

# G-8 Conclusions as They Relate to CEOS and GEO

Chu Ishida

JAXA

# G8 and CEOS, GEOSS

- G7 and CEOS
  - CEOS was established in 1984 by recommendation of a Panel of Experts on Remote Sensing from Space, under aegis of G7
- G8 and GEOSS
  - G8 Evian Summit, 2004, agreed to strengthening int'l cooperation on global observations
  - Three EO Summits in 2004, 2005 and 2006 established GEOSS 10 year IP
  - G8 Gleneagle Summit, 2006, welcomed the adoption of GEOSS 10 year IP
  - G8 Heiligendamm Summit, 2007, agreed to exercise leadership for building GEOSS
  - G8 Toyako Summit, 2008, agreed to accelerate the GEOSS activities in priority areas of climate change and water resource management

# G8 Toyako Summit Declaration

- Environment and Climate Change
    - Climate Change
30. Recognizing that poorer countries are among the most 31. To respond to the growing demand for Earth observation data, **we will accelerate efforts within the Global Earth Observation System of Systems (GEOSS)**, which builds on the work of UN specialized agencies and programs, **in priority areas, inter alia, climate change and water resources management, by strengthening observation, prediction and data sharing.** We also support **capacity building for developing countries in earth observations** and promote interoperability and linkage with other partners.”

# G8 Summit Declaration

- **Environment and Climate Change**

- **Climate Change**

30. Recognizing that poorer countries are among the most vulnerable to the adverse impacts of climate change, we will continue and enhance cooperation with developing countries, in particular least developed countries (LDCs) and small island developing states, in their efforts to adapt to climate change including **disaster risk reduction**.

# G8 Summit Declaration

- **Environment and Climate Change**

- **Forest**

36. We encourage actions for Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD) including the development of an international forest monitoring network building on existing initiatives. .. We will also consider ways to enhance our cooperation to combat forest fires.

# G8 Summit Declaration

- Development and Africa
    - Water and Sanitation
47. Moreover, we will promote **integrated water resource management** and the concept of 'Good Water Governance', with particular focus on **Sub-Saharan Africa and Asia-Pacific**, by taking necessary actions such as strengthening of trans-boundary basin organizations, sharing of water-related expertise and technology with developing countries, **support for capacity building for water-related initiatives, promotion of data collection and utilization**, and adaptation to climate change.

# Earth Observation Seminar

- 1<sup>st</sup> Seminar on Space-based Earth Observation for Climate Change, Washington DC, April 18, 2008
  - JAXA proposed acceleration of GEOSS implementation through strengthening cooperation on Global Forest Monitoring System, Global GHG Monitoring System, Global Water Cycle Monitoring System and Global Disaster Monitoring System
  - ESA proposed ECV initiative
- 2<sup>nd</sup> Seminar, Tokyo, September 18, 2008
  - Follow up of G8 Summit agreement on the acceleration of GEOSS activities in priority areas, inter alia, climate change and water resource management

# (IDEA 1) Global Forest Monitoring System

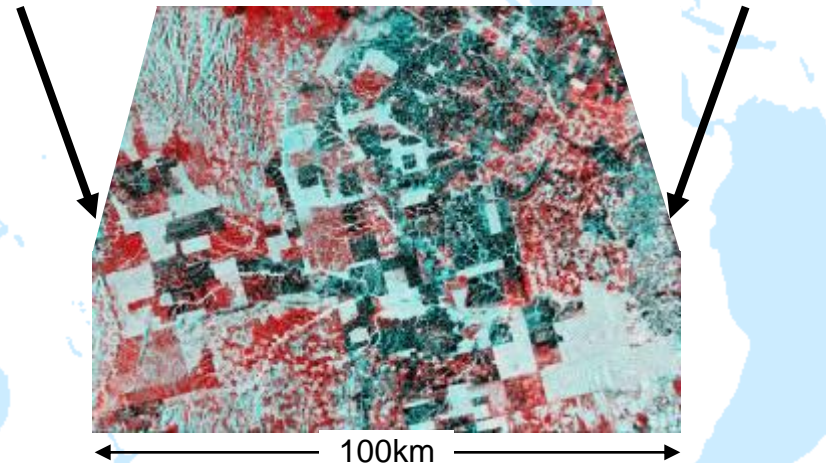
- CO2 emission by deforestation is 1.6B ton; equally 1/5 of total CO2 emission (8B ton).  
↓
- Especially in tropical rainforest areas covered by cloud  
↓
- COP13 recommended a new accounting method to reduce emission from deforestation & forest degradation (REDD).  
↓
- REDD needs a new accounting system to monitor quantitative CO2 emission



October 1996 (JERS-1)



June 2006 (ALOS)



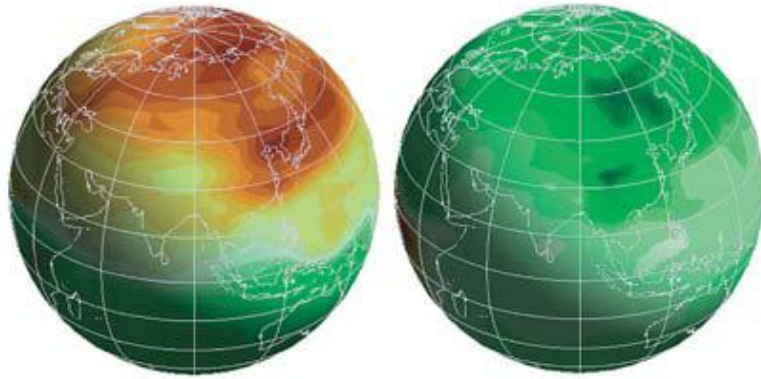
**Amazon Deforestation using JERS & ALOS**  
**(Red: 10yrs deforestation)**

## **Global Forest Monitoring System**

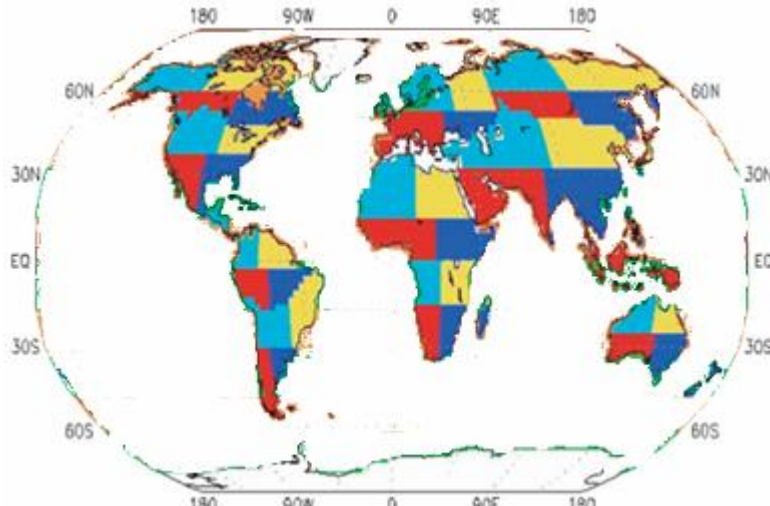
DESDynI (US)    Sentinel 1 (Europe)    Disaster Monitoring Satellites (Japan)



# (IDEA 2) Greenhouse Gases Monitoring System



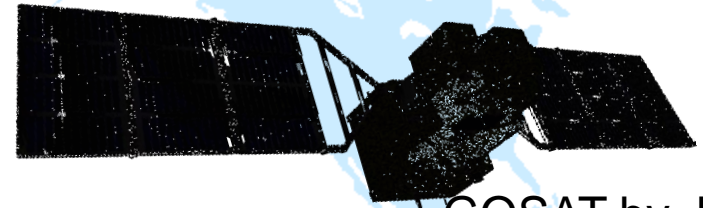
Simulated CO2 distribution as observed by GOSAT  
by National Institute for Environmental Studies



Moderate resolution inverse model estimation of  
the 64 regional monthly fluxes for 1988-2002  
by S. Maksyutov et al.



OCO by U.S.A



GOSAT by Japan

Two observatories will be launched  
around 2008

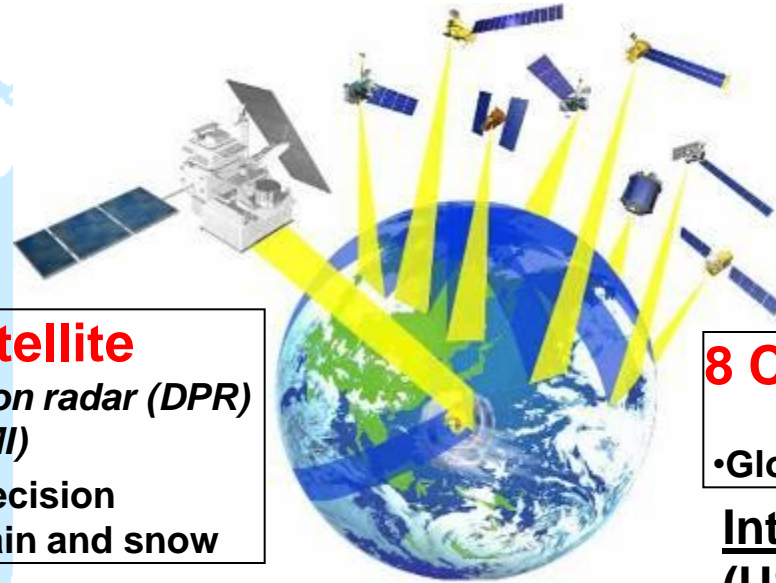
## Greenhouse Gases Monitoring System

ASCENDS  
(US)

A-SCOPE  
(Europe)

GOSAT F/O  
(Japan)

# (IDEA 3) Global Water Cycle Monitoring System



## **GPM Core Satellite**

*Dual-frequency precipitation radar (DPR)*  
*Microwave radiometer (GMI)*

- Precipitation with high precision
- Discrimination between rain and snow

**US and Japan will launch in 2013**

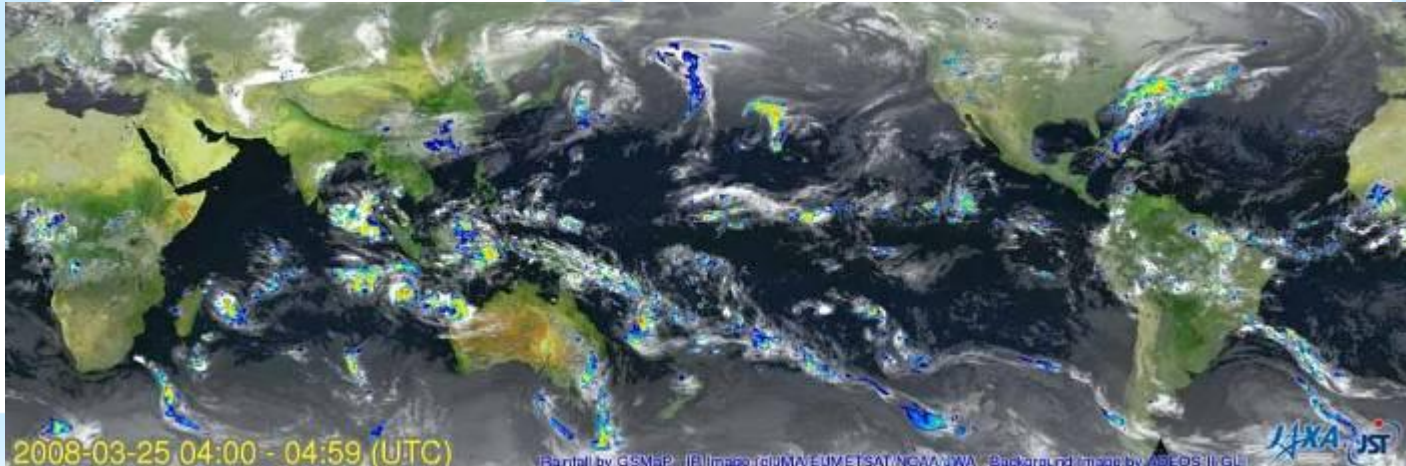
## **8 Constellation Satellites**

*Microwave radiometer*

- Global precipitation every 3 hours

**International cooperation**

(US, Europe, Japan, India, and others) will be achieved around 2013



World Precipitation Map every 3 hours

# (IDEA 4) Global Disaster Monitoring System

## Disaster Charter

