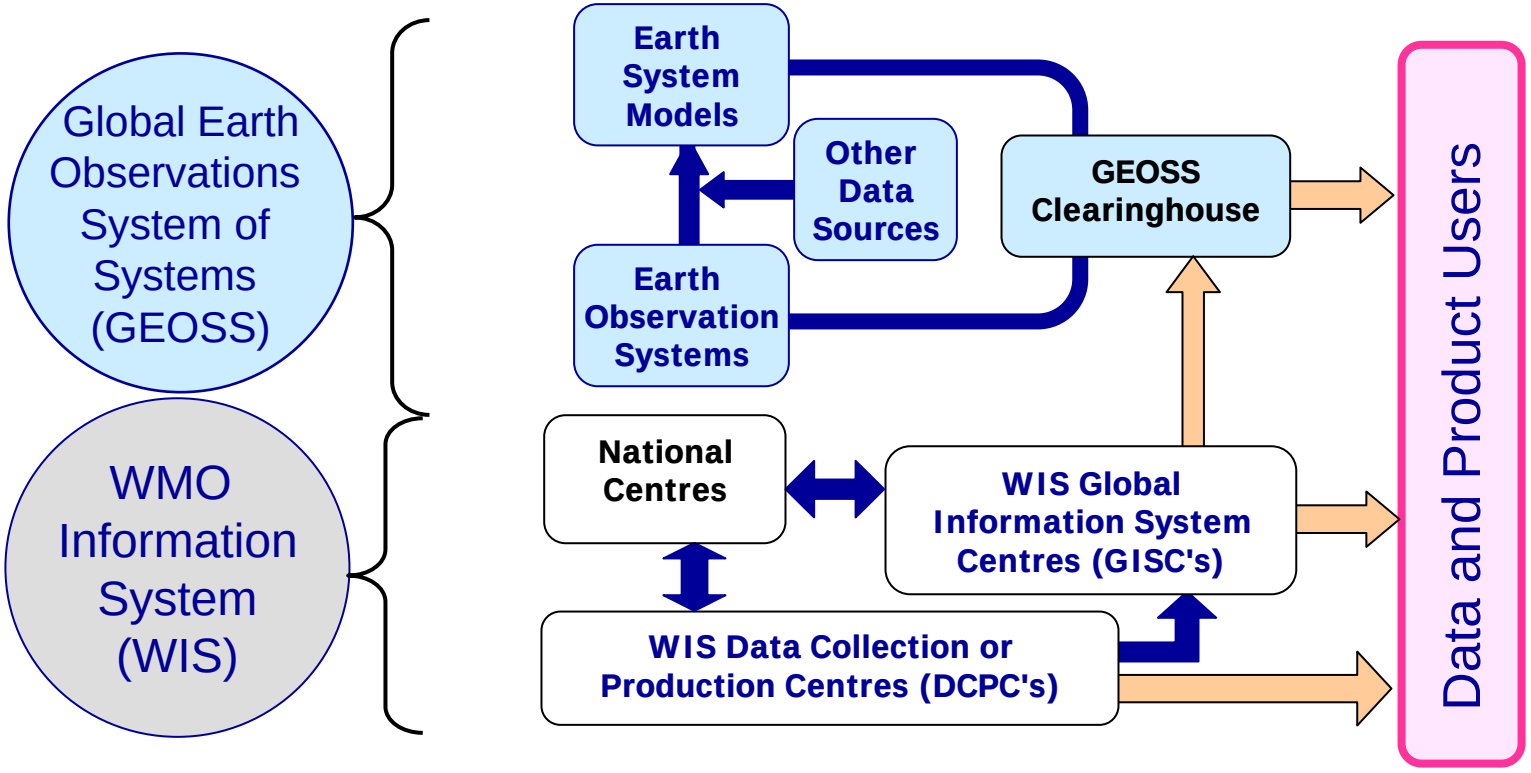
Sub-task Definition *(as given in the 2009-2011 Work Plan):*
Upgrade and demonstrate the WMO Information System (WIS) as one operational exemplar of the GEOSS architecture implementation process providing improvements for multiple societal benefit areas. Extend and further improve the existing WMO Global Telecommunications System (GTS) services to ensure time and operational-critical exchange of weather, water, climate and hydro-meteorological disaster data, warnings and products in response to identified user requirements. Implement procedures and mechanisms to provide to all national and international programmes and user communities data discovery and access services, including metadata compliant with relevant international standards. Improve connectivity and access to environmental information among WMO's Member Countries, and interoperability through registration in the relevant GEOSS registers – to facilitate timely decision making and exploitation of WMO's rich information base..

GROUP ON EARTH OBSERVATIONS

WIS and Selected WMO Observing and Data Exchange Systems

GROUP ON EARTH OBSERVATIONS

Global Earth Observations System of Systems (GEOSS)



GROUP ON EARTH OBSERVATIONS

Infrastructure for Numerical Weather Prediction

Under the Capacity Building for High-Impact Weather Prediction

Sub-task Definition *(as given in the 2009-2011 Work Plan):*
Develop improved system-infrastructures for the operation of numerical weather prediction in developing countries – building upon relevant WMO programmes. Identify gaps & needs and facilitate technical cooperative activities for the exchange of hardware, software, technologies, and expertise. In addition, co-organize a series of regional capacity building workshops with major numerical weather prediction centers to assist developing countries in their utilization of currently available forecasts.

Type	Member or PO	Representing	Contact Name	EmailAddress
Lead(PoC)	Korea	Korea Meteorological Administration	Yong-Seong Kang	yongseong@korea.kr
Lead				
Contributor	WMO	WMO	Jim Caughey	jcaughey@wmo.int

GROUP ON EARTH OBSERVATIONS

Infrastructure for Numerical Weather Prediction

This Task aims to improve the capability of processing NWP data in developing countries, in particular those in Asia and Africa.
A focus will be given to the development of system infrastructures for NWP model running in the countries.
Activities would include supporting Asian developing countries to benefit from the development of operational Global Interactive Forecast System (GIFS).

Progress (current status):
•KMA held the Training Workshop on Capacity Building in the African Region for Responding to Meteorological Disasters (16-30 May 2009, Seoul, 15 participants from 15 countries)
•KMA held the Training Course on Information and Communication Technologies for Meteorological Services (23 May-27 June 2009, Seoul, 14 participants)
More hours will be given to NWP modelling in this course in 2010.
•KMA supported the National Agency for Meteorology, Hydrology and Environmental Monitoring of Mongolia, for upgrading its NWP model from MM5 to WRF (Weather and Research Forecast) and web-based Forecast Analysis System in July 2009.
•KMA is planning a project to assist developing countries in improving

GROUP ON EARTH OBSERVATIONS

GEONETCast

Sub-task Definition(as given in the 2009-2011 Work Plan):

Establish GEONETCast as a distribution system for GEOSS related data, information and products using communication satellites and low cost, self-contained, stand alone, off-the-shelf reception stations. GEONETCast is particularly useful in distributing operational or project data where a large number of users can benefit and/or where Internet access has low bandwidth or is non-existent. GEONETCast has moved from a demonstration to a fully operational system with near-global coverage and is now evolving to incorporate full access to diverse and cross-cutting data serving all GEOSS Societal Benefit Areas. EUMETCast and GEONETCast America will, within their bandwidth capabilities, redistribute FENGYUNGCast data and products to all interested users in Europe and America. Similarly, FENGYUNCast will, within its bandwidth capabilities, redistribute EUMETCast and GEONETCast America data and products to all interested users in Asia. This will ensure that data is exchanged among all GEONETCast regional hubs.

GROUP ON EARTH OBSERVATIONS

GEONETCast

Type	Member or PO	Representing	Contact Name	EmailAddress
Lead(PoC)	USA	NOAA	Linda Moodie	Linda.Moodie@noaa.gov
Lead	China	CMA – NSMC	Jiashen Zhang	zhangjs@cma.gov.cn
Lead	EUMETSAT		Mike Williams	Mike.Williams@eumetsat.int
Lead	USA	NOAA	Paul Seymour	Paul.Seymour@noaa.gov
Lead	WMO	OBS/SAT/SBOS	Jérôme Lafeuille	JLafeuille@wmo.int
Contributor	EC	VITO	Tim Jacobs	tim.jacobs@vito.be
Contributor	Germany	Deutscher Wetterdienst (DWD)	Geerd-Rüdiger Hoffmann	Geerd-Ruediger.Hoffmann@dwd.de
Contributor	UNOOSA		Lorant Czaran	lorant.czaran@unoosa.org
Contributor	UNOOSA		Werner Balogh	werner.balogh@unoosa.org
Contributor	USA	NOAA	George Jungbluth	george.jungbluth@noaa.gov
Contributor	USA	NOAA	Helen Wood	helen.wood@noaa.gov

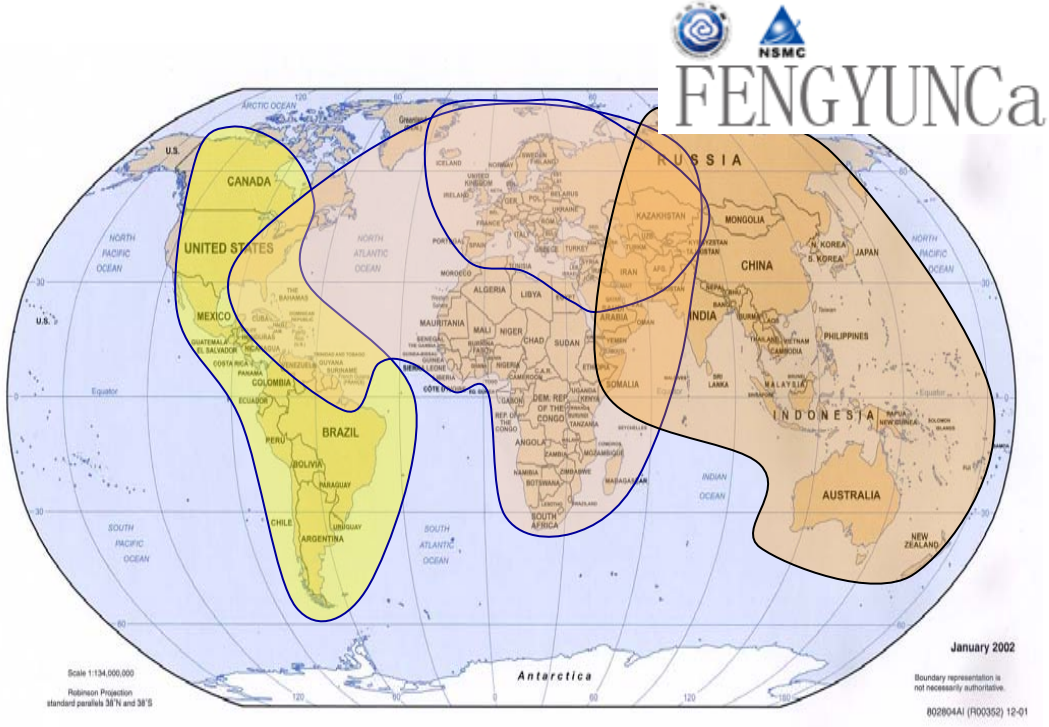
China

The China Meteorological Administration (CMA) maintains FENGYUNCast, their contribution to the global GEONETCast system, which covers Asia and parts of the Pacific.

GROUP ON EARTH OBSERVATIONS

GEONETCast

Space-based Dissemination System for Data, Products, Services and Early Warning



Global Coverage

Contributors

EUMETSAT

CMA

中国气象局
www.cma.gov.cn

NOAA

ROSHYDROMET

GROUP ON EARTH OBSERVATIONS

GEONETCast Receiving Stations

- Dedicated personal computer (~ $1000)
- Satellite antenna dish (1-3 m) (~ $300-1200)
- DTH receiver card or box (~ $200)

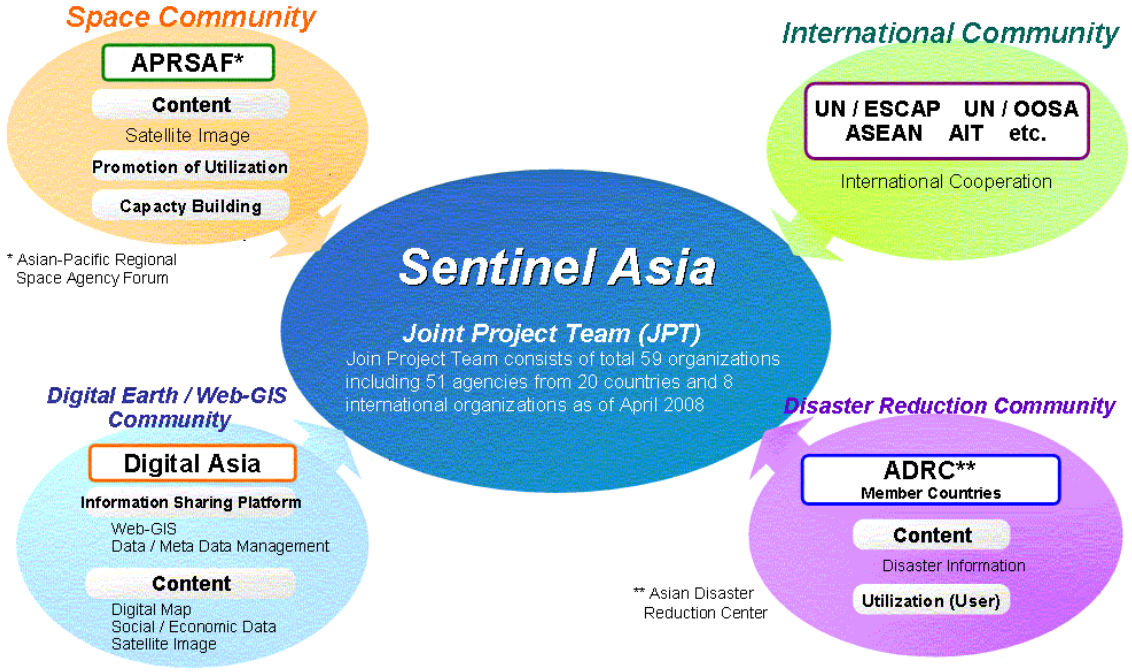
Data analysis and processing should be done on separate computer(s)

GROUP ON EARTH OBSERVATIONS

Sentinel Asia

Disaster Management Support System in the Asia-Pacific Region

Sentinel Asia is a "voluntary and best-efforts-basis initiatives" led by the APRSAF (Asia-Pacific Regional Space Agency Forum) to share disaster information in the Asia-Pacific region on the Digital Asia (Web-GIS) platform and to make the best use of earth observation satellites data for disaster management in the Asia-Pacific region.

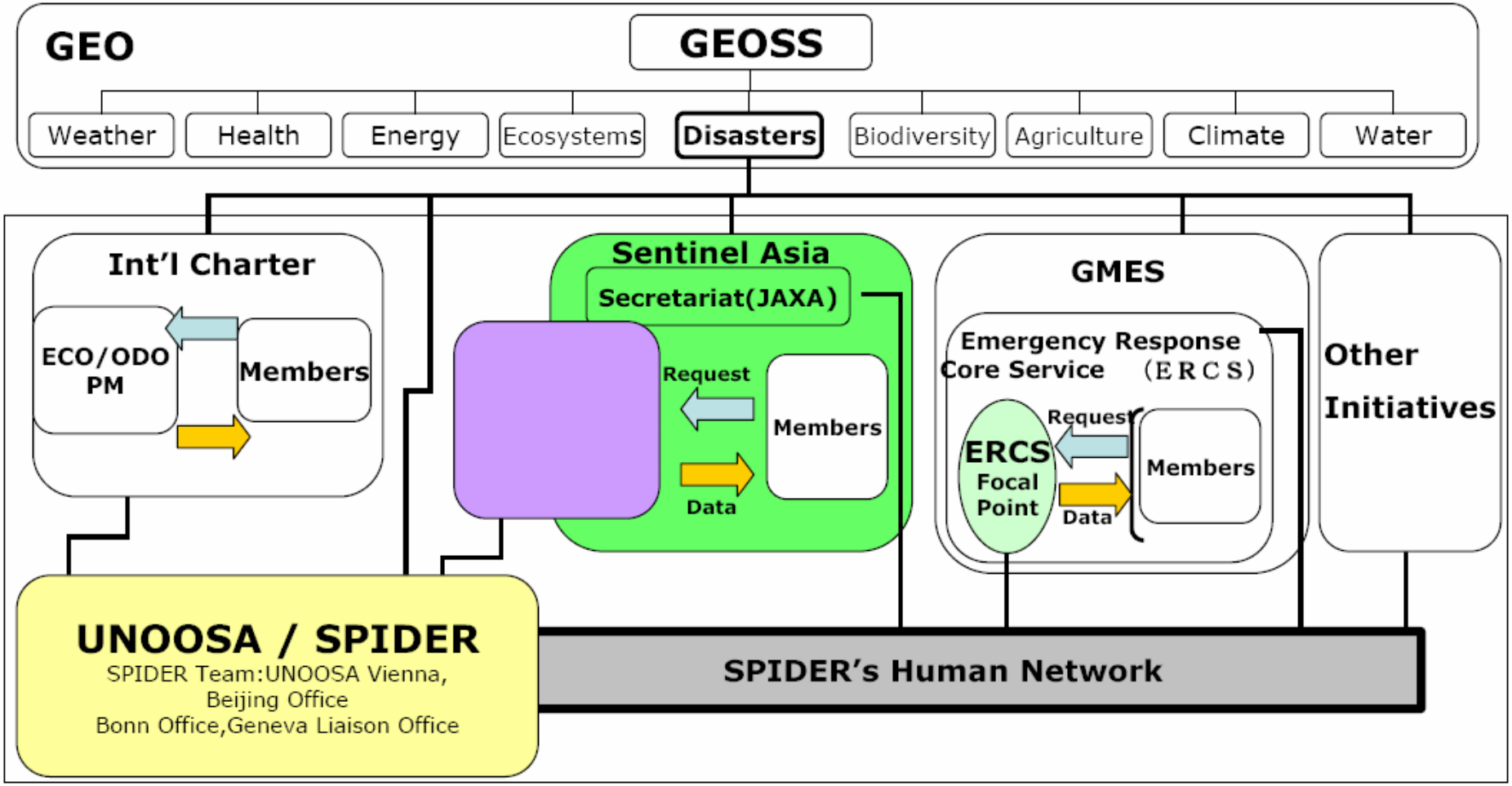


GROUP ON EARTH OBSERVATIONS

Sentinel Asia

Disaster Management Support System in the Asia-Pacific Region

Overall Picture of Existing Initiatives



1st Asian Water Cycle Symposium, Tokyo, Nov. 2005

1st Task Team Meeting, Bangkok, Sep. 2006

1st Capacity Building Workshop, Sep. 2006

2nd Asian Water Cycle Symposium, Tokyo, Jan. 2007

1st GEOSS AP Symposium, Tokyo, Jan. 2007

1st International Coordination Group Meeting, Bali, Sep. 2007

3rd Asian Water Cycle Symposium, Beppu, Dec. 2007

GEOSS
Asian Water Cycle Initiative (AWCI)

To promote integrated water resources management by making usable information from GEOSS, for addressing the common water-related problems in Asia.

Uniqueness

- A River Basin of Each Country
- Observation Convergence
- Interoperability Arrangement
- Data Integration
- Open Data & Source Policies
- Capacity Building
- Early Achievements

GEOSS Asian Water Cycle Initiative (AWCI)

19 Member Countries

18 River Basins for Initial Demonstration


GROUP ON
EARTH OBSERVATIONS

GROUP ON
EARTH OBSERVATIONS

Thank you!

GROUP ON
EARTH OBSERVATIONS

Thank you!

Koki Iwao, Dr. Eng.
GEO Secretariat

7bis, avenue de la Paix
Casale postale 2300
Ch-1211 Geneva 2, Suisse

www.earthobservations.org