Implementation Activities
- 2012-

Carolin Richter
Director, GCOS Secretariat

CGMS-40, 7-8 November 2012, Lugano, Switzerland

Concept of the Global Climate Observing System

GLOBAL CLIMATE OBSERVING SYSTEM

20 years engagement in space-based observations for climate

GLOBAL CLIMATE OBSERVING SYSTEM

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

REPORT OF THE FIRST SESSION OF THE
JOINT SCIENTIFIC & TECHNICAL COMMITTEE
FOR GCOS

(Geneva, Switzerland, April 13-15, 1992)

July 1992
GCOS - 1
(WMO/TD - No. 493)

UNITED NATIONS ENVIRONMENT PROGRAMME

INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS

4. EARTH OBSERVATION SATELLITE PROGRAMMES (Agenda item 4)

4.1 The Committee was briefed on the observation satellite programmes in Asia and the Far East, North America and Europe. Background materials were also provided by the JSTC members representing satellite agencies.

4.2 Following the presentations, the Committee raised a number of issues concerning satellite data and the needs of GCOS with regard to future missions. It noted also an upcoming meeting of the Committee on Earth Observations Satellites (CEOS) in the United Kingdom. The JSTC agreed that GCOS should seek affiliate membership in CEOS, since there were many issues of mutual interest facing the two committees. The Chairman agreed to approach CEOS in this regard.

4.3 The Chairman of OOSDP also provided the Committee with an informal document describing recent satellite issues before the OOSDP.

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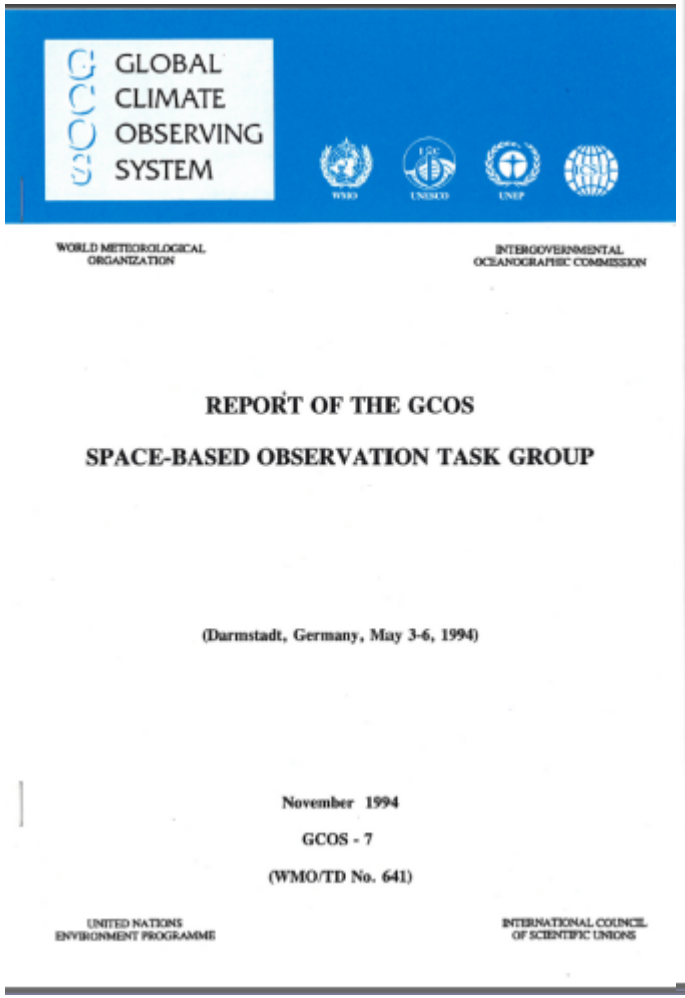
20 years engagement in space-based observations for climate

GLOBAL CLIMATE OBSERVING SYSTEM



GLOBAL CLIMATE OBSERVING SYSTEM

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

REPORT OF THE GCOS

SPACE-BASED OBSERVATION TASK GROUP

(Darmstadt, Germany, May 3-6, 1994)

November 1994

GCOS - 7

(WMO/TD No. 641)

UNITED NATIONS ENVIRONMENT PROGRAMME

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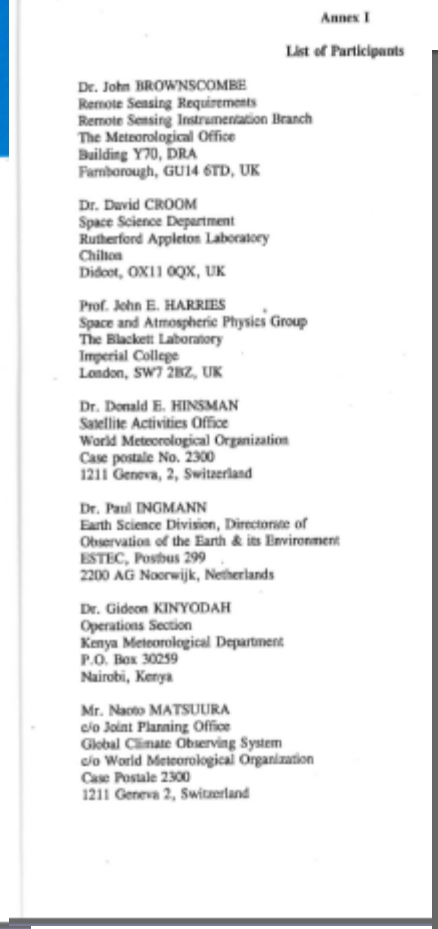


Annex I

List of Participants

Dr. John BROWNSCOMBE
Remote Sensing Requirements
Remote Sensing Instrumentation Branch
The Meteorological Office
Building Y70, DRA
Farnborough, GU14 6TD, UK

Dr. David CROOM
Space Science Department
Rutherford Appleton Laboratory
Chilton
Didcot, OX11 0QX, UK

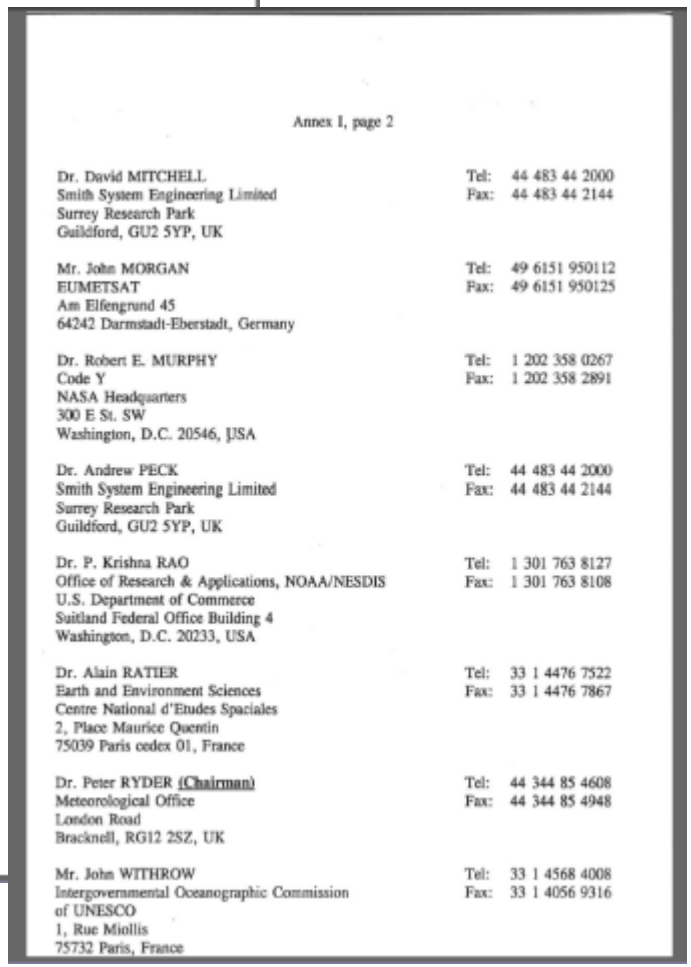
Prof. John E. HARRIES
Space and Atmospheric Physics Group
The Blackett Laboratory
Imperial College
London, SW7 2BZ, UK

Dr. Donald E. HINSMAN
Satellite Activities Office
World Meteorological Organization
Case postale No. 2300
1211 Geneva, 2, Switzerland

Dr. Paul INGMANN
Earth Science Division, Directorate of
Observation of the Earth & its Environment
ESTEC, Postbus 299
2200 AG Noorwijk, Netherlands

Dr. Gideon KINYODAH
Operations Section
Kenya Meteorological Department
P.O. Box 30259
Nairobi, Kenya

Mr. Naoto MATSUURA
c/o Joint Planning Office
Global Climate Observing System
c/o World Meteorological Organization
Case Postale 2300
1211 Geneva 2, Switzerland



Annex I, page 2

Dr. David MITCHELL Smith System Engineering Limited Surrey Research Park Guildford, GU2 5YP, UK	Tel: 44 483 44 2000 Fax: 44 483 44 2144
Mr. John MORGAN EUMETSAT Am Elfengrund 45 64242 Darmstadt-Eberstadt, Germany	Tel: 49 6151 950112 Fax: 49 6151 950125
Dr. Robert E. MURPHY Code Y NASA Headquarters 300 E St. SW Washington, D.C. 20546, USA	Tel: 1 202 358 0267 Fax: 1 202 358 2891
Dr. Andrew PECK Smith System Engineering Limited Surrey Research Park Guildford, GU2 5YP, UK	Tel: 44 483 44 2000 Fax: 44 483 44 2144
Dr. P. Krishna RAO Office of Research & Applications, NOAA/NESDIS U.S. Department of Commerce Suitland Federal Office Building 4 Washington, D.C. 20233, USA	Tel: 1 301 763 8127 Fax: 1 301 763 8108
Dr. Alain RATIER Earth and Environment Sciences Centre National d'Etudes Spaciales 2, Place Maurice Quentin 75039 Paris cedex 01, France	Tel: 33 1 4476 7522 Fax: 33 1 4476 7867
Dr. Peter RYDER (Chairman) Meteorological Office London Road Bracknell, RG12 2SZ, UK	Tel: 44 344 85 4608 Fax: 44 344 85 4948
Mr. John WITHROW Intergovernmental Oceanographic Commission of UNESCO 1, Rue Miollis 75732 Paris, France	Tel: 33 1 4568 4008 Fax: 33 1 4056 9316

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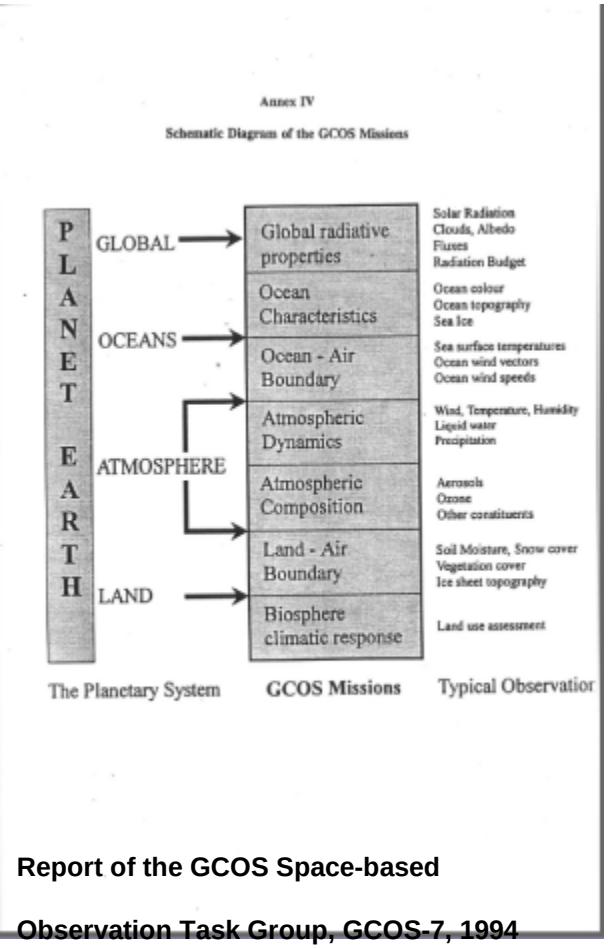
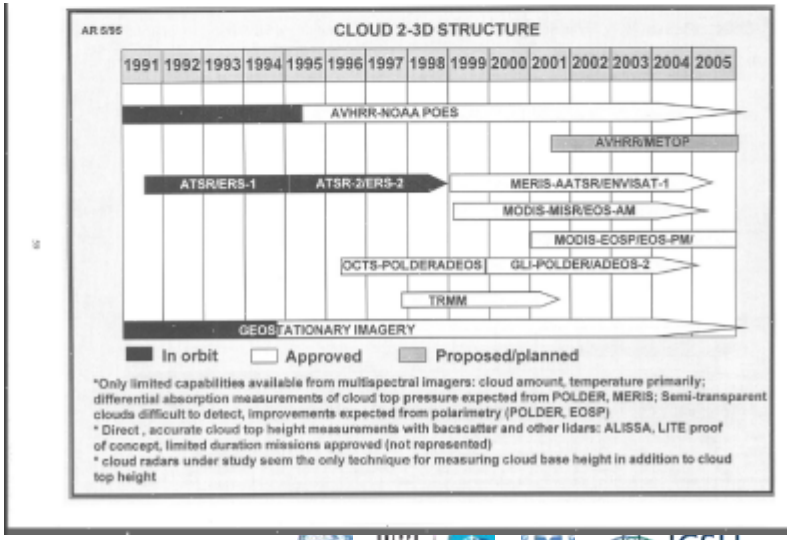
GCOS Space Plan



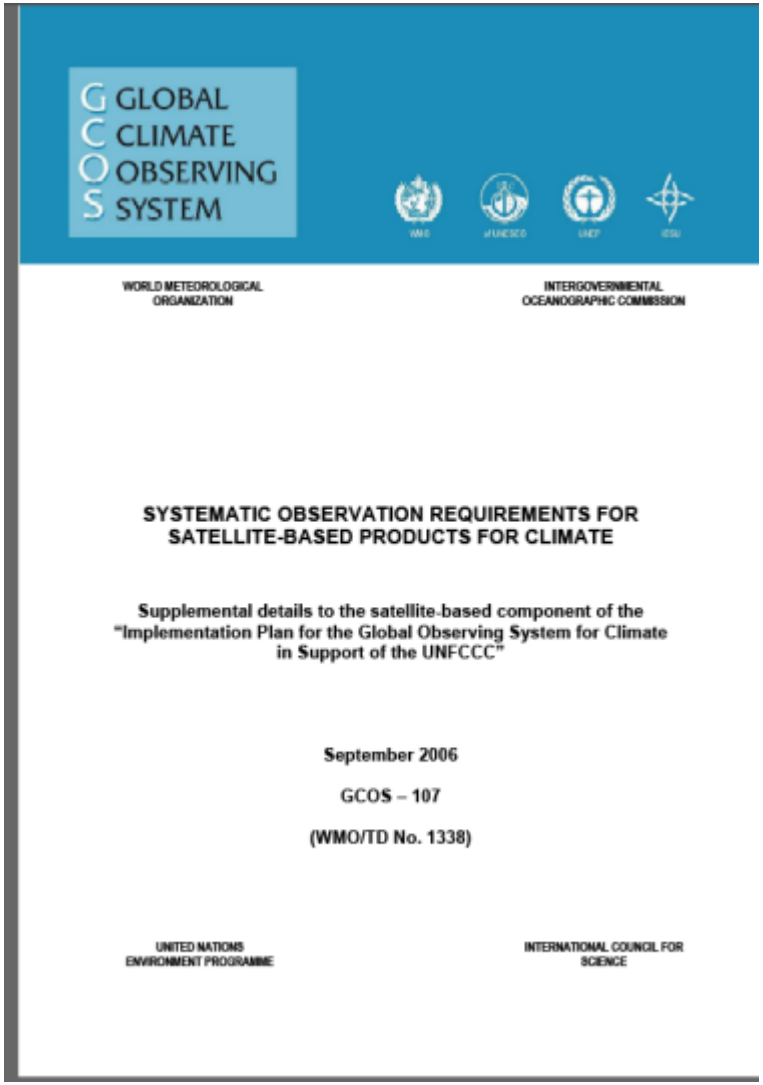
The following diagrams (from Dr Ratier, CNES) illustrate some examples of the problems in obtaining complete long-term (decadal) coverage for climate parameters. Often, excellent short-term observations are not adequately exploited due to lack of long-term commitment. As mentioned earlier in the body of the text, the term "approved" can have widely different meanings, and should be treated with discretion. Also, changes in agency plans can mean that such diagrams can rapidly become out-of-date, and hence ated as guidelines.



Report of the GCOS Space-based

Observation Task Group, GCOS-7, 1994

GCOS requirements for satellite-based data products for climate



GLOBAL CLIMATE OBSERVING SYSTEM

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

SYSTEMATIC OBSERVATION REQUIREMENTS FOR SATELLITE-BASED PRODUCTS FOR CLIMATE

Supplemental details to the satellite-based component of the "Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC"

September 2006

GCOS – 107

(WMO/TD No. 1338)

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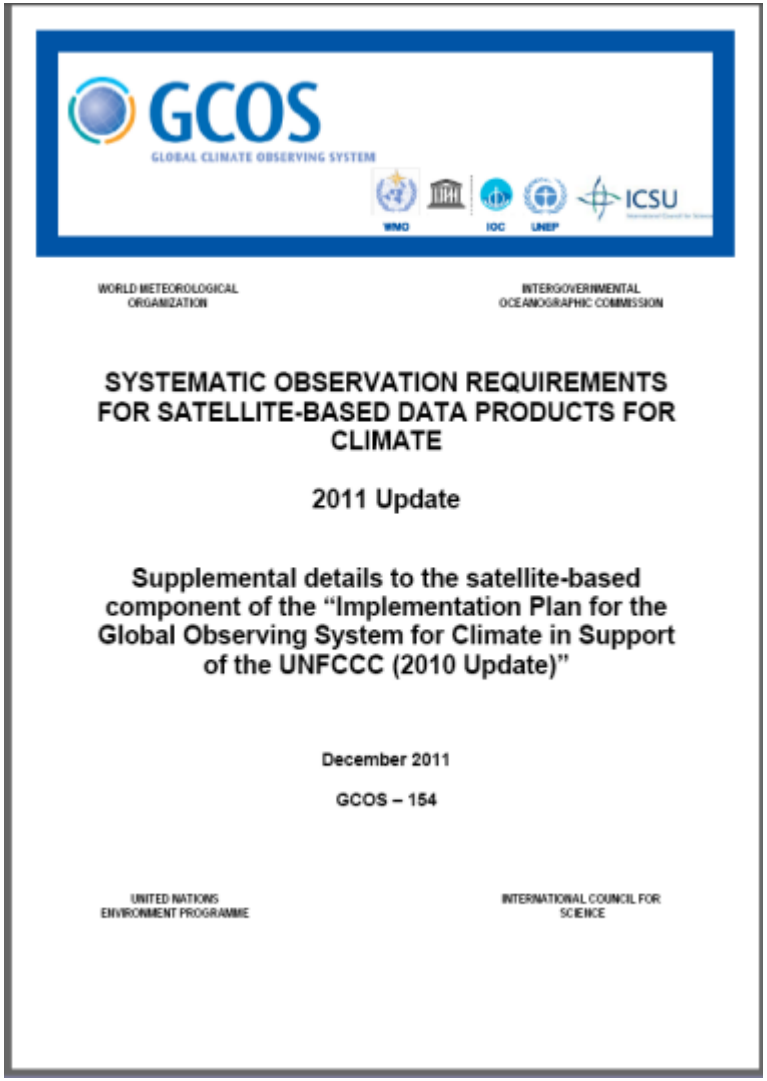

GCOS

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INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

SYSTEMATIC OBSERVATION REQUIREMENTS FOR SATELLITE-BASED DATA PRODUCTS FOR CLIMATE

2011 Update

Supplemental details to the satellite-based component of the "Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC (2010 Update)"

December 2011

GCOS – 154

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GCOS
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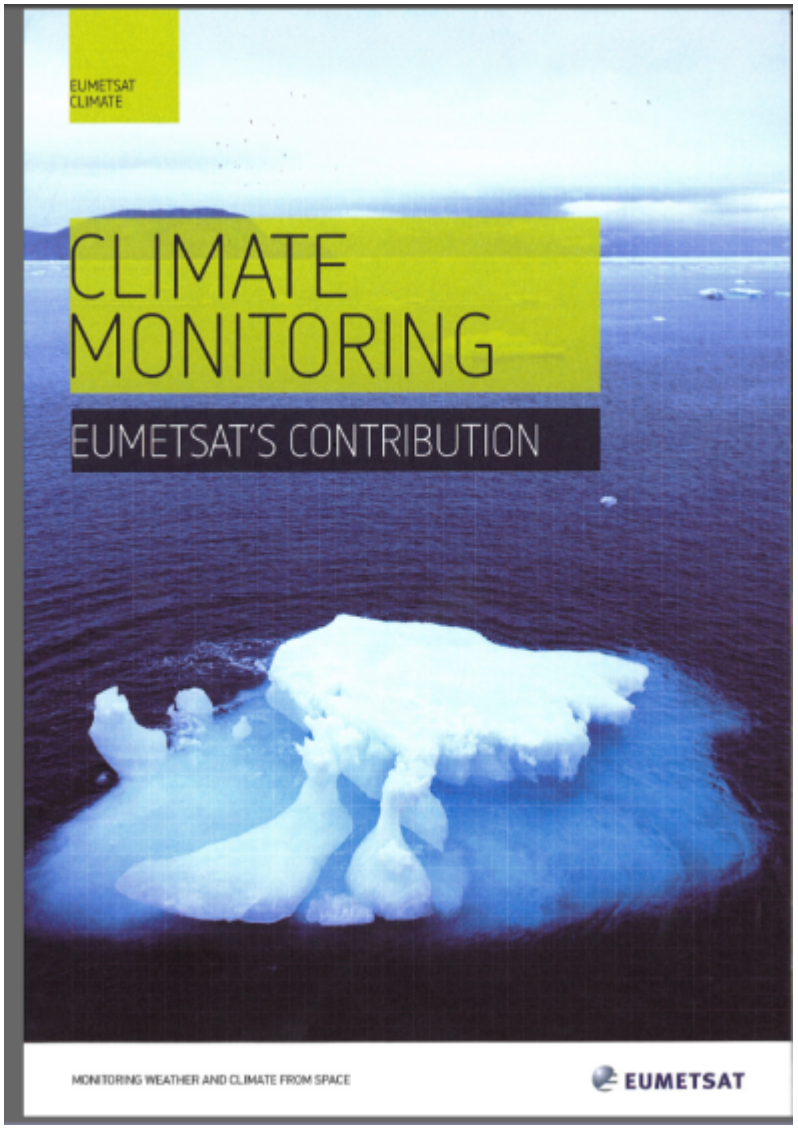
Responses to GCOS



SCOPE•CM

SCOPE-CM aims to establish a coordinated international network to produce Climate Data Records (CDRs) operationally from multi-agency mission data, in response to Global Climate Observing System (GCOS) requirements.

World Meteorological Organization · JMA · EUMETSAT · NOAA

WMO · UNESCO · IOC · UNEP · ICSU

GCOS

GLOBAL CLIMATE OBSERVING SYSTEM

Responses to GCOS

esa

climate change initiative

European Space Agency

ESA | CCI | Aerosol | Cloud | CMUG | Fire | GHG | Glaciers | Ice Sheets | Land Cover | Ocean Colour | Ozone | Sea Ice | Sea Level | SST | Soil Moisture

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GCOS
GLOBAL CLIMATE OBSERVING SYSTEM

Responses to GCOS

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Subsidiary Body for Scientific and Technological Advice
Thirty-seventh session
Doha, 26 November to 1 December 2012

Item 7 of the provisional agenda
Research and systematic observation

Update on progress made by space agencies involved in global observations in their coordinated response to relevant needs of the Global Climate Observing System and the Convention

Submission from the Committee on Earth Observation Satellites

1. The Conference of the Parties, by decision 9/CP.15, encouraged the Committee on Earth Observation Satellites (CEOS) to continue coordinating and supporting the implementation of the satellite component of the Global Climate Observing System (GCOS).

2. At its thirty-third session,[1] the Subsidiary Body for Scientific and Technological Advice (SBSTA) welcomed the coordinated response by the CEOS to the relevant needs of the GCOS implementation plan and those of the Convention, and the progress and commitment by space agencies involved in climate observations to address the space-based component of the GCOS and improve climate monitoring capabilities from space on a sustained basis. The SBSTA encouraged Parties that support the space agencies involved in global observations to continue, through CEOS, cooperation with and support to the GCOS, and to respond to the relevant needs identified in the 2010 updated GCOS implementation plan.[2] The SBSTA invited the CEOS to provide, by SBSTA 37, an updated report on progress made on major achievements in relevant areas.

3. In response of this invitation, India has submitted the above-mentioned progress report on behalf of the CEOS. An abridged version of this report is reproduced in this document. The full report will be made available at <www.ceos.org> and at <http://unfccc.int/3462>.

[1] FCCC/SBSTA/2010/13, paragraphs 52 and 53.
[2] The full title of the 2010 updated GCOS implementation plan reads "Update of the Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC".

Submission from India on behalf of the Committee on Earth Observation Satellites

The Response of the Committee on Earth Observation Satellites (CEOS) to the Global Climate Observing System Implementation Plan 2010 (GCOS IP-10)

Developed by CEOS and submitted to the United Nations Framework Convention on Climate Change (UNFCCC) Subsidiary Body on Scientific and Technological Advice (SBSTA)

24 September 2012

Abridged Version
Submitted 5 October 2012

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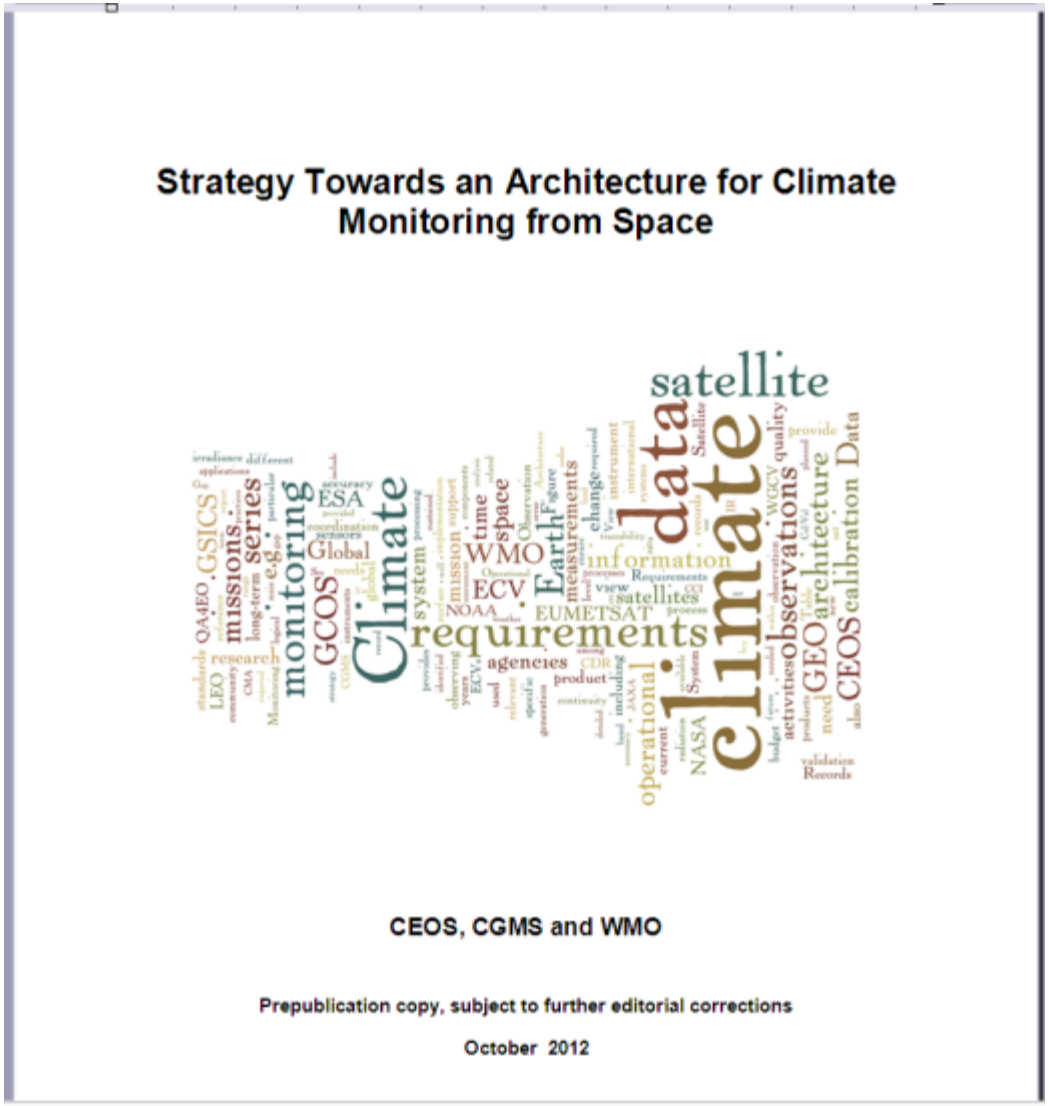
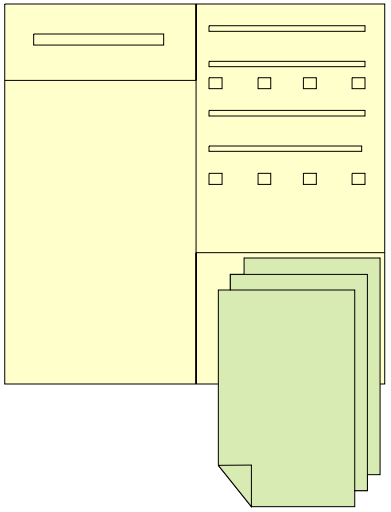
Multi-lateral cooperation….and non-logo effort

GLOBAL CLIMATE OBSERVING SYSTEM



ECV Inventory



GCOS
GLOBAL CLIMATE OBSERVING SYSTEM

Assessment Cycle

Future plans:
New Implementation Plan, 2016

What needs to be measured?

Essential Climate Monitoring Variables (ECVs)
Implementation Plan

Future plans:
Assessment Report (Adequacy&Progress), 2015

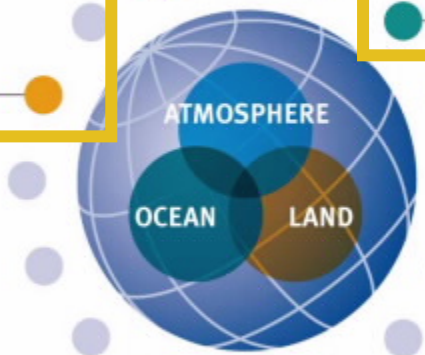
Where are we now?

Progress Report

1998 1st Adequacy Report, 2003 2nd Adequacy Report
2009, reviewing the years 2004 – 2008

How to improve the system?

New Networks
Research
WCRP, IGBP
National Coordination
GCOS Cooperation Mechanism
Contributing Systems
Global Terrestrial Observing System,
Global Ocean Observing System,
WMO Integrated Global Observing System,
and others



GCOS Implementation Plan, 2004 and 2010
Supplement on Satellite Data Products, 2006 and 2011

How to do it?

Climate Monitoring Principles
Guidelines for Datasets and Products
Regional Action Plans

By whom/by which means?

Space Agencies
Network Owners
Meteorological Service, Hydrological Service,
Research Organizations, and other institutions
Data and Analysis Centres

New evolving initiatives:
Global Framework for Climate Services
Architecture for Climate Monitoring from Space
ESA Climate Change
GEOSS
Framework for Ocean Observing
"Framework for terrestrial observations"

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GLOBAL CLIMATE OBSERVING SYSTEM

Future requirements

- **Review of data needs for adaptation and service provision (2013-2014)**
  - Workshop on observations for adaptation, 25-27 February 2013
  - linking with GFCS activities
- **Assessment of progress and adequacy (2014-2015)**
  - building on identification of needs for adaptation and other services
  - informed by identification of uncertainties by the IPCC Fifth Assessment process
- **New Implementation Plan (2015-2016)**

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Recommendations

- ECV Inventory, supported through the Architecture for Climate Monitoring from Space
- Access to climate data records produced by CGMS members
- Long-term preservation of data

Recommendation: CGMS response to GCOS

or

“Single voice” response of the Earth Observing Satellite Community to GCOS