

# **GEONETCast: Global Dimension of Earth Information**

Linda V. Moodie  
GEONETCast Point of Contact  
June 27, 2007





# GEONETCast Workshop





Ramada Plaza Herradura Hotel

Location: Salon Bouganvillea

Date: June 27, 2007

Time: 13:30 to 16:30

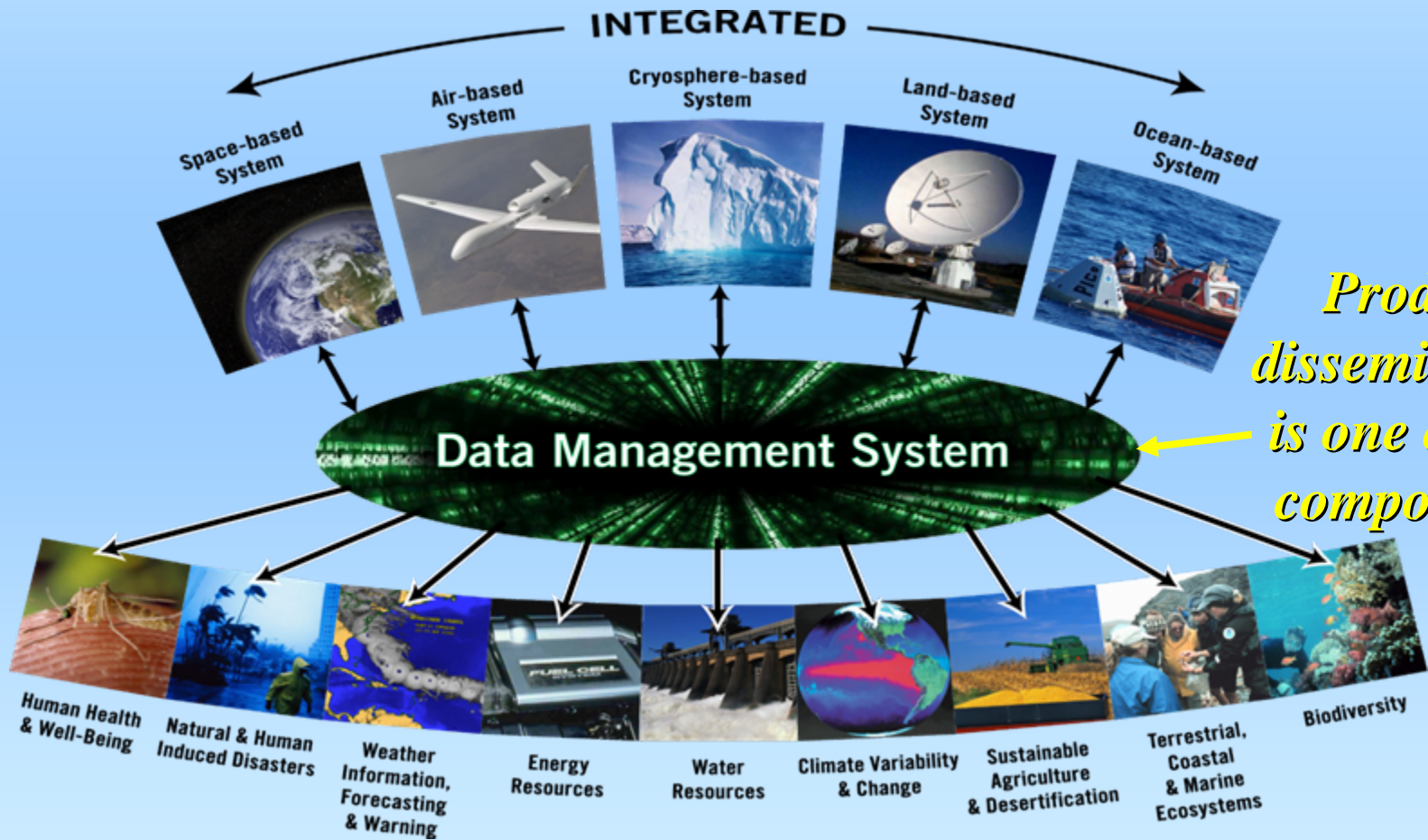
## Objectives of the workshop are to:

-  Broaden understanding of the initiative, including reception requirements
-  Demonstrate an initial real-time GEONETCast capability
-  Identify additional partners who might be able to provide data or products for transmission through the system
-  Work with those participating as users to identify additional data and products for transmission through GEONETCast.

# GEONETCast Workshop Agenda

<b>Time</b>	<b>Title</b>	<b>Speaker/Leader</b>
13:30 – 13:40	<b>Welcome, Aims and Objectives of the Workshop</b>	Linda Moodie, GEONETCast Point of Contact
13:40 – 14:00	<b>Overview of GEONETCast</b>	Linda Moodie, GEONETCast Point of Contact
14:00 – 14:20	<b>Coordination and Engagement in the Americas</b>	Helen Wood, NOAA GEOSS Integration Manager
14:20 – 14:40	<b>GEONETCast Americas</b>	Richard Fulton, NOAA Special Projects Manager
14:40 – 15:00	<b>Discussion</b>	
15:00 – 15:30	<b>Coffee Break</b>	
15:30 – 16:15	<b>GEONETCast Demonstration</b>	Richard Fulton, NOAA Luiz Machado, INPE Dan Irwin, NASA/SERVIR
16:15 – 16:30	<b>Wrap-up</b>	Linda Moodie, GEONETCast Point of Contact

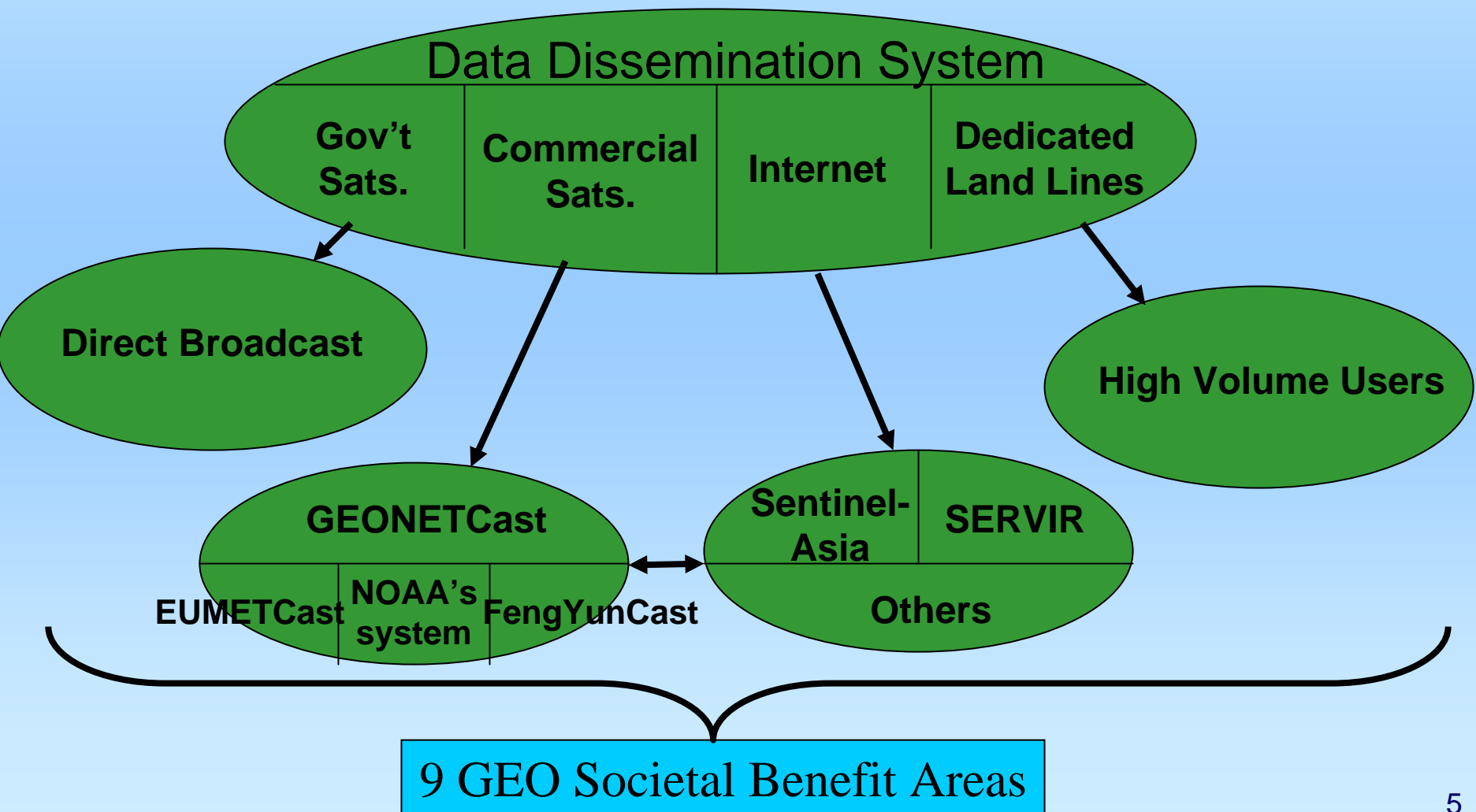
# Global Earth Observation System of Systems (GEOSS)



*Product dissemination is one of key components*

# Notional Dissemination Component of the GEOSS Data Management System of Systems

*GEONETCast is one component*





# GEONETCast

## What is it?

GEONETCast is a near real-time data dissemination system -- in support of the GEO societal benefit areas -- by which environmental *in situ*, airborne, and space-based observations, products, and services are transmitted to users through satellites.

It is one component of the overall GEOSS architecture.

**Why?** To provide environmental data to users who would not otherwise have access to it.

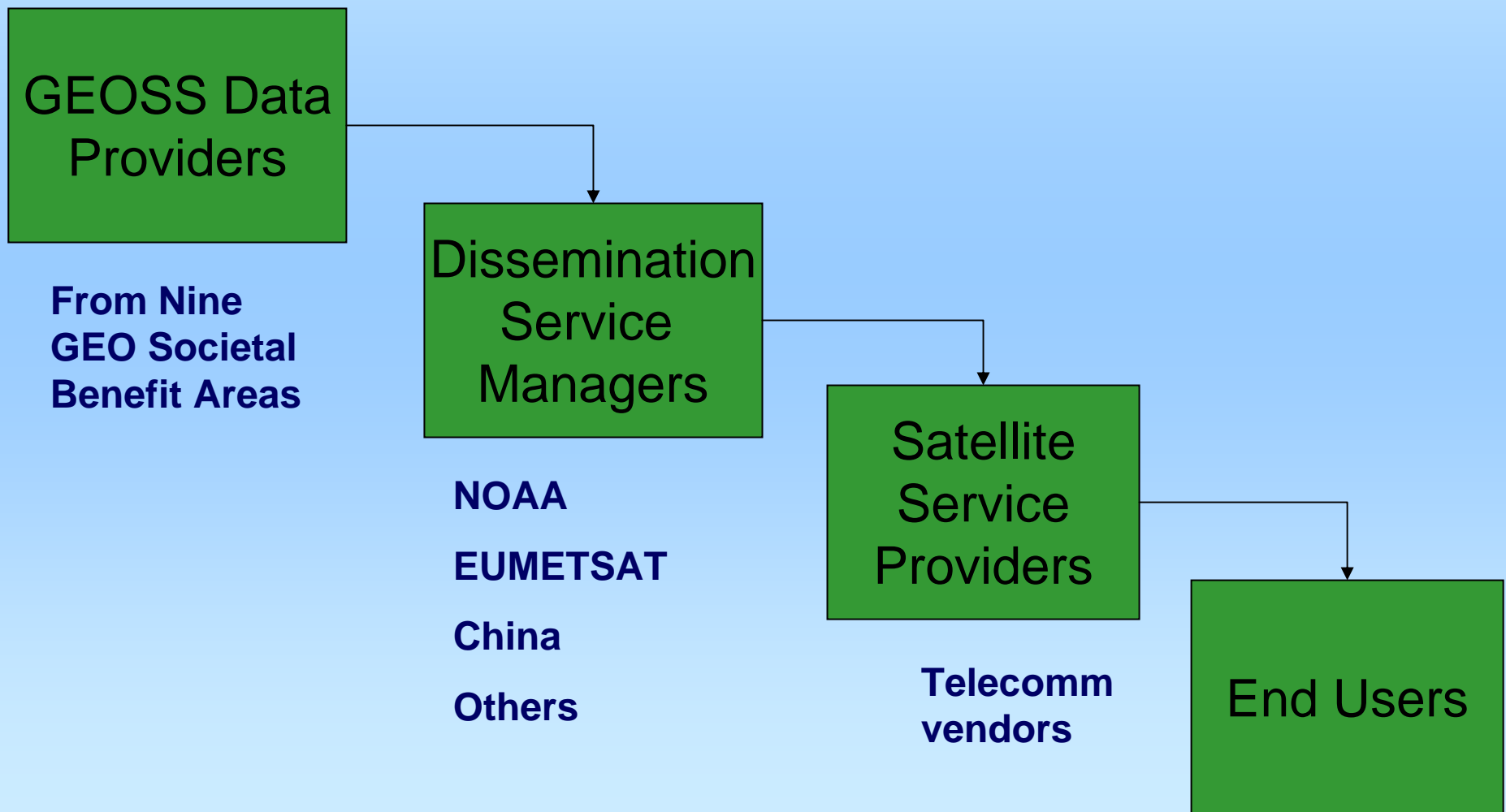
**When?** Target is to demonstrate an initial global capability by Earth Observation Summit-IV, November 2007



# Overall Concept

- **An integrated global system of regional data dissemination systems for the delivery of data, products, and services contributed to GEOSS**
  - Data from in-situ and space-based observing systems in standard formats
  - Supporting all nine GEO societal benefit areas
  - Built on existing systems, where appropriate
- **Transmitted to low-cost ground receiving stations through satellites**
  - Use of commercial, off-the-shelf components
  - Use of standard, multicast, dissemination protocols, such as Digital Video Broadcast (DVB), to encapsulate products of any format
- **Dissemination is full and open, respecting existing data policies**
- **The cost of satellite communications for each sector of the globe is funded by one or more partners in GEONETCast, and the day to day management of each sector is under their responsibility**

# Major GEONETCast Participants



# Inexpensive GEONETCast Receiver Station

- Dedicated personal computer (~ \$1000)
- Satellite antenna dish (~2.4 m) (~ \$1600)
- DTH receiver card or box (~ \$200)



Data analysis and processing should be done on separate computer



# Interface to GEO

GEO, in December 2005, adopted the concept in principle of GEONETCast, as presented by NOAA and EUMETSAT

GEONETCast identified as key GEO Work Plan task for 2006 and again for 2007-2009

GEO Architecture and Data Committee has oversight

- 🌐 Must coordinate also with Capacity Building and User Interface Committees

GEONETCast Implementation Group (US/NOAA, China, EUMETSAT, WMO) leads and manages the initiative

- 🌐 Could include involvement of other infrastructure providers when identified

# GEONETCast Implementation Group

**Linda Moodie (NOAA) : GEONETCast Point of Contact for GEO**

## US/NOAA

🌐 Richard Fulton



## China/CMA

🌐 Fan Jinlong



## EUMETSAT

🌐 Michael Williams



## WMO

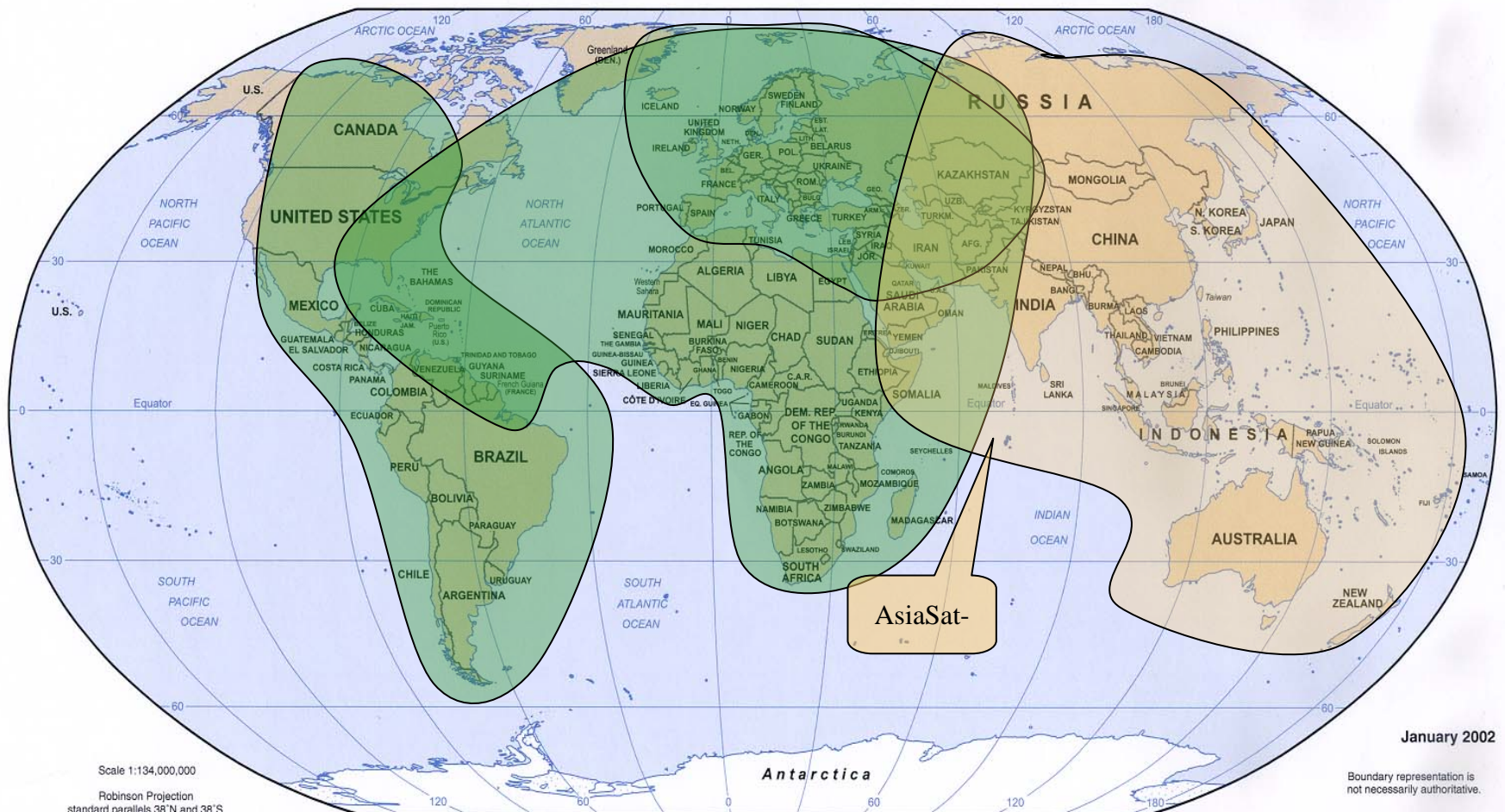
🌐 Donald Hinsman



Co-leads

**Other potential infrastructure contributors**

# Global GEONETCast Coverage



January 2002

Boundary representation is not necessarily authoritative.

802804AI (R00352) 12-01

Scale 1:134,000,000  
Robinson Projection  
standard parallels 38°N and 38°S



# Chinese Contribution

China confirmed its FengYunCast data dissemination system to be an integrated component of GEONETCast in August 2006

- 🌐 Moved from narrower Ku-band coverage to broader C-band coverage (AsiaSat-4 at 122E) in December 2006
- 🌐 110 DVB-S user stations currently
- 🌐 Expanded number of stations to Bangladesh, Indonesia, Iran, Mongolia, Pakistan, and Thailand
- 🌐 Currently focused mostly on transmission of meteorological satellite data and products (FY-1, FY-2C, MTSAT, NOAA/POES, MODIS)

Russia testing MITRA satellite data dissemination system

- 🌐 Informal discussions: late 2006-early 2007
- 🌐 In April 2007 they indicated they wished to contribute it to GEONETCast
- 🌐 Meeting between Russia and GEONETCast Implementation Group representatives on July 5



# GEO Members and Organizations Indicating Interest in GEONETCast

Argentina

Australia

Brazil

**China (co-lead)**

European Commission

Finland

Germany

Greece

Japan

Korea

New Zealand

Russia

South Africa

United Kingdom

**United States (co-lead)**

African Association of Remote Sensing of the Environment (AARSE)

Committee on Earth Observation Satellites (CEOS)

European Space Agency (ESA)

EUMETNET

**EUMETSAT (co-lead)**

Federation of Digital Broadband Seismographic Networks (FDSN)

International Institute of Space Law (IISL)

Open Geospatial Consortium (OGC)


**World Meteorological Organization (WMO) (co-lead)**



# First International GEONETCast Participants Meeting

July 19, 2006, Seattle, WA

- NOAA hosted
- Coordination to ensure that there is a consensus understanding of the initiative
- Identify partners willing to provide other components, both infrastructure and data products, to contribute to a near global dissemination capability
- Solicit user requirements
- Live demonstration provided

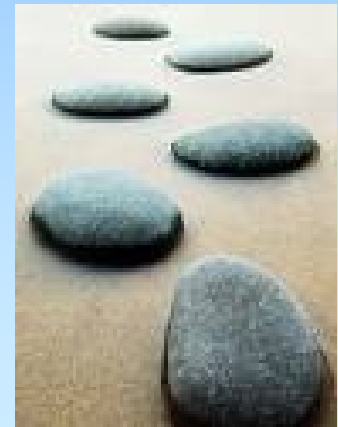


# GEONETCast Live Demonstrations

- European Commission Workshop, Belgium, 5/3/06
- GEO Capacity Building Committee Workshop, Brazil, 5/29/06
- Meteorological Satellite Data Users Course, Brazil, 7/06
- First GEONETCast Participants Meeting, USA, 7/19/06
- GEO Architecture and Data Committee Meeting, USA, 7/20/06
- GEOSS Workshop, IEEE Int'l Geophysical and Remote Sensing Symposium, USA, 7/30/06
- GEO Plenary-III, Germany, 11/06

# Next Steps Globally: 2007 Activities

- Work out technical interoperability mechanisms between EUMETCast, FengyunCast, and GEONETCast Americas
- Establish agreements on exchange of data between the respective systems
- Discuss with Russia its potential involvement as an infrastructure provider
- Continue to work with potential data providers to expand product suite to include all nine GEO societal benefit areas
- Continue to work with users to define product requirements





# Next Steps Globally: 2007 Calendar

- 🌐 June 27: GEONETCast Workshop, as part of ISRSE in Costa Rica
- 🌐 September 13-14: Report to GEO Architecture and Data Committee, Silver Spring, Maryland
- 🌐 September 17-19: GEOSS Americas Symposium, Brazil
- 🌐 October 11-12: GEONETCast Workshop with GEO Capacity Building and User Interface Committees, Beijing, China
- 🌐 November 30: Demonstrate initial global capability, Earth Observation Summit-IV, Capetown, South Africa