Global Earth Observation System of Systems

Paving the way toward more informed decision making

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GEOSS

Global Earth Observation System of Systems

A distributed system of systems

- Improves coordination of strategies and observation systems
- Links all platforms: in situ, aircraft, and satellite networks
- Identifies gaps in our global capacity
- Facilitates exchange of data and information
- Improves decision-makers' abilities to address pressing policy issues

The Benefits of Earth Observations

Provide the right information,

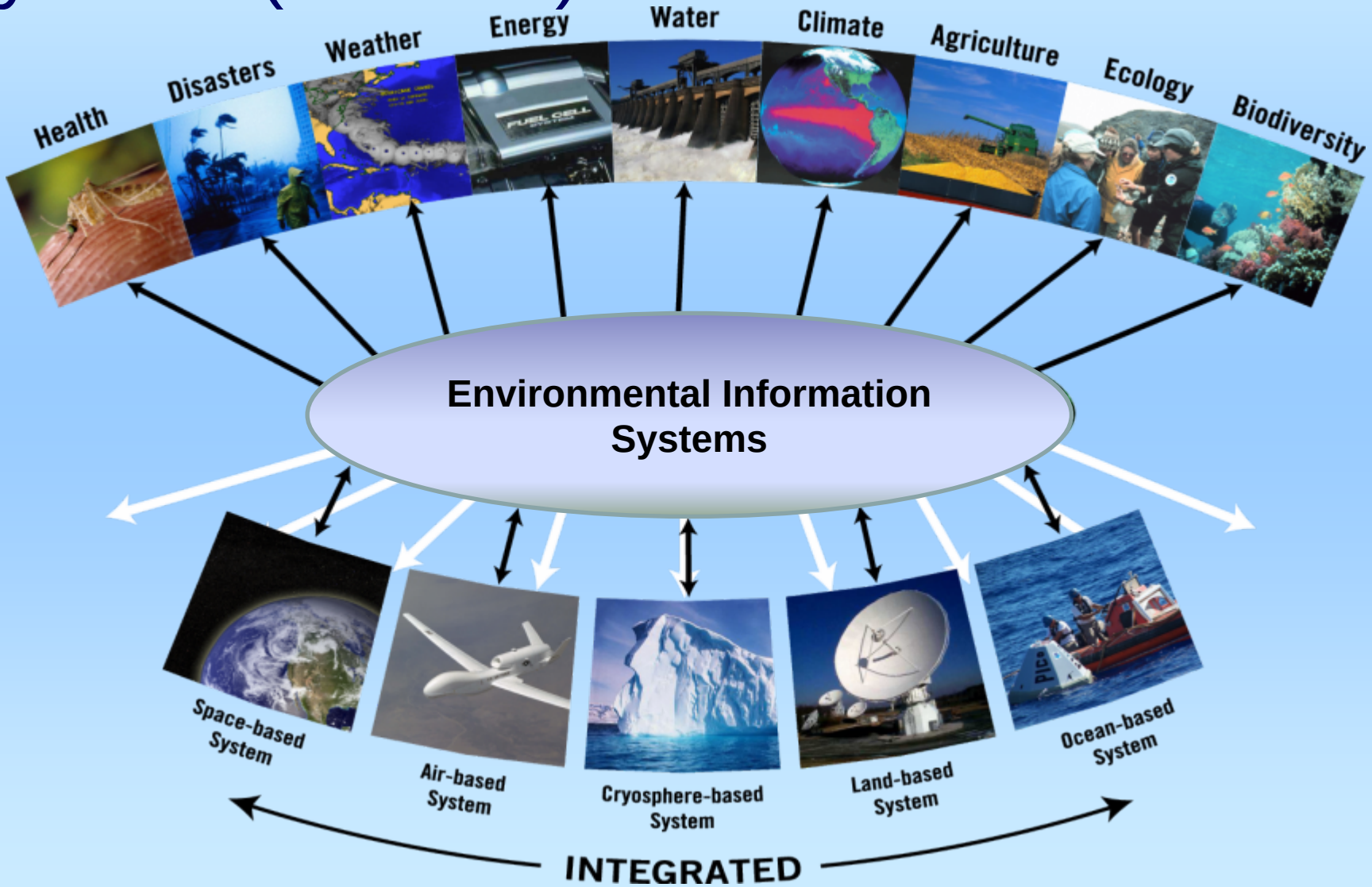
in the right format,

at the right time,

to the right people,

to make the right decisions

A Global Earth Observation System of Systems (GEOSS)



IEOS: United States Contribution to GEOSS

- The U.S. contribution to GEOSS is the Integrated Earth Observation System (IEOS).
- GEOSS and IEOS will facilitate the sharing and applied usage of global, regional and local data from Earth observing instruments.

IEOS and GEOSS
A System of Systems

U.S. IEOS

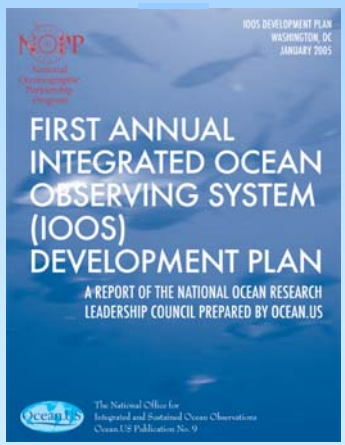
U.S. Component

GEOSS

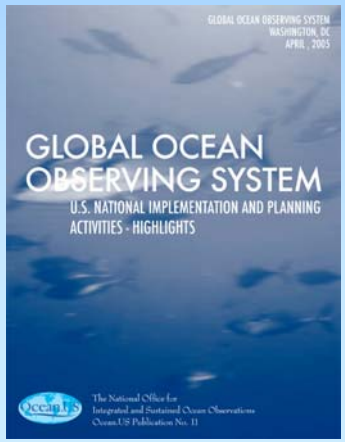
Ocean Component of U.S. IEOS

Ocean Component of GEOSS

U.S. IOOS



U.S. Component

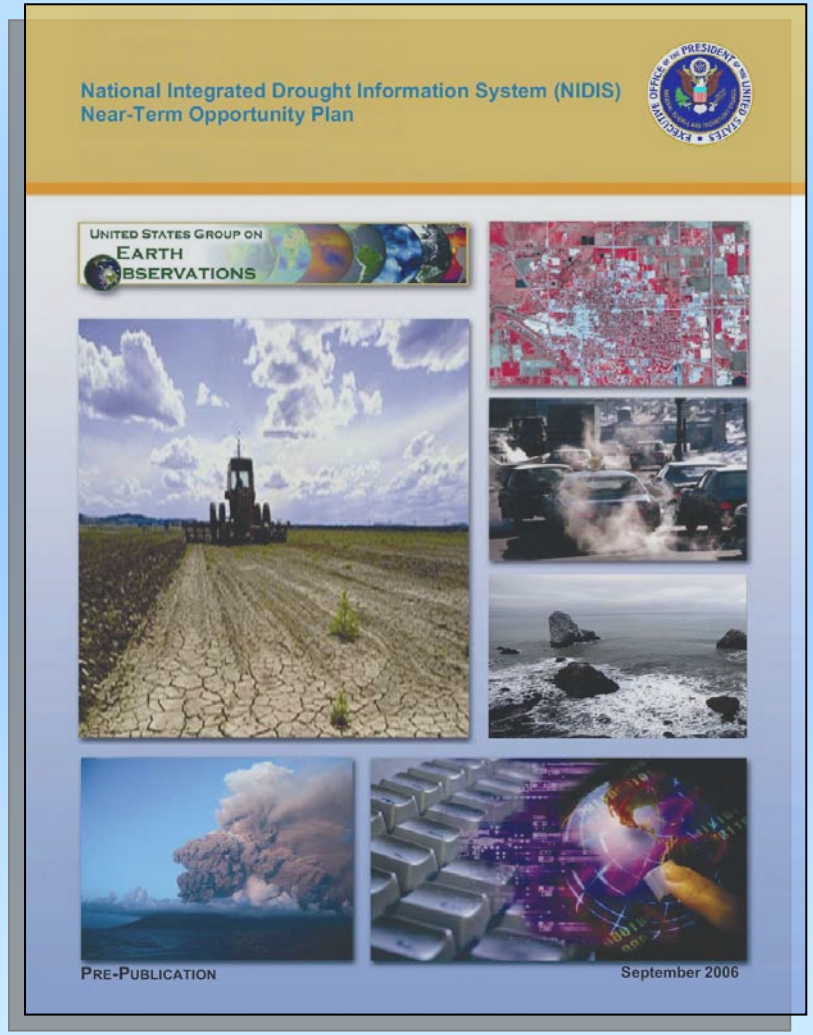


GOOS

IEOS Near Term Opportunities

Identified in IEOS Strategic Plan:

1. Improved Observations for Disaster Warnings (published September 2006);
2. Global Land Observation System (in development);
3. Sea Level Observation System (in development);
4. National Integrated Drought Information System (published September 2006); and,
5. Air Quality Assessment and Forecast System (published September 2006).



Improved Observations for Disaster Reduction: Joint USGEO/SDR Near-Term Opportunity Plan

Building on the tremendous progress that has been made in warning capabilities for meteorological hazards due to investments in network modernization and improved system integration, the IEOS *Strategic Plan* identified a Near-Term Opportunity to make similar progress in the geologic hazards, including earthquakes, volcanic eruptions, tsunamis and coastal inundation hazards, landslides and subsidence.

National Integrated Drought Information System (NIDIS)

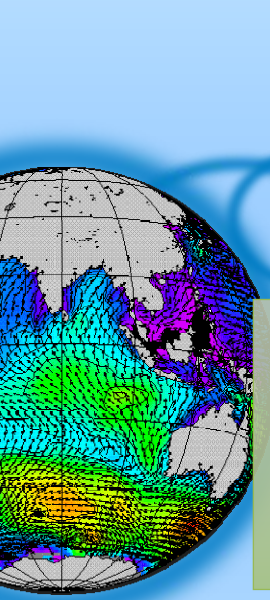
To adequately address drought disasters, in 2004 the Western Governors' Association (WGA) formed a task force and produced Creating a Drought Early Warning System for the 21st Century – The National Integrated Drought Information System (NIDIS). The NIDIS Near-Term Opportunity Plan builds on the business requirements outlined in the WGA document and focuses on critical gaps that can be quickly and effectively closed.

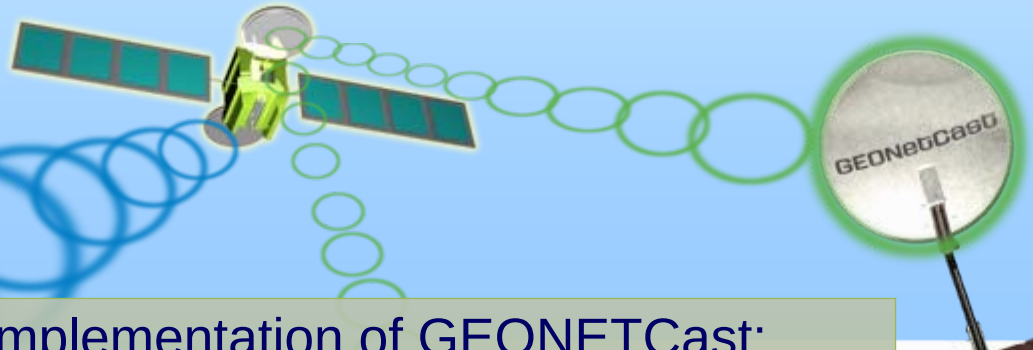
Air Quality Assessment and Forecast System

The Air Quality Assessment and Forecast System Near-Term Opportunity Plan identifies several areas where agencies can leverage existing and planned systems to develop integrated data and modeling products and services, including routine production of air quality fields that integrate information from multiple types of observing systems and from models.

GEOSS Implementation

GeoNetCast Communication & Delivery





Implementation of GEONETCast:

Open exchange of data and information

Worldwide information distribution

Fundamental GEO Concepts of GEONETCast

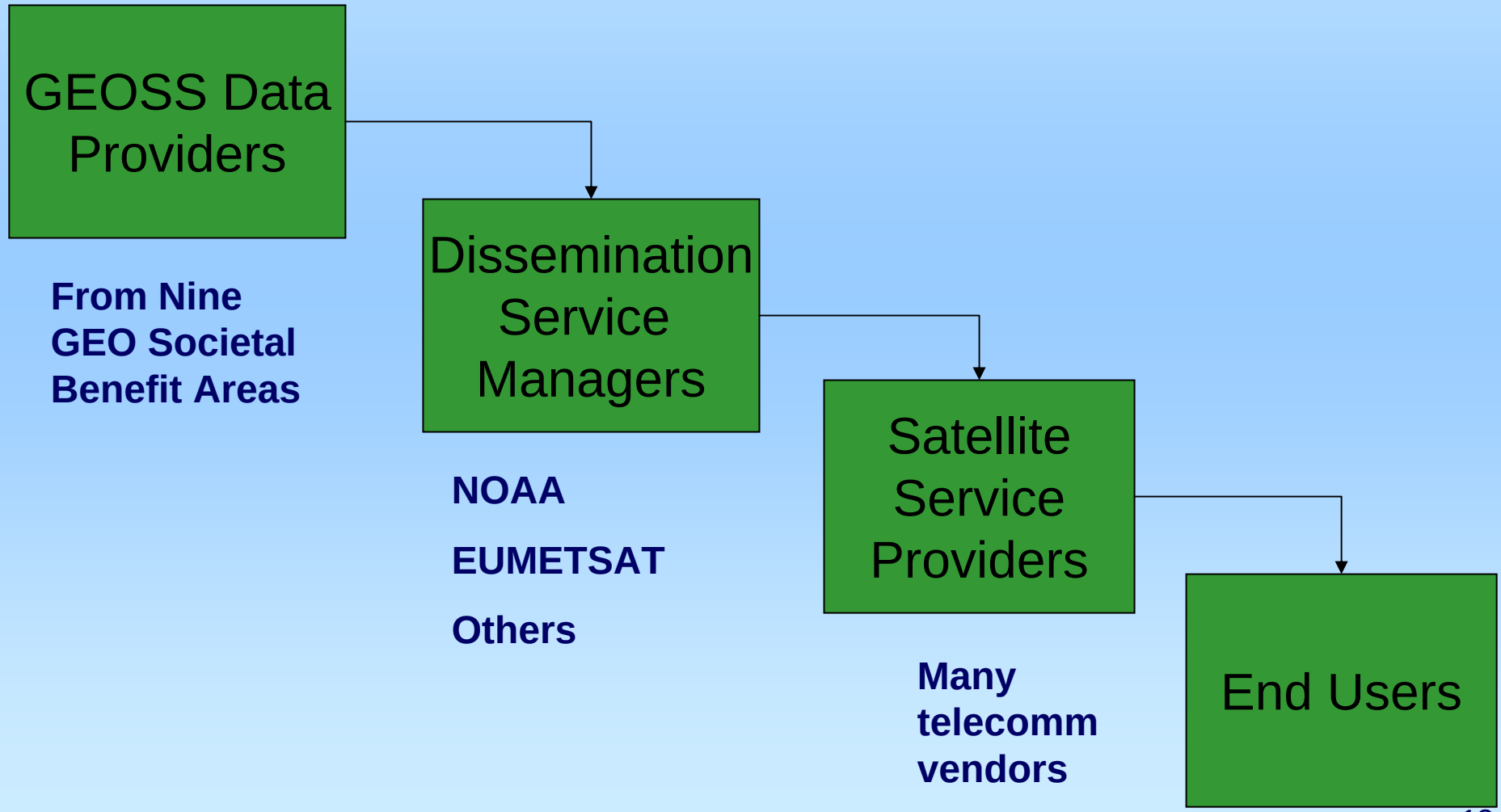
Provide a satellite-based environmental data delivery portal for users lacking reliable data access

An integrated global system of regional data dissemination systems

Utilize affordable receive stations using commercial off-the-shelf components and satellite dissemination technology

Full and open environmental data exchange supporting all 9 GEO societal benefit areas

Major GEONETCast Participants



Typical Receiver Station Configuration

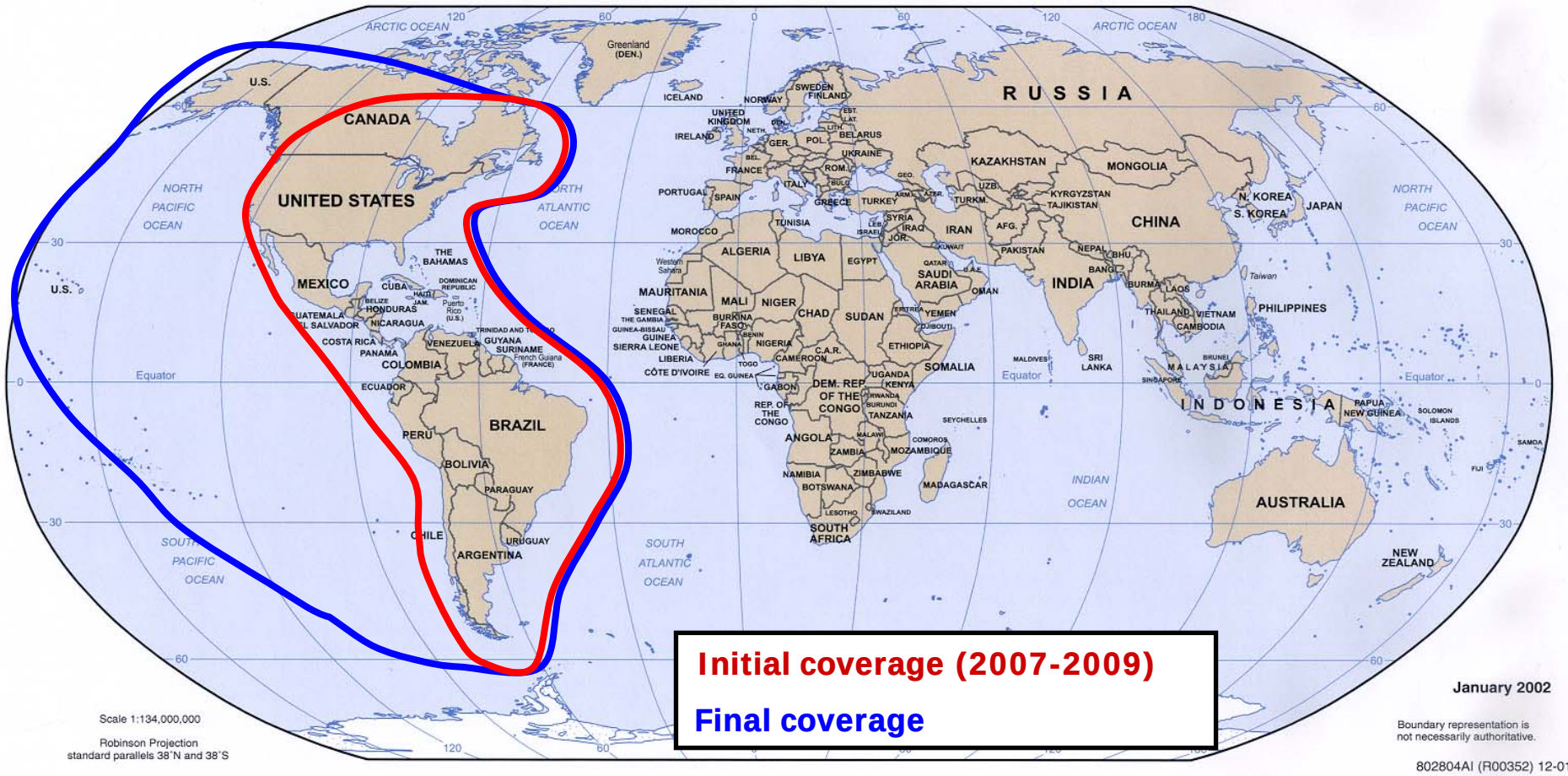
- **Dedicated personal computer (~ $1000)**
- **Satellite antenna dish (1-3 m) (~ $300-1200)**
- **DTH receiver card or box (~ $200)**

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

Products and Providers

Includes data and products from agencies involved in the U.S. Group on Earth Observations, including the Environmental Protection Agency, NASA, Department of Energy, and NOAA, among others.

GEONETCast in the Americas



GEOSS in the Americas

- Umbrella framework realizing GEOSS in the Western Hemisphere
- Opportunity to support global GEOSS
- Opportunity to draw attention to important regional initiatives (GEONETCast, SERVIR, RANET)

GEOSS in the Americas

- Kickoff Event at Brazilian Embassy, co-hosted by NOAA
- GEONETCast/Americas Workshop planned for Costa Rica – June 2007
- GEOSS Forum planned for September 2007– Brazil
- Concept to be developed in dialogue with interagency and regional partners

GEO

EOS I

- July 2003, Washington, DC
- 33 Countries
- 20 International Organizations

EOS II

- April 2004, Tokyo
- 47 Countries
- 26 International Organizations

EOS III

- February 2005, Brussels
- 58 Countries
- 43 International Organizations
- Agree on 10-Year Implementation Plan
- Establish Group on Earth Observations (GEO) to implement plan
- Commerce Secretary Gutierrez led the US delegation

EOS I

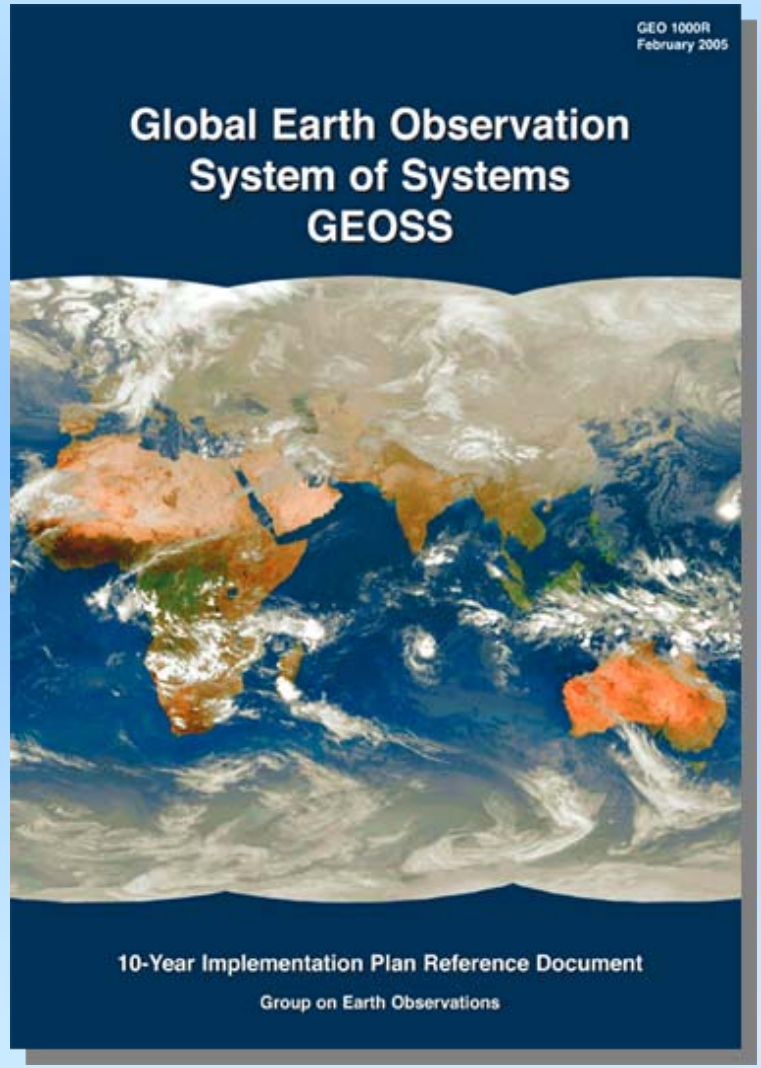
EOS II

EOS III

68 Countries and the European Commission

46 Organizations

Algeria
Argentina
Australia
Bahrain
Bangladesh
Belgium
Belize
Brazil
Cameroon
Canada
Central African Republic
Chile
China
Croatia
Cyprus
Denmark
Egypt
European Commission
Finland
France
Germany
Greece
Guinea-Bissau
Honduras
Hungary
Iceland
India
Indonesia
Iran
Ireland
Israel
Italy
Japan
Kazakhstan
Latvia
Luxembourg
Malaysia
Mali
Mauritius
Mexico
Moldova
Morocco
Nepal
Netherlands
New Zealand
Niger
Nigeria
Norway
Paraguay
Philippines
Portugal
Republic of Korea
Republic of the Congo
Russian Federation
Slovak Republic
Slovenia
South Africa
Spain
Sudan
Sweden
Switzerland
Thailand
Tunisia
Uganda
Ukraine
United Kingdom
United States
Uzbekistan



Upcoming Ministerial Meeting

GEO will hold its next Ministerial Level Meeting in Cape Town, South Africa on November 30, 2007. The U.S. is proposing the following topics for discussion at that event:

- Air Quality Assessment
- Drought Early Warning
- Disaster Reduction
- Information Dissemination
  - GEONETCast
- Global Land Characterization

NASA image of Cape Town

More Information

http://earthobservations.org

http://usgeo.gov

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