

COMMISSION FOR BASIC SYSTEMS

(3.X.2003)

CBS MANAGEMENT GROUP
Fourth session

ITEM: 2

Langen, 13-16 October 2003

ENGLISH only

**ISSUES RELEVANT TO CBS ARISING FROM FOURTEENTH CONGRESS,
THE FIFTY-FIFTH SESSION OF THE EXECUTIVE COUNCIL, AND THE 2003 MEETING OF
THE PRESIDENTS OF TECHNICAL COMMISSIONS**

Earth Observation Summit

(Submitted by the Secretariat)

Summary and purpose of document

This document provides information on the outcomes of the Earth Observation Summit convened by the United States of America in Washington DC, on 31 July 2003. The MG is invited to consider this information in the light of the on-going activities of the CBS related to the redesign of the GOS and to decide on ways and means to coordinate the CBS work in this area with the activities that are being initiated under the auspices of the Earth Observation Summit.

ANNEXES:

1. Earth Observation Summit Declaration
2. TOR of the *ad hoc* Group on Earth Observation (GEO)
3. TOR of Subgroup on Architecture
4. TOR of the Subgroup on Data Utilization
5. TOR of the Subgroup on Data Utilization
6. TOR the Subgroup on Capacity Building
7. TOR of the Subgroup on International Cooperation

DISCUSSION

1. On 31 July 2003, the USA Government held the Earth Observation Summit in Washington DC, which was attended by several dozen countries and international and intergovernmental organizations. US Secretary of State, C. Powell, opened the meeting. WMO was represented by the Secretary-General and the Deputy Secretary-General. GCOS and WCRP were represented by their Programme Directors.
2. The purpose of the Summit was to call on countries to work towards building a comprehensive, coordinated and sustained Earth observation system, and in particular to
 - a. exchange observations recorded from in situ, aircraft and satellite networks in a full and open manner with minimum time delay and minimum cost;
 - b. agree on the concept of such a system or systems that will meet collective requirements, minimize data gaps and maximize the utility of the systems;
 - c. establish an international ad hoc working group to prepare draft objectives and a 10-year implementation plan for such a system;
 - d. help improve observing systems in developing countries and advance the capacity building of local scientific expertise.
3. The Summit adopted a Declaration, which is given in Annex 1.
4. The Summit established an *ad hoc* Group on Earth Observations (GEO) and a GEO Secretariat. The TOR of the ad hoc Group are given in Annex 2. The Summit also established the following five GEO Sub-groups:
 - a. Subgroup on Architecture (TOR are given in Annex 3)
 - b. Subgroup on Data Utilization (TOR are given in Annex 4)
 - c. Subgroup on User Requirements and Outreach (TOR are given in Annex 5)
 - d. Subgroup on Capacity Building (TOR are given in Annex 6)
 - e. Subgroup on International Cooperation (TOR are given in Annex 7).
5. At the time of the drafting of this document, the definition of the membership of the GEO Subgroups was not yet complete. It is important to note that WMO is a member in all subgroups as well as in GEO and the GEO Secretariat. Dr James Rassmussen is serving as the WMO liaison to the GEO Secretariat, which is hosted in Washington, DC by the USA.
6. The Declaration and the TOR of GEO and its subgroups show that the envisaged goals, activities, outcomes, etc., are most relevant and closely related to the activities carried out by CBS within all OPAGs, including the on-going redesign of the GOS. The MG is invited to consider the need as well as ways and means to coordinate the relevant CBS work in this area with the activities that are being initiated under the auspices of the Earth Observation Summit, including the desirable activities all OPAGs should undertake in this respect in the time period prior to CBS-XIII (4th quarter 2004).

DECLARATION OF THE EARTH OBSERVATION SUMMIT

We, the participants in this Earth Observation Summit held in Washington, DC, on July 31, 2003: Recalling the World Summit on Sustainable Development held in Johannesburg that called for strengthened cooperation and coordination among global observing systems and research programmes for integrated global observations;

Recalling also the outcome of the G-8 Summit held in Evian that called for strengthened international cooperation on global observation of the environment;

Noting the vital importance of the mission of organizations engaged in Earth observation activities and their contribution to national, regional and global needs;

Affirm the need for timely, quality, long-term, global information as a basis for sound decision making. In order to monitor continuously the state of the Earth, to increase understanding of dynamic Earth processes, to enhance prediction of the Earth system, and to further implement our environmental treaty obligations, we recognize the need to support:

- (1) Improved coordination of strategies and systems for observations of the Earth and identification of measures to minimize data gaps, with a view to moving toward a comprehensive, coordinated, and sustained Earth observation system or systems;
- (2) A coordinated effort to involve and assist developing countries in improving and sustaining their contributions to observing systems, as well as their access to and effective utilization of observations, data and products, and the related technologies by addressing capacity-building needs related to Earth observations;
- (3) The exchange of observations recorded from *in situ*, aircraft, and satellite networks, dedicated to the purposes of this Declaration, in a full and open manner with minimum time delay and minimum cost, recognizing relevant international instruments and national policies and legislation; and
- (4) Preparation of a 10-year Implementation Plan, building on existing systems and initiatives, with the Framework being available by the Tokyo ministerial conference on Earth observations to be held during the second quarter of 2004, and the Plan being available by the ministerial conference to be hosted by the European Union during the fourth quarter of 2004.

To effect these objectives, we establish an *ad hoc* Group on Earth Observations and commission the group to proceed, taking into account the existing activities aimed at developing a global observing strategy in addressing the above. We invite other governments to join us in this initiative. We also invite the governing bodies of international and regional organizations sponsoring existing Earth observing systems to endorse and support our action, and to facilitate participation of their experts in implementing this Declaration.

(Adopted 31 July 2003)

Earth Observation Summit
Ad hoc Group on Earth Observations (GEO)
Terms of Reference

Recalling the Earth Observation Summit Declaration of 31 July 2003, the participating governmental entities (collectively referred to as the "Members") set forth the following, legally non-binding Terms of Reference for the *ad hoc* Group on Earth Observations (GEO).

1. Purpose and Functions of the GEO

The GEO will seek in its work to:

- 1.1 improve coordination of strategies and systems for observations of the Earth and identify measures to minimize data gaps, with a view to moving toward a comprehensive, coordinated, and sustained Earth observation system or systems;
- 1.2 coordinate an effort to involve and assist developing countries in improving and sustaining their contributions to observing systems, as well as their access to and effective utilization of observations, data and products, and the related technologies by addressing capacity-building needs related to Earth observations;
- 1.3 exchange observations recorded from in situ, aircraft, and satellite networks, dedicated to the purposes of this Declaration, in a full and open manner with minimum time delay and minimum cost, recognizing relevant international instruments and national policies and legislation;
- 1.4 prepare a 10-year Implementation Plan, taking into account existing activities and building on existing systems and initiatives, with the Framework being available by the Tokyo ministerial conference on Earth observations to be held during the second quarter of 2004, and the Plan being available by the ministerial conference to be hosted by the European Union during the fourth quarter of 2004;
- 1.5 define a process to periodically evaluate and revise the 10-year Implementation Plan; and
- 1.6 conduct such other activities, consistent with the Declaration, as the Members may deem necessary.

2. Organization of the GEO

- 2.1 The GEO welcomes and is open to all interested governments and the European Commission. Each Member will name one representative and one alternate. Each Member will determine the terms of its participation in the activities of the GEO. The list of current Members is contained in Annex I to these Terms of Reference, and will be updated at each meeting.
- 2.2 The GEO may also invite the participation of organizations, international bodies, and individual experts. The list of current participants is contained in Annex II to these Terms of Reference, and will be updated at each meeting.
- 2.3 The GEO will meet at such times and places as determined by its Members.

- 2.4 At its inaugural meeting, the GEO will elect four co-chairs from among its Members, at least one of which will be from a developing country Member, to serve until 31 December 2004.
- 2.5 The GEO will work by consensus of its Members.
- 2.6 The GEO may establish subgroups, as appropriate.
- 2.7 Administrative Secretariat support to the GEO will be provided by the United States, working with staff designated and supported by other Members and participants, as deemed necessary and appropriate by the co-chairs.

3. Funding

Unless otherwise agreed, any costs arising from activities under these Terms of Reference will be borne by the Member or participant that incurs them, and will be subject to the availability of funds, personnel, and other resources.

4. Duration

- 4.1 All activities under these Terms of Reference will commence upon adoption and will continue until 31 December 2004, unless extended or terminated.
- 4.2 The terms of this document may be modified at any time by written agreement of the Members.

Argentina - Australia - Belize - Brazil - Canada - China - Denmark - Egypt - European Commission - France - Gabon - Germany - India - Ireland - Israel - Italy - Japan - Kazakhstan - Mexico - Morocco - Netherlands - New Zealand - Norway - Republic of Congo - Republic of Korea - Russian Federation - South Africa - Spain - Sweden - Switzerland - Thailand - Ukraine - United Kingdom - United States
Central American Commission for the Environment and Development (SICA/CCAD)
Committee on Earth Observation Satellites (CEOS)
European Centre for Medium-Range Weather Forecasting (ECMWF)
European Space Agency (ESA)
European Organization for the Exploitation of Meteorological Satellites (EUMETSAT)
Global Climate Observing System (GCOS)
Global Ocean Observing System (GOOS)
Global Terrestrial Observing System (GTOS)
Integrated Global Observing Strategy Partnership (IGOS-P)
Intergovernmental Oceanographic Commission (IOC)
International Agency for the Development of Environmental Information (ADIE)
International Council for Science (ICSU)
International Geosphere-Biosphere Program (IGBP)
International Group of Funding Agencies for Global Change Research (IGFA)
Food and Agriculture Organization of the United Nations (FAO)
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United Nations Environment Programme (UNEP)
United Nations Framework Convention on Climate Change (UNFCCC)
World Bank (IBRD)
World Climate Research Programme (WCRP)
World Meteorological Organization (WMO)

**Ad hoc Group on Earth Observations (GEO)
Subgroup on Architecture**

DRAFT TERMS OF REFERENCE AS OF 29 SEP 2003

Recalling the GEO Terms of Reference adopted on 1 August 2003 at GEO-1, the GEO establishes a Subgroup on Architecture and sets forth the following legally non-binding Terms of Reference:

1. Purpose

The Subgroup on Architecture will seek to develop for the 10-year implementation plan an architecture concept and its development strategy for a comprehensive, coordinated, and sustained Earth observation system or systems, including *in situ*, airborne, and space-borne observations, taking into account existing activities, and building on existing systems and initiatives.

2. Objectives

Define the purpose, structure, scope, boundaries, and development strategy for the architecture of a comprehensive, coordinated, and sustained Earth observation system or systems.

3. Approach and Functions

3.1. Develop and provide a concrete, structured, end-to-end approach to addressing the architecture development strategy:

- a. Identify architecture desired outcomes (e.g. flexibility, adaptability, modularity);
- b. Identify architecture functional requirements that are free of assumed implementation approaches;
- c. Assess current international Earth observation system capabilities; evaluate their strengths and shortfalls (gap analysis).

3.2. Consider concepts for the technical operation of the system or systems, including such features as data capture/collection, processing, dissemination, storage/archiving, exchange, products/services, and telecommunications, working with other GEO Subgroups and taking into account such matters as:

- a. Cost and technical feasibility of the conceptual alternatives;
- b. Capability of each concept to meet required functions.

3.3. Consider a set of alternative architecture solutions, taking into account such matters as:

- a. Strengths and weaknesses of alternatives considered;
- b. Desired outcomes and required functions.

3.4. Recommend for the 10-year implementation plan an architecture concept and its development strategy for a comprehensive, coordinated, and sustained Earth observation system or systems.

4. Subgroup Organization and Reporting

4.1. The Subgroup welcomes and is open to all interested GEO Members and participant organizations. The GEO Secretariat will maintain the list of current Subgroup Members and participants.

- 4.2. Representatives of Members and participant organizations may chair or co-chair this Subgroup. Subgroup chairs or co-chairs will be nominated to, and approved by, the GEO; additional co-chairs may be designated by consensus of Subgroup Members.
- 4.3. Additional technical experts may participate in Subgroup deliberations at the invitation of a GEO Member or participant organization.
- 4.4. The Subgroup will meet at such times and places as determined by its Members.
- 4.5. The Subgroup will work by consensus of its Members.
- 4.6. The co-chairs of this Subgroup will report progress to the GEO Secretariat at appropriate intervals, and deliver progress reports at each GEO meeting.
- 4.7. The Subgroup may set up Task teams to address particular issues under its mandate.
- 4.8. The co-chairs of this Subgroup are encouraged to share documents and coordinate with other Subgroups.

5. Funding

Unless otherwise agreed, any costs arising from activities under these Terms of Reference will be borne by the Member or participant that incurs them, and will be subject to the availability of funds, personnel, and other resources.

6. Duration

- 6.1. All activities under these Terms of Reference will commence upon adoption and will continue for the duration and life of the ad hoc Group on Earth Observations, unless otherwise terminated.
- 6.2. The terms of this document may be modified at any time by written agreement of the GEO Members.

Architecture Subgroup Members and Participants

As of 29 September 2003

Japan*
France*
World Meteorological Organization (WMO)*
Brazil**
European Space Agency (ESA)**
United States**
Argentina
Australia
Belgium
Canada
Committee on Earth Observation Satellites (CEOS)
China
European Commission
European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)
Germany
Greece

Integrated Global Observing Strategy Partnership (IGOS-P)
Intergovernmental Oceanographic Commission/Global Ocean Observing System (GOOS)
Israel
Italy
Norway
Russia
South Africa
Spain
Sweden
Switzerland
United Kingdom

**indicates Co-Chair*

***indicates proposed additional Co-Chair*

**Ad hoc Group on Earth Observations (GEO)
Subgroup on Data Utilization**

DRAFT TERMS OF REFERENCE AS OF 29 SEP 2003

Recalling the GEO Terms of Reference adopted on 1 August 2003 at GEO-1, the GEO establishes a Subgroup on Data Utilization and sets forth the following legally non-binding Terms of Reference:

1. Purpose

The Subgroup on Data Utilization will seek to develop a long-term data utilization strategy for the 10-year implementation plan for a comprehensive, coordinated, and sustained Earth observation system or systems, including *in situ*, airborne, and space-borne observations, taking into account existing activities, and building on existing systems and initiatives.

2. Objectives

- 2.1. Review and document relevant international Earth observation data policies.
- 2.2. Minimize barriers to data accessibility and utility.
- 2.3. Encourage the development and use of common data standards and formats and consistent calibration methodologies to facilitate broader data access and use, and to enhance data preservation, where appropriate.
- 2.4. Address data utilization challenges and requirements, such as complexities of various data and metadata sources, quality control, archives, and data management systems.
- 2.5. Develop a data utilization model for the 10-year implementation plan.

3. Approach and Functions

- 3.1. Identify and evaluate existing data utilization approaches for suitability and viability for use under the 10-year plan, including such matters as:
 - a. Capture of metadata;
 - b. Instrument and data calibration;
 - c. Format and exchange standards for data and metadata;
 - d. Catalogues and directories, including interoperability;
 - e. Data and metadata availability, including cost and timeliness;
 - f. Data policies and complexities of diverse data sources.
- 3.2. Evaluate alternatives with respect to meeting desired outcomes and required functions, including resource implications.
- 3.3. Identify and prioritize actions required to implement the long-term strategy.
- 3.4. Recommend a long-term data utilization strategy for the 10-year implementation plan.

4. Subgroup Organization and Reporting

- 4.1. The Subgroup welcomes and is open to all interested GEO Members and participant organizations. The GEO Secretariat will maintain the list of current Subgroup Members and participants.

- 4.2. Representatives of Members and participant organizations may chair or co-chair this Subgroup. The Subgroup chairs or co-chairs will be nominated to and approved by the GEO; additional co-chairs may be designated by consensus of Subgroup Members.
- 4.3. Additional technical experts may participate in Subgroup deliberations at the invitation of a GEO Member or participant organization.
- 4.4. The Subgroup will meet at such times and places as determined by its Members.
- 4.5. The Subgroup will work by consensus of its Members.
- 4.6. The co-chairs of this Subgroup will report progress to the GEO Secretariat at appropriate intervals, and deliver progress reports at each GEO meeting.
- 4.7. The Sub-group may set up Task teams to address particular issues under its mandate.
- 4.8. The co-chairs of this Subgroup are encouraged to share documents, collaborate, and coordinate with other Subgroups.

5. Funding

Unless otherwise agreed, any costs arising from activities under these Terms of Reference will be borne by the Member or participant that incurs them, and will be subject to the availability of funds, personnel, and other resources.

6. Duration

- 6.1. All activities under these Terms of Reference will commence upon adoption and will continue for the duration and life of the ad hoc Group on Earth Observations, unless otherwise terminated.
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Data Utilization Subgroup Members and Participants

As of 29 September 2003

Brazil*
Canada *
European Centre for Medium-Range Weather Forecasting (ECMWF)*
United States **
Argentina
Australia
Belgium
Committee on Earth Observation Satellites (CEOS)
China
European Commission
European Space Agency (ESA)
Egypt
France
Global Climate Observing System (GCOS)

Germany
Greece
Integrated Global Observing Strategy Partnership (IGOS-P)
Intergovernmental Oceanographic Commission/Global Ocean Observing System (GOOS)
Israel
Italy
Japan
Norway
Russia
South Africa
Spain
Sweden
Thailand
United Kingdom
World Climate Research Programme (WCRP)
World Meteorological Organization (WMO)

indicates Co-Chair

***indicates proposed additional Co-Chair*

**Ad hoc Group on Earth Observations (GEO)
Subgroup on User Requirements and Outreach**

DRAFT TERMS OF REFERENCE AS OF 29 SEP 2003

Recalling the GEO Terms of Reference adopted on 1 August 2003 at GEO-1, the GEO establishes the Subgroup on User Requirements and Outreach and sets forth the following legally non-binding Terms of Reference:

1. Purpose

The Subgroup on User Requirements and Outreach will seek to develop for the 10-year implementation plan an effective mechanism to identify high priority requirements for current and future Earth observations, including *in situ*, airborne, and space-borne observations, taking into account existing activities and building on existing systems and initiatives. This Subgroup will establish the means to engage users in a continuing dialogue on their current and evolving requirements.

2. Objectives

- 2.1. Establish, develop and maintain effective dialogue with users who require or have expressed an interest in Earth observations.
- 2.2. Implement an agreed framework for addressing the priority requirements of end users, taking into account existing requirements-gathering processes.
- 2.3. Promote widespread awareness of the benefits of a comprehensive, coordinated, and sustained Earth observation system or systems.

3. Approach and Functions

- 3.1. Identify existing inventories of major user requirements and their present status, including such mechanisms as the CEOS/WMO database, the IGOS-P themes, the GCOS 2nd Adequacy Report and the latest update of WCRP needs.
- 3.2. Recommend a mechanism to identify, document, and prioritize requirements of major stakeholders for current and future Earth observations; review and update these requirements in consultation with stakeholders.
- 3.3. Identify commonalities and requirements from various end users.
- 3.4. Identify opportunities for GEO leadership to interact with major stakeholders.
- 3.5. Recommend outreach mechanisms to increase user awareness of the benefits of a comprehensive, coordinated, and sustained Earth observation system or systems.

4. Subgroup Organization and Reporting

- 4.1. The Subgroup welcomes and is open to all interested GEO Members and participant organizations. The GEO Secretariat maintains the list of current Subgroup Members and participants.

- 4.2. Representatives of Members and participant organizations may chair or co-chair this Subgroup. The Subgroup chairs or co-chairs will be nominated to and approved by the GEO; additional co-chairs may be designated by consensus of Subgroup Members.
- 4.3. Additional technical experts may participate in Subgroup deliberations at the invitation of a GEO Member or participant organization.
- 4.4. The Subgroup will meet at such times and places as determined by its Members.
- 4.5. The Subgroup will work by consensus of its Members.
- 4.6. The co-chairs of this Subgroup will report progress to the GEO Secretariat at agreed intervals, and deliver progress reports at each GEO meeting.
- 4.7. The Subgroup may set up Task teams to address particular issues under its mandate.
- 4.8. The co-chairs of this Subgroup are encouraged to share documents, collaborate, and coordinate with other Subgroups.

5. Funding

Unless otherwise agreed, any costs arising from activities under these Terms of Reference will be borne by the Member or participant that incurs them, and will be subject to the availability of funds, personnel, and other resources.

6. Duration

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- 6.2. The terms of this document may be modified at any time by written agreement of the GEO Members.

User Requirements and Outreach Subgroup Members and Participants

As of 29 September 2003

Canada*
Italy*
United Kingdom*
Argentina
Australia
Belgium
Committee on Earth Observation Satellites (CEOS)
Cyprus
European Centre for Medium-Range Weather Forecasting (ECMWF)
European Commission
Egypt
European Space Agency (ESA)
Germany
Global Climate Observing System (GCOS)
International Geosphere-Biosphere Program (IGBP)

International Group of Funding Agencies for Global Change Research (IGFA)
Integrated Global Observing Strategy Partnership (IGOS-P)
Intergovernmental Oceanographic Commission/Global Ocean Observing System(GOOS)
India
Japan
Norway
South Africa
Spain
Sweden
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United States
World Climate Research Programme (WCRP)
World Meteorological Organization (WMO)
** indicates Co-Chair*

**Ad hoc Group on Earth Observations (GEO)
Subgroup on Capacity Building**

DRAFT TERMS OF REFERENCE AS OF 29 SEP 2003

Recalling the GEO Terms of Reference adopted on 1 August 2003 at GEO-1, the GEO establishes a Subgroup on Capacity Building and sets forth the following, legally non-binding Terms of Reference:

1. Purpose

The Subgroup on Capacity Building will develop for the 10-year implementation plan a long-term capacity building strategy for a comprehensive, coordinated, and sustained Earth observation system or systems, including *in situ*, airborne, and space-borne observations, taking into account existing activities and building on existing systems and initiatives.

2. Objectives

Establish a framework within the 10-year implementation plan to facilitate a coordinated effort to involve and assist countries, with emphasis on developing countries, in improving and sustaining their contributions to observing systems, as well as their access to and effective utilization of observations, data and products, and the related technologies.

3. Approach and Functions

- 3.1. Identify and examine existing and proposed Earth observation capacity building activities by national governments, participating organizations, and other relevant institutions.
- 3.2. Identify priority areas in which Earth observation capacity building would have significant impact and benefit.
- 3.3. Identify mechanisms for leveraging, developing and coordinating Earth observation capacity building initiatives.
- 3.4. Recommend strategies for resource mobilization.
- 3.5. Recommend a long-term capacity building strategy for the 10-year implementation plan.

4. Subgroup Organization and Reporting

- 4.1. The Subgroup welcomes and is open to all interested GEO Members and participant organizations. The GEO Secretariat will maintain the list of current Subgroup Members and participants.
- 4.2. Representatives of Members and participant organizations may chair or co-chair this Subgroup. Subgroup chairs or co-chairs will be nominated to and approved by the GEO; additional co-chairs may be designated by consensus of Subgroup Members.
- 4.3. Additional technical experts may participate in Subgroup deliberations at the invitation of a GEO Member or participant organization.

- 4.4. The Subgroup will meet at such times and places as determined by its Members.
- 4.5. The Subgroup will work by consensus of its Members.
- 4.6. The co-chairs of this Subgroup will report progress to the GEO Secretariat at agreed intervals, and deliver progress reports at each GEO meeting.
- 4.7. The Subgroup may set up Task teams to address particular issues under its mandate.
- 4.8. The co-chairs of this Subgroup are encouraged to share documents, collaborate, and coordinate with other Subgroups.

5. Funding

Unless otherwise agreed, any costs arising from activities under these Terms of Reference will be borne by the Member or participant that incurs them, and will be subject to the availability of funds, personnel, and other resources.

6. Duration

- 6.1. All activities under these Terms of Reference will commence upon adoption and will continue for the duration and life of the ad hoc Group on Earth Observations, unless otherwise terminated.
- 6.2. The terms of this document may be modified at any time by written agreement of the GEO Members.

Capacity Building Subgroup Members and Participants

As of 29 September 2003

Argentina*
Belize/CCAD*
Brazil*
Israel*
Republic of the Congo*
United States*
Australia
Belgium
Canada
Committee on Earth Observation Satellites (CEOS)
European Commission (EC)
Egypt
Integrated Global Observing Strategy Partnership (IGOS-P)
Intergovernmental Oceanographic Commission/Global Ocean Observing System(GOOS)
India
Italy
Japan
New Zealand
Norway
South Africa
Spain

Thailand
United Nations Educational, Scientific and Cultural Organization (UNESCO)
World Meteorological Organization (WMO)

**indicates Co-Chair*

**Ad hoc Group on Earth Observations (GEO)
Subgroup on International Cooperation**

DRAFT TERMS OF REFERENCE AS OF 29 SEP 2003

Recalling the GEO Terms of Reference adopted on 1 August 2003 at GEO-1, the GEO establishes the Subgroup on International Cooperation and sets forth the following legally non-binding Terms of Reference:

1. Purpose

The Subgroup on International Cooperation will develop for the 10-year implementation plan a long-term international organizational strategy and coordination mechanism for a comprehensive, coordinated, and sustained Earth observation system or systems, building on existing mechanisms and structures.

2. Objectives

- 2.1. Establish international strategies, models, and organizational structures that could be used for effective long-term coordination of a comprehensive, coordinated Earth observation system or systems.
- 2.2. Promote improved coordination of a sustained, comprehensive, Earth observation system or systems.

3. Approach and Functions

- 3.1. Identify the international coordination needs of a comprehensive, coordinated, and sustained Earth observation system or systems.
- 3.2. Review existing international coordination mechanisms, models, and strategies; assess their strengths and weaknesses; and identify barriers to effective coordination.
- 3.3. Identify and develop a set of alternative proposed strategies, models, and organizational structures that could be considered for long-term coordination of Earth observation. Consider existing as well as potential strategies, models, and structures, including those from other areas of international coordination.
- 3.4. Assess the strengths and weaknesses of the proposed strategies, including such factors as the:
 - a. Need to involve the broad range of Earth observation communities (e.g., satellite, *in situ*, research, operational, atmosphere, ocean, land, climate, disaster, agriculture, aviation safety, environment, sustainable development);
 - b. Need for flexibility and innovation;
 - c. Time required to institute an optimal approach;
 - d. Costs associated with implementing the coordination mechanism (start-up and on-going).
- 3.5. Recommend for the 10-year implementation plan a long-term international organizational strategy and coordination mechanism for a comprehensive, coordinated, and sustained Earth observation system or systems.

4. Subgroup Organization and Reporting

- 4.1. The Subgroup welcomes and is open to all interested GEO Members and participant organizations. The GEO Secretariat will maintain the list of current Subgroup Members and participants.
- 4.2. Representatives of Members and participant organizations may chair or co-chair this Subgroup. The Subgroup chairs or co-chairs will be nominated to, and approved by, the GEO; additional co-chairs may be designated by consensus of Subgroup Members.
- 4.3. Additional technical experts may participate in Subgroup deliberations at the invitation of a GEO Member or participant organization.
- 4.4. The Subgroup will meet at such times and places as determined by its Members.
- 4.5. The Subgroup will work by consensus of its Members.
- 4.6. The co-chairs of this Subgroup will report progress to the GEO Secretariat at agreed intervals, and deliver progress reports at each GEO meeting.
- 4.7. The co-chairs of this subgroup may set up Task teams to address particular issues under its mandate.
- 4.8. The co-chairs of this Subgroup are encouraged to share documents, collaborate, and coordinate with other Subgroups.

5. Funding

Unless otherwise agreed, any costs arising from activities under these Terms of Reference will be borne by the Member or participant that incurs them, and will be subject to the availability of funds, personnel, and other resources.

6. Duration

- 6.1. All activities under these Terms of Reference will commence upon adoption and will continue for the duration and life of the ad hoc Group on Earth Observations, unless otherwise terminated.
- 6.2. The terms of this document may be modified at any time by written agreement of the GEO Members.

International Cooperation Subgroup Members and Participants

As of 29 September 2003

Australia*
IOC*
United States*
Argentina
Brazil
Canada
CEOS
EC
ESA
EUMETSAT

ICSU
IGOS-P
IOC/GOOS
Israel
Italy
Japan
Russian Federation
South Africa
Spain
Switzerland
UNESCO
WMO

**indicates Co-Chair*