

# **GEOSS Overview and Connections with IGOS-P, CEOP and IGWCO**

**Toshio Koike  
University of Tokyo**

# International Coordination of Earth Observation

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**Johannesburg, August - September 2002**
- **The G-8 Summit**  
**Evian, June 2003**
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  - 1<sup>st</sup> Washington DC, June 2003**
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# Plan of Implementation (WSSD)

## Paragraph 135

Promote the development and wider use of earth observation technologies, including satellite remote sensing, global mapping and geographic information systems to collect quality data on environmental impacts, land use and land-use changes, including through actions at all levels to

- (a) Strengthen cooperation and coordination among global observing systems and research programmes for integrated global observations, taking into account the need for building capacity and sharing of data from ground-based observations, satellite remote sensing and other sources among all countries;
- (b) Develop information systems that make the sharing of valuable data possible, including the active exchange of Earth observation data.





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Improve water resource management and scientific understanding of the water cycle through cooperation in joint observation and research, and encourage and promote knowledge sharing, and provide capacity-building and the transfer of technology, as mutually agreed, including remote-sensing and satellite technologies, particularly to developing countries as well as countries with economies in transition, for this purpose.





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# 2003 G8 Summit in Evian

## Science & Technology Action Plan

We recognize the need, as acknowledged in the World Summit on Sustainable Development (WSSD) Plan of Implementation, to support the development of cleaner, sustainable and more efficient technologies. Co-operative scientific research on transformational technologies offers potential to improve public health by cutting pollution and reduce greenhouse emissions to address the challenge of global climate change. Our countries must optimize the use of natural resources including through recycling.

We will focus our efforts on three areas that present great opportunities for progress: co-ordination of global observation strategies; cleaner, sustainable and more efficient energy use; agricultural sustainability, productivity and biodiversity conservation.

In undertaking these activities, we are committed to working co-operatively with other developed countries. We are conscious that, to meet the objectives of the WSSD, developing countries and countries with economies in transition need to build and strengthen their capacity to assimilate and generate knowledge for sustainable development. We reaffirm our commitment made at the WSSD to assist them through international co-operation in enhancing their research capacities.

**GROUP ON  
EARTH  
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Strengthen international co-operation on global observation

We will:

- 1.1 Develop close co-ordination of our respective global observation strategies for the next ten years; identify new observations to minimize data gaps;
- 1.2 Build on existing work to produce reliable data products on atmosphere, land, fresh water, oceans and ecosystems;
- 1.3 Improve the world-wide reporting and archiving of these data and fill observational gaps of coverage in existing systems;
- 1.4 Favor interoperability with reciprocal data-sharing;
- 1.5 Develop an implementation plan to achieve these objectives by next spring's Tokyo ministerial conference.



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Washington DC, July 31, 2003



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Washington DC, July 31, 2003

- Recalling the **WSSD** in Johannesburg and the **G-8 Summit** in Evian
- Affirmed need for timely, quality, long-term, global information as a basis for sound decision making.
- **Recognized need to support:**
  - Comprehensive, coordinated, sustained Earth observation system or systems;
  - Coordinated effort to address capacity-building needs related to Earth observation;
  - Exchange of observations in a full and open manner with minimum time delay and minimum cost; and
  - Preparation of a 10-year Implementation Plan, building on existing systems and initiatives
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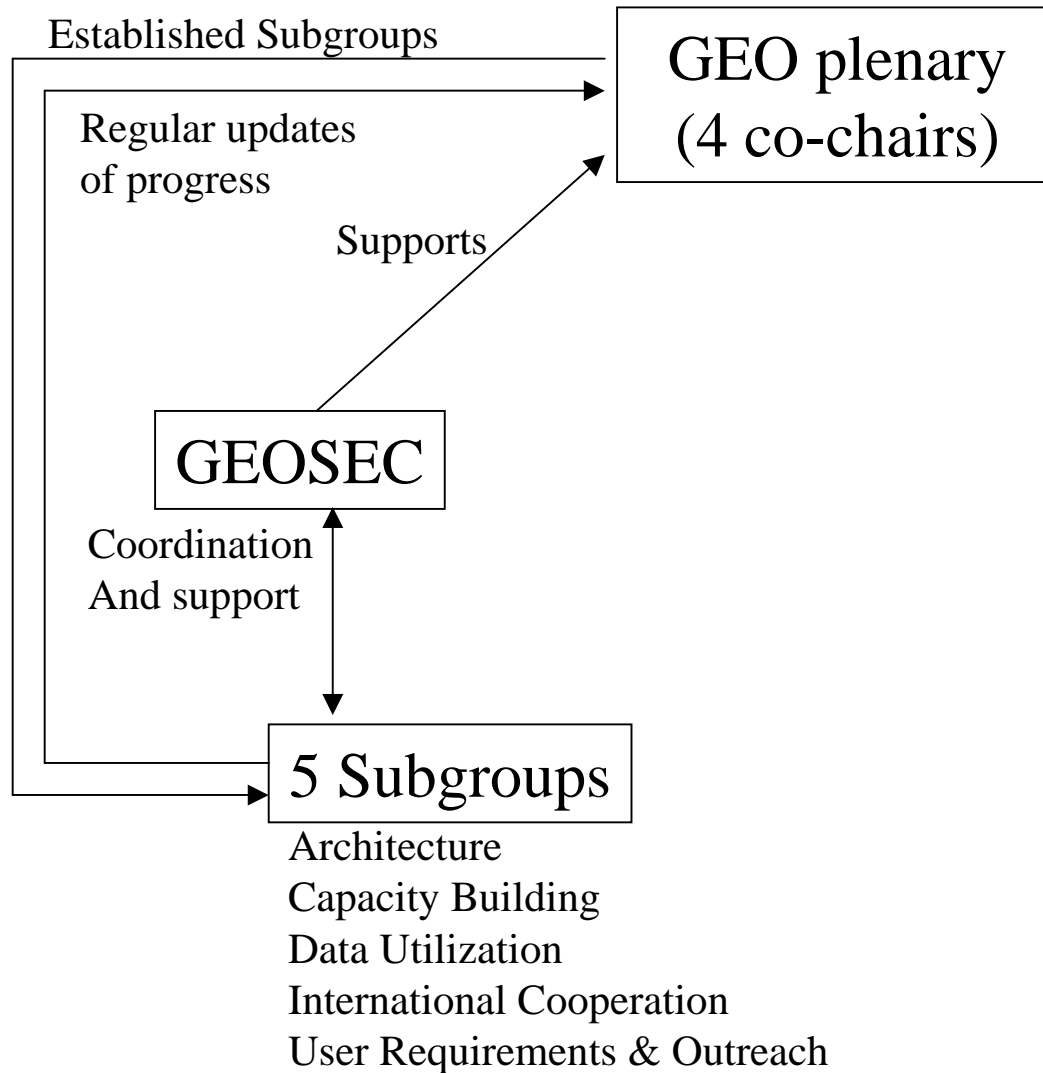
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# GEO Structure



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Tokyo, April 25, 2004



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- **Framework Document**
  - 1) Nine specific areas of socio-economic benefit; Disasters, Health, Energy, Climate, Water, Weather, Ecosystems, Agriculture and Desertification, Biodiversity
  - 2) A 10-Year Implementation Plan for establishing the Global Earth Observation System of Systems (GEOSS);
- **Communiqué**
  - 1) Adoption of the Framework Document
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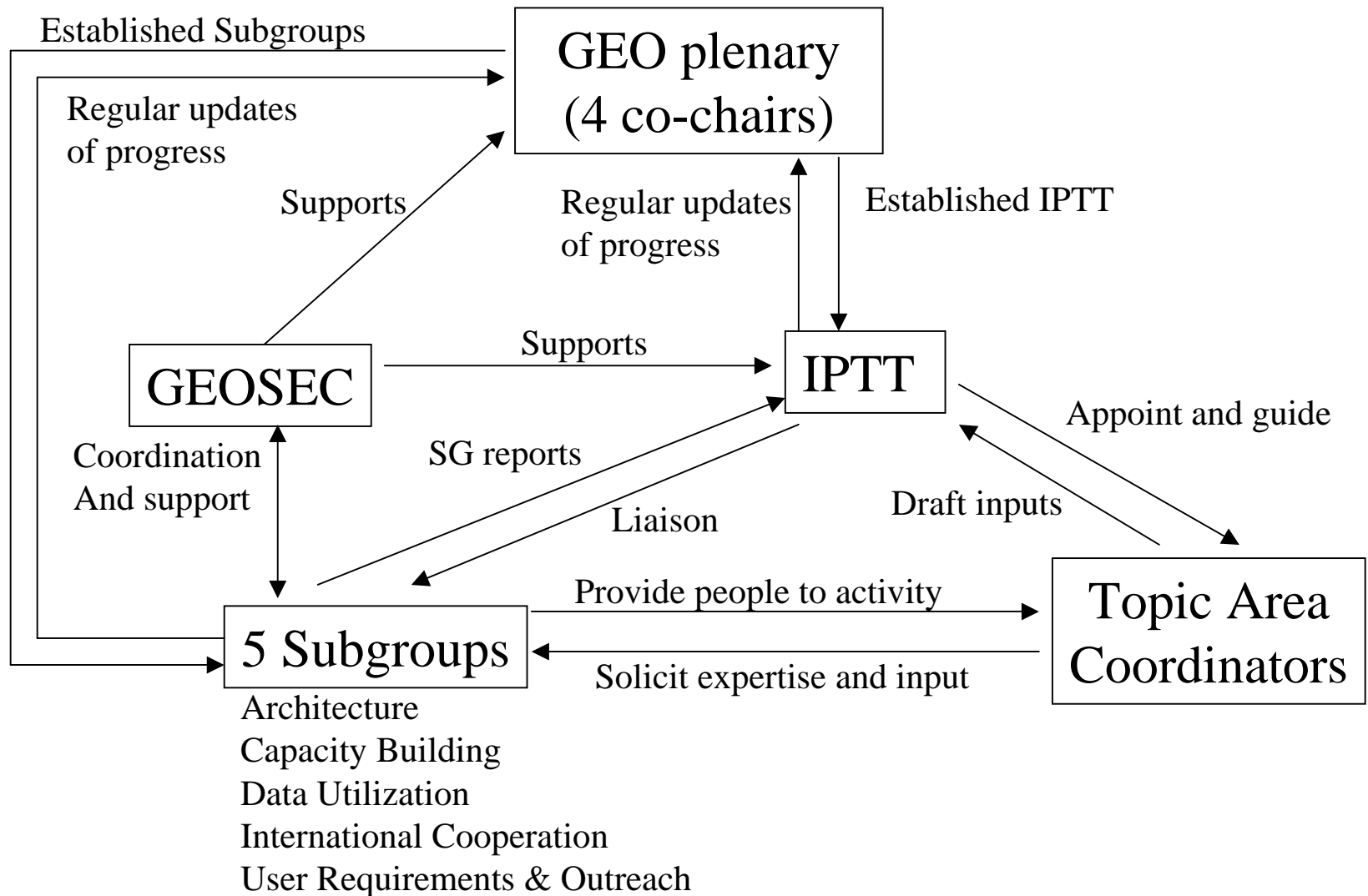
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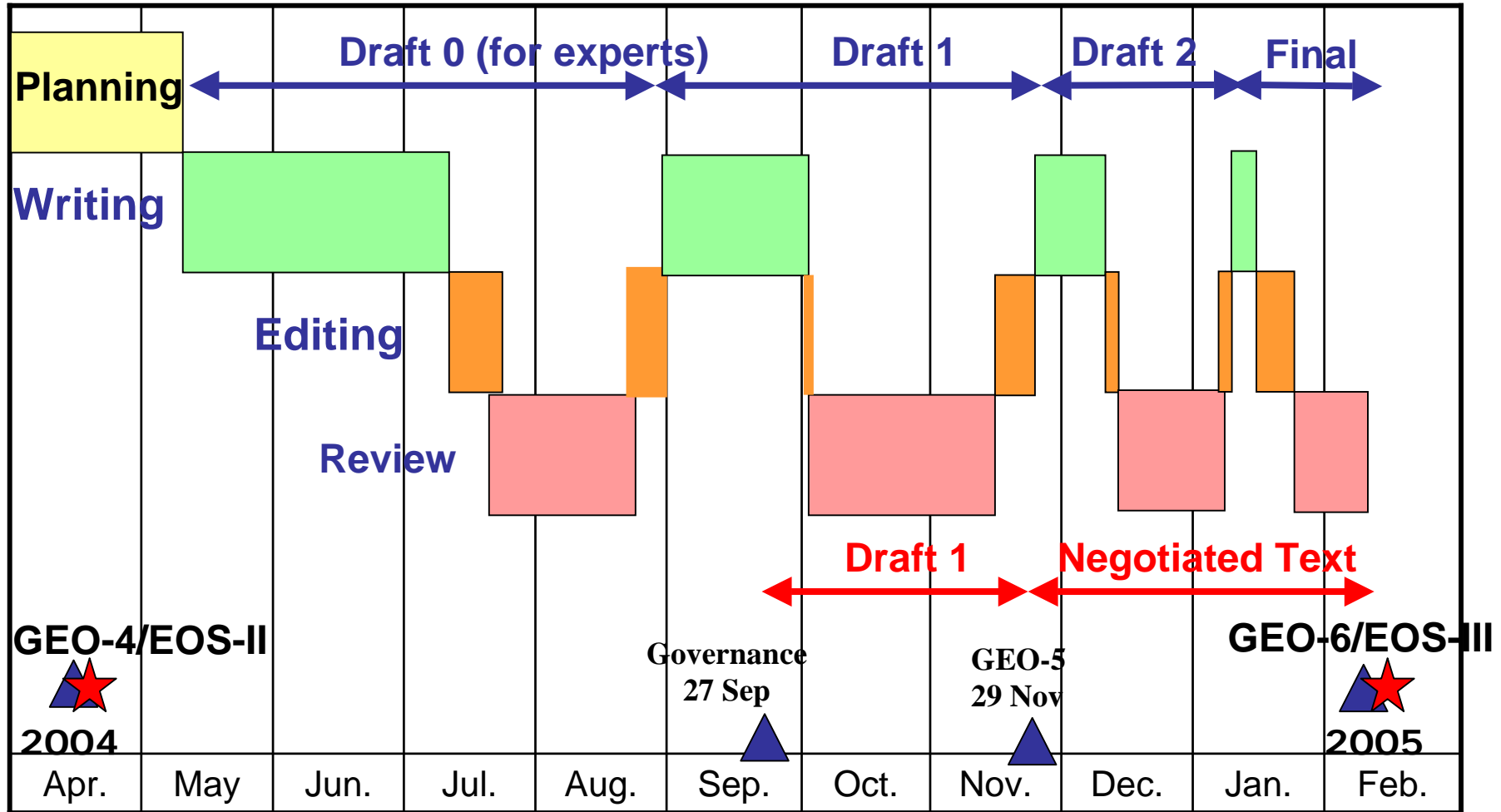
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# Drafting Schedule of

## the 10 Year Implementation Plan and the Reference Document



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- **Resolution of the 3<sup>rd</sup> Earth Observation Summit**

- 1) Endorse the 10-Year Implementation Plan as the basis for its further development and for establishing a Global Earth Observation System of Systems (GEOSS) to fulfill user requirements among various socio-economic benefit areas;
- 2) Note with appreciation the extensive supporting information compiled in the GEOSS 10-Year Implementation Plan Reference Document prepared by the *ad hoc* GEO;
- 3) Establish the intergovernmental Group on Earth Observations (GEO), to take those steps necessary to implement GEOSS in accordance with its implementation plan;

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# GEOSS Draft 10-year Implementation Plan

Benefit Outcomes Summary
Implementation Approach Summary
Governance Provisions

# Reference Document

Benefit Outcome Details with 2-, 6-, 10-year Targets
Implementation Approach with 2-, 6-, 10-year Targets

*Prepared by IPTT & Negotiated at GEP-5:*

# 10-Year Implementation Plan

## Preamble

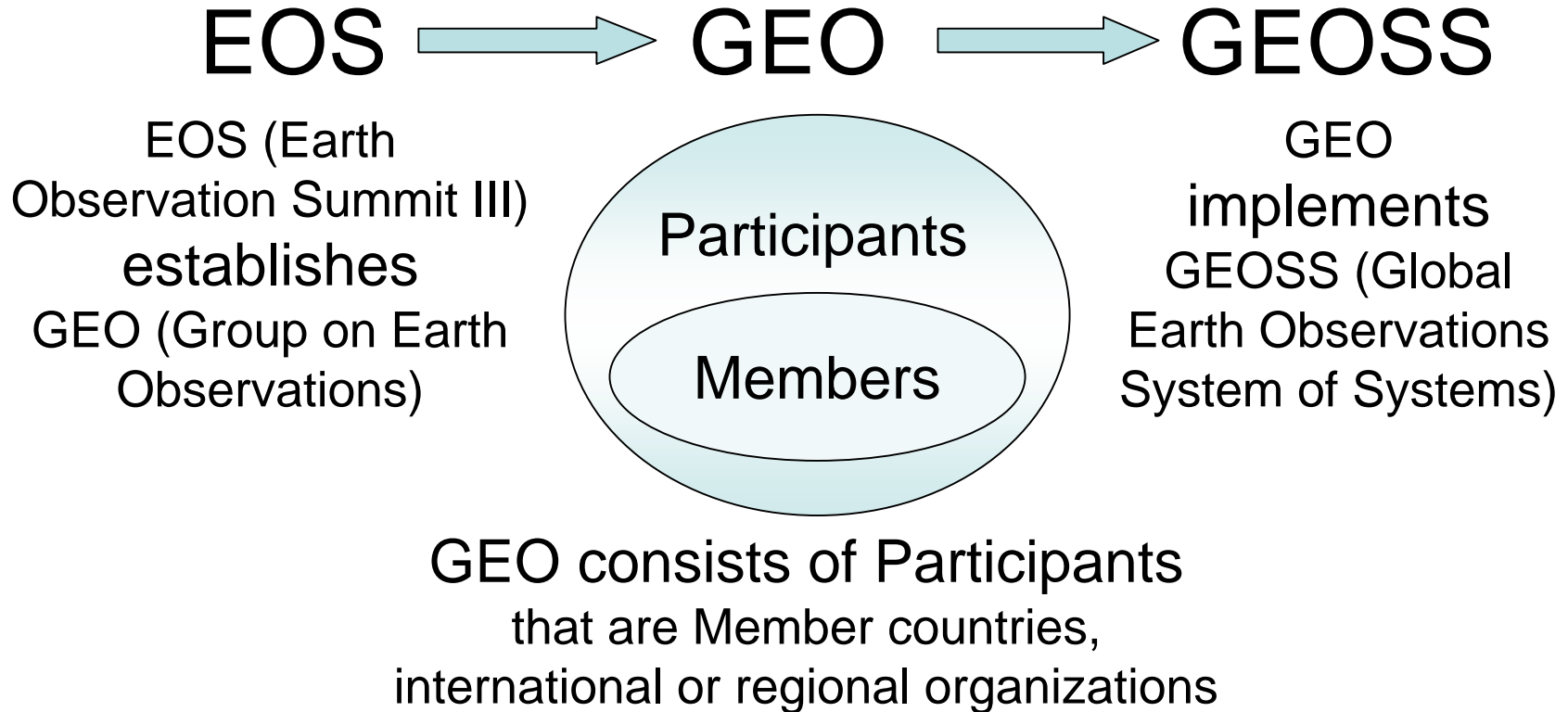
- Purpose of this Plan
- Vision for GEOSS
- Purpose and Scope of GEOSS, and the Group on Earth Observations
- Benefits of GEOSS
- Technical Approach, Capacity Building, and Outreach
- Governance
- Funding and Measuring Progress
- The Transition Period

# 10-Year Implementation Plan

## Vision for GEOSS

The vision for GEOSS is to realize a future wherein **decisions and actions for the benefit of humankind are informed by coordinated, comprehensive and sustained Earth observations and information.**

# 10-Year Implementation Plan





# 10-Year Implementation Plan

## Technical Approach, Capacity Building, and Outreach

**GEOSS functional components**

**Observations and Modeling**

**Products, Data Management, and Radio Frequency Protection**

**Architecture and Interoperability**

**Data Sharing**

**Research Facilitation**

**Capacity Building**

**Outreach Plan**

# 10-Year Implementation Plan

## Technical Approach, Capacity Building, and Outreach

### GEOSS functional components

To address identified common **user requirements**

To acquire observational **data**

To process **data into useful products**

To **exchange, disseminate, and archive** shared data, metadata, and products

To **monitor performance** against the defined requirements and intended benefits

**Observations and Modeling**

**Products, Data Management, and Radio Frequency Protection**

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# 10-Year Implementation Plan

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**GEOSS functional components**

**Observations and Modeling**

**Products, Data Management, and Radio Frequency Protection**

**Architecture and Interoperability**

**Data Sharing**

**Research Facilitation**

*In situ, airborne, and space-based observation on a long-term basis;*

*Life-cycle data management, data integration and information fusion, data mining, network enhancement, and design optimization studies;*

*Models, data assimilation modules, and other algorithms*

**Capacity Building**

**Outreach Plan**

# 10-Year Implementation Plan

## Governance

- GEO, comprising the Members and Participating Organizations, is established on a voluntary and legally non-binding basis, with voluntary contributions to support activities.
- GEO will meet in plenary at least annually at the senior-official level, and periodically at the Ministerial level.
- GEO will take decisions by consensus of its Members. Decisions on implementation of the Plan will be based upon sound scientific and technical advice obtained through appropriate consultation with the research and observation communities. To support its work, the GEO plenary will establish:
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