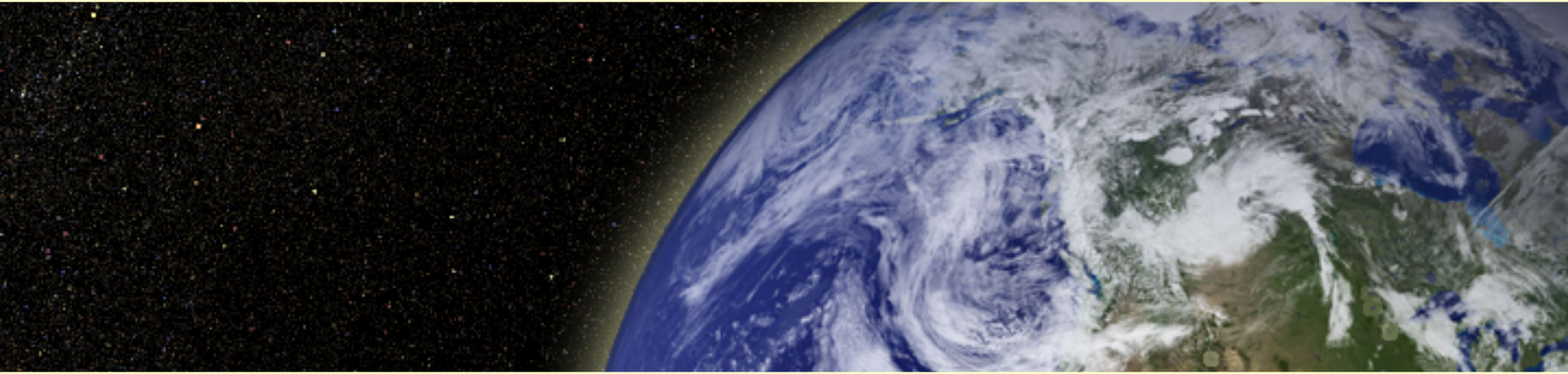


Overview of GEOSS & IEOS: *Process and Progress*



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October 2005



Presentation Outline

The Global Earth Observation System of Systems (GEOSS) Overview

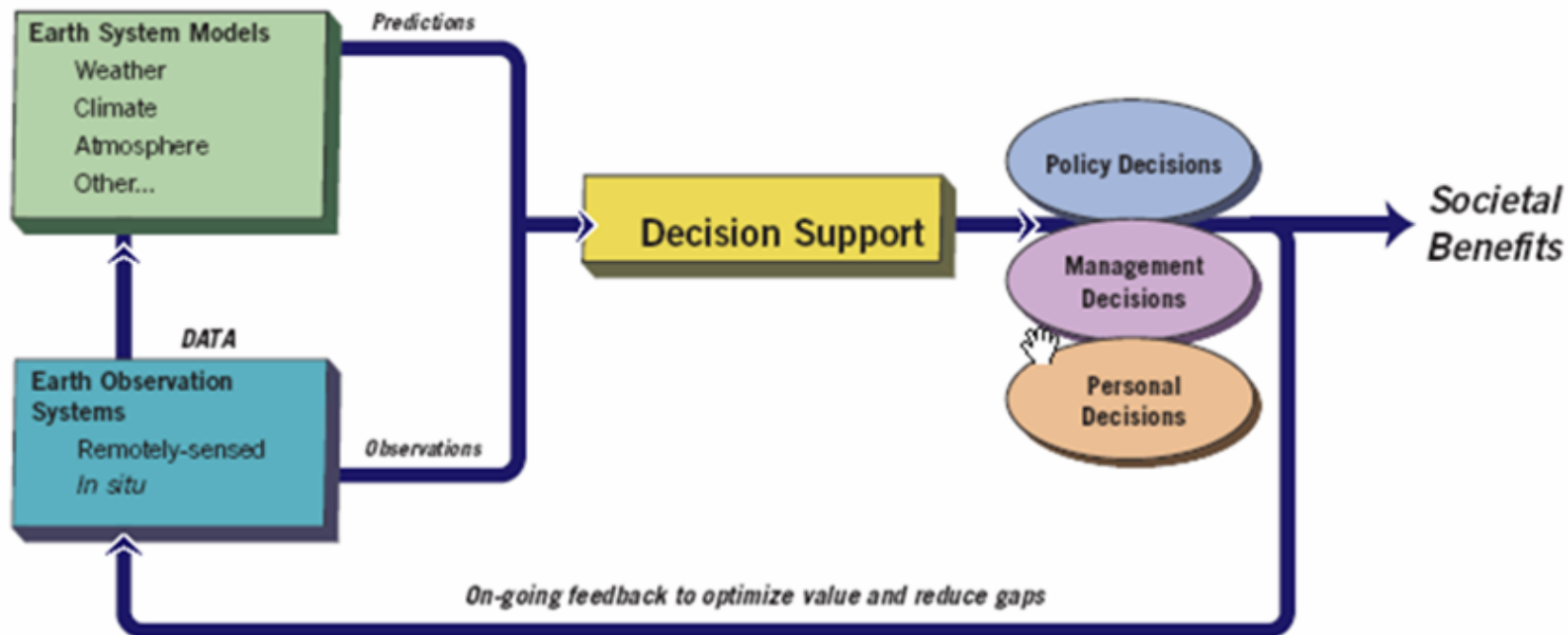
The US Role—IEOS as US Component of GEOSS

Vision for the Future—Shared Challenges





LINKING EARTH OBSERVATIONS TO SOCIETAL BENEFITS



The Global Framework

A distributed system of 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
- 🌐 Improves coordination of strategies and observation systems





GEOSS Overview

EOS I

- 🌐 July 31, 2003, Washington, D.C.
- 🌐 34 Countries + 20 International Organizations



EOS II

- 🌐 April 25, 2004, Tokyo, Japan
- 🌐 47 Countries + EC + 26 International Organizations



EOS III

February 2005, Brussels

- 🌐 58 Countries + EC and 34 International Organizations
- 🌐 10-Year Implementation Plan
- 🌐 Commerce Secretary Gutierrez led the US delegation








GEOSS Implementation Plan

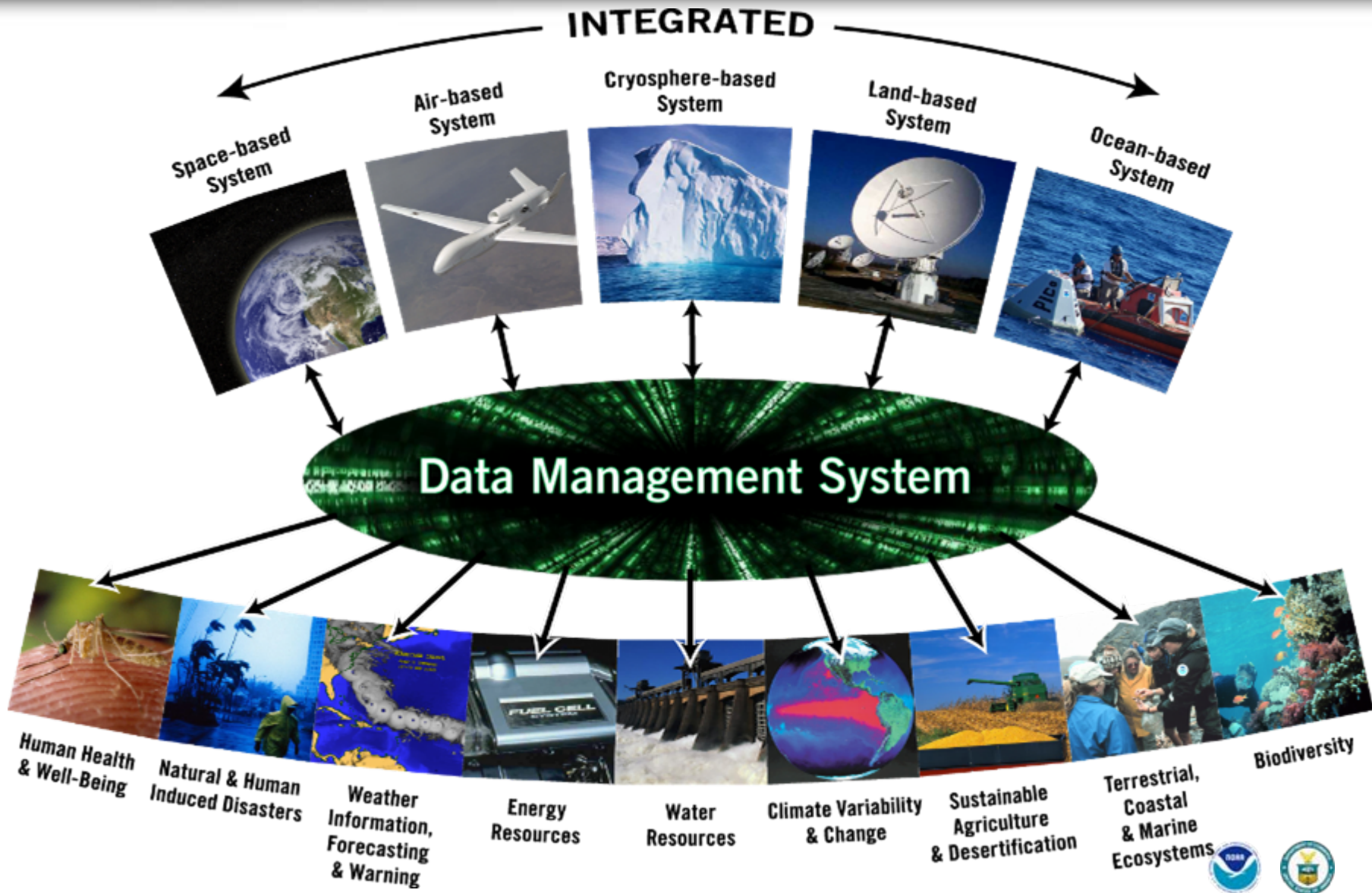
A 10-Year roadmap for creating a **Global Earth Observation System of Systems (GEOSS)** as a distributed system of systems, building step-by-step on current cooperation efforts among existing observing and processing systems within their mandates, while encouraging and accommodating new components.

The GEOSS will be:

-  ***comprehensive***, by including observations and products gathered from all components required to serve the needs of participating members;
-  ***coordinated***, in terms of leveraging resources of individual contributing members to accomplish this system, whose total capacity is greater than the sum of its parts;
-  ***sustained***, by the collective and individual will and capacity of participating members.



GEOSS: Mechanism for Integration





GEO I

Geneva, Switzerland

First meeting of new GEO at WMO headquarters on May 2-3

Iceland recognized as newest member of growing effort

GEO agreed to 12 member Executive Committee

- 🌐 Africa (2), Americas (3), Asia and Oceania (3), Commonwealth of Independent States (1), Europe (3)
- 🌐 Co-Chairs: US, EC (developed); China, South Africa (developing)

Tsunami Update – IOC





U.S. Contribution to GEOSS

An Interagency Effort

Interagency Working Group on Earth Observations Membership

Department of Commerce

- National Oceanic and Atmospheric Administration
- National Institute of Standards and Technology

Department of Defense

- Air Force
- National Geospatial-Intelligence Agency
- Navy
- U.S. Army Corps of Engineers

Department of Energy

Department of Health & Human Services

- National Institute of Environmental Health Sciences

Department of Homeland Security

- Federal Emergency Management Agency

Department of the Interior

- US Geological Survey

Department of State

Department of Transportation

Environmental Protection Agency

National Aeronautics and Space Administration

National Science Foundation

Smithsonian Institution

Tennessee Valley Authority

U.S. Agency for International Development

U.S. Department of Agriculture

- Agriculture Research Service
- U.S. Forest Service

White House Council on Environmental Quality

White House Office of Management and Budget

White House Office of Science and Technology Policy

STRATEGIC PLAN FOR THE U.S. INTEGRATED EARTH OBSERVATION SYSTEM



Interagency Working Group on Earth Observations
NSTC Committee on Environment and Natural Resources





U.S. Plan Benefits Focus



Natural & Human Induced Disasters



Water Resources



Ecosystems



Human Health & Well-Being



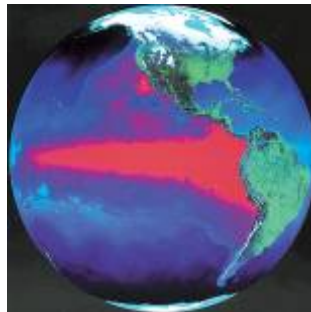
Energy Resources



Sustainable Agriculture & Desertification



Weather Information, Forecasting & Warning



Climate Variability & Change



Oceans





IEOS and GEOSS

A System of Systems

U.S. IEOS



U.S. Component



GEOSS

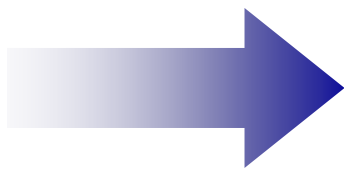
Ocean Component
of U.S. IEOS



Ocean Component
of GOOS



U.S. IOOS



GOOS

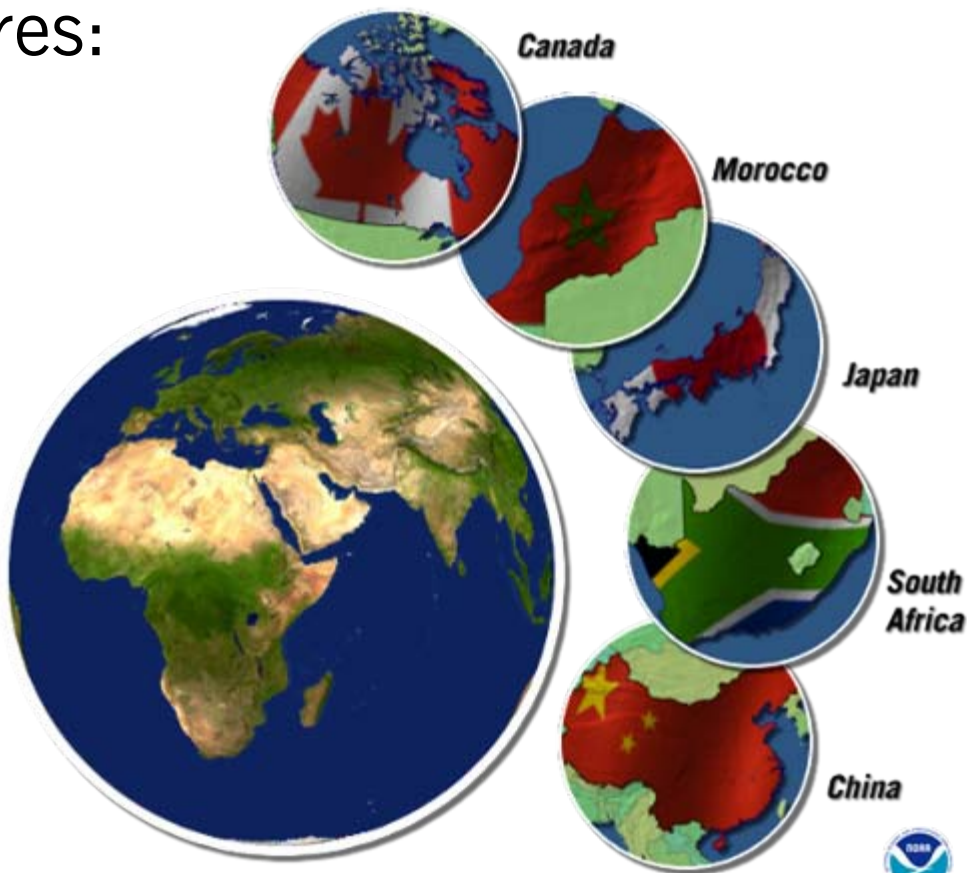
U.S. Component



Other National Earth Observation Efforts

Other countries are following the lead of the US and Europe in developing their own national integration structures:

- 🌐 Canada
- 🌐 China
- 🌐 Japan
- 🌐 Morocco
- 🌐 South Africa





Vision for the Future— Shared Challenges

Challenges at the national level amplified at the international level

- 🌐 10 Year Implementation Plan Reference Document identifies about 500 near-, mid-, and long-term goals

Opportunities for cooperation are also increased

IEOS and GEOSS mutually dependent for success



The Road Ahead for the U.S. Interagency Effort

Earth Observation Subcommittee of NSTC
Committee on Environment & Natural Resources

Develop Integration Strategies for 6 Near Term
Opportunities:

-  Data Management
-  Improved Observations for Disaster Warnings
-  Global Land Observing System
-  Sea Level Observing System
-  National Integrated Drought Information System
-  Air Quality Assessment and Forecast System



Science and Technology Advice / User Interface

Ensuring quality input from Science and Technical Community critical to GEOSS success

Maintaining robust interface with user community to ensure that priorities are properly aligned with needs



Maintaining political will by delivering on societal benefit opportunities



Common System Architecture

Supports a range of implementation options

Addresses planned, research and operational systems

Capabilities interfaced through interoperability specifications

Inclusion of metadata and quality indicators

Continuity of observations, and instigation of new observations

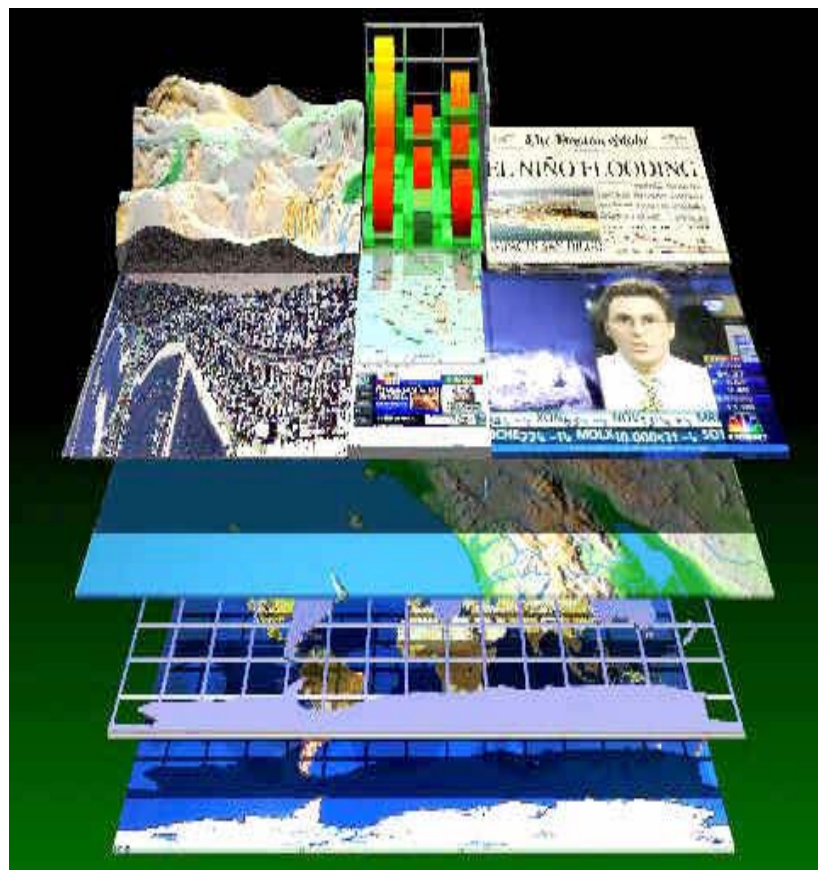
Builds on existing systems and historical data



Data Management

Data Management Needs

- 🌐 New Systems mean 100-fold increase in data
- 🌐 Current systems already face challenges
- 🌐 Development of browser and visualization systems—underpinned by core geospatial technologies
- 🌐 Interoperability through protocols and standards



Some GEOSS Implications


- 🌐 GEOSS: Global Earth Observation System of Systems
- 🌐 International agreement on backbone of critical measurements
- 🌐 Requirement for continuity of critical observations (including weather, climate, disasters, etc.)
- 🌐 Improved systems coordination
- 🌐 Smoother transition from research to operations





A final thought...

“GEOSS can only succeed if the U.S. effectively implements IEOS.”

 *IEOS/GEOSS Implementation Issues, A Study Developed by the Atmospheric Policy Program, American Meteorological Society, p. 41. 2004.*

The success of both the international and national plans depends upon a healthy discourse between all providers and users, both in the public and private sectors.



More information...

Intergovernmental Group on Earth Observations

 <http://earthobservation.org>

U.S. Group on Earth Observations Subcommittee

 <http://iwgeo.ssc.nasa.gov>

NOAA Observing System Council

 <http://www.nosc.noaa.gov>

