

## **TERMS OF REFERENCE OF PROPOSED CEOS-CGMS WORKING GROUP ON CLIMATE**

In response to CGMS action/recommendation 40.07

A discussion took place at the 40<sup>th</sup> meeting of CGMS in Lugano on 4-8 November 2012 on the possible creation of a joint CEOS/CGMS Working Group on Climate and, as a consequence, the CGMS Secretariat (EUMETSAT) took an action: "to explore further the possibility to coordinate Climate-related activities with CEOS in line with the work done for the preparation of the Architecture for Climate Monitoring from Space and to report to CGMS-41 in July 2013 in Japan".

Following positive interactions with the CEOS Strategic Implementation Team, and the CEOS Secretariat, draft Terms of Reference for a joint CEOS/CGMS Working Group on Climate have been developed, together with proposed transition arrangements from the existing CEOS Working Group on Climate, for endorsement by CGMS.

In recognition of the complementary interests of CEOS and CGMS, the chairs will be alternately drawn from meteorological and non-meteorological space agencies" (as described in ANNEX I).

Dependent on the results of the discussions at the 41st meeting of CGMS, a corresponding proposal will be presented to the CEOS Plenary in November 2013 and, assuming a positive outcome, the new joint working group will be established immediately thereafter.

Action/Recommendation proposed:

CGMS is invited to:

- i) Endorse the proposed Terms of Reference for a Joint CEOS/CGMS Working Group on Climate (see ANNEX I), together with the proposed transition arrangements from the current CEOS Working Group on Climate described in section 2;
- ii) Nominate members for the Joint Working CEOS/CGMS Working Group on Climate.



## **1 BACKGROUND**

A discussion took place at the 40<sup>th</sup> meeting of CGMS in Lugano on 4-8 November 2012 on the possible creation of a joint CEOS/CGMS Working Group on Climate. Following expressions of support for such an approach, an action was placed on the CGMS Secretariat (EUMETSAT) at CGMS-40 "to explore further the possibility to coordinate Climate-related activities with CEOS in line with the work done for the preparation of the Architecture for Climate Monitoring from Space and to report to CGMS-41 in July 2013 in Japan". During these discussions it was acknowledged that the natural interface within CEOS on this matter would be the Chair of the CEOS Strategic Implementation Team (SIT).

Consequently, a concept paper was prepared for discussion at CEOS SIT-28, which took place in March 2013. This concept paper was favourably received at SIT-28, and it was concluded that draft Terms of Reference for a joint group should be developed in a timeframe consistent with a preliminary review by the CEOS Secretariat, prior to being submitted to the 41st meeting of CGMS for approval (and subsequently the CEOS Plenary in November 2013).

As a result, draft Terms of Reference were prepared based on a combination of the high-level objectives given in the concept paper and the Terms of Reference for the existing CEOS Working Group on Climate.

These draft Terms of Reference (attached as Annex I) were endorsed by the CEOS Secretariat on the assumption that certain transition arrangements were also adopted to ensure a smooth transfer of activities from the existing CEOS Working Group on Climate.

## **2 PROPOSAL FOR A JOINT CEOS/CGMS WORKING GROUP ON CLIMATE**

Assuming endorsement by the respective CGMS and CEOS Plenaries, and based on the draft Terms of Reference provided in ANNEX I, it is proposed to establish a joint CEOS/CGMS Working Group on Climate immediately following the CEOS Plenary in November 2013.

In recognition of the complementary interests of CEOS and CGMS, the chairs will be alternately drawn from meteorological and non-meteorological space agencies" (as described in ANNEX I).

Also, as this new joint working group will take extensive heritage from the existing CEOS Working Group on Climate, an intrinsic component of this proposal is the assumption that appropriate transition arrangements will be put in place, i.e.:

- the Chair will be John Bates (NOAA) from November 2013 - November 2015;
- the Vice-Chair will be Pascal Lecomte (ESA) from November 2013 - November 2015 and then Chair from November 2015 - November 2017;
- all existing CEOS Working Climate members are automatically enrolled as members of the new joint working group.

CGMS members are invited to complement this starting point with additional membership nominations.

In terms of its relationship to existing CGMS Working Groups, it is assumed that this proposed joint working group would be cross-cutting in nature; coordinating its activities with the other groups on an "as needed" basis.

### **3 CONCLUSION**

CGMS is invited to:

- i) Endorse the proposed Terms of Reference for a Joint CEOS/CGMS Working Group on Climate (see ANNEX I), together with the proposed transition arrangements from the current CEOS Working Group on Climate described in Section 2;
- ii) Nominate members for the Joint Working CEOS/CGMS Working Group on Climate.

## **ANNEX I: PROPOSED TERMS OF REFERENCE FOR JOINT CEOS/CGMS WORKING GROUP ON CLIMATE**

The over-arching goal of the CEOS/CGMS Working Group on Climate (WG Climate) will be to improve the systematic availability of Climate Data Records through the coordinated implementation, and further development of the architecture for climate monitoring from space.

More specifically, the coordination shall be designed to achieve three main objectives:

- Provision of a structured, comprehensive and accessible view as to what Climate Data Records are currently available from satellite missions of CEOS and CGMS members or their combination;
- Creation of the conditions for delivering further Climate Data Records, including multi-mission Climate Data Records, through best use of available data to fulfil GCOS requirements (e.g. by identifying and targeting cross-calibration or re-processing gaps/shortfalls );
- Optimisation of the planning of future satellite missions and constellations to expand existing and planned Climate Data Records, both in terms of coverage and record length, and to address possible gaps with respect to GCOS requirements.

To achieve these objectives the CEOS/CGMS Working Group on Climate will:

- Define and implement a consistent Climate Monitoring Architecture for space-based observations,
- Review and assess, on behalf of CEOS and CGMS, the generation of Fundamental Climate Data Records (FCDRs) and derived Essential Climate Variable (ECV) climate products supported by member space agencies, complementary with existing entities and roles,
- Assess the compliance of satellite missions and products with the GCOS Climate Monitoring Principles and with the “Guideline for the Generation of Datasets and Products meeting GCOS Requirements” (GCOS-143),
- Identify multi-agency implementation teams for each product and review their actions, and ensure that a coherent implementation plan exists for each and every product taking full account of pertinent international initiatives,
- Make recommendations to the above teams and receive recommendations from them, for transmission to CEOS and CGMS Principals,
- Ensure coherence of climate product generation supported by space agencies, including other relevant international activities.

In addition, it will:

- Ensure a plan is put in place for the development of a joint CEOS/CGMS response, which has broad consultation across the community, and provides the basis for future planning and priority setting by space agencies in response to climate information needs, including:
  - The update of the CEOS/CGMS Response to GCOS requirements, and
  - The update of reports to SBSTA/UNFCCC on CEOS/CGMS climate actions, as requested,
- Support the work of GCOS in defining and delivering the Essential Climate Variables required by the UNFCCC,
- Provide guidance to CEOS and CGMS on climate-related Tasks involving international coordination mechanisms (such as GEO and GFCS), and produce relevant reports on behalf of CEOS and CGMS Plenaries,
- Support and advice on the overall relation of CEOS and CGMS to the UNFCCC and its subsidiary bodies, to the IPCC and other international coordination mechanisms such as GFCS.

In carrying out the tasks above, it will:

- Undertake an analysis, of the extent to which the current status of production of satellite climate records meets the GCOS requirements, including an analysis of the consistency of definitions of ECVs,
- Work with the relevant CEOS and CGMS mechanisms (i.e. Virtual Constellations, Scope-CM,...) to ensure a coherent and consistent approach to the provision of climate records across the various topical areas,
- Promote openness, traceability and access to climate data, codes and products,
- Facilitate the inter-comparison of model outputs with data by identifying a subset of parameters key to the IPCC needs and encourage providers to deliver the necessary data in the required form,
- Interact with Science programs such as WCRP and IGBP to assist them in enabling their analysis, assessment and feedback to space agencies on the production of climate records,
- Build on the work of relevant internal and external activities and initiatives (e.g. CEOS WGCV, GSICS and QA4EO) to support the calibration and validation underpinning the production of Climate Data Records,
- Coordinate with existing in situ networks to integrate complementary measurements and observations and, subject to a feasibility assessment, provide the database infrastructure for recording the availability of ECV-relevant in situ data records (with WMO and WCRP being responsible for soliciting and coordinating such in situ contributions),
- Track the progress of the detailed Actions Plans developed by CEOS and CGMS in the CEOS/CGMS Response to the GCOS IP for all of the ECVs involving space-based observations.

The working group shall be led by a Chair serving a term of 2 years; alternately drawn from meteorological and non-meteorological space agencies. A vice-chair will also be elected with the aim of ensuring a smooth transition at the end of the chairmanship. Arrangements shall be put in place to ensure unique and consistent reporting to both CEOS and CGMS Plenary meetings.

The Working Group shall define its rules of procedure based on the established practices for the conduct of CEOS and CGMS Working Groups.





**Glossary of Terms**

CDR:	Climate Data Record
CEOS:	Committee on Earth Observation Satellites
CGMS:	Coordination Group for Meteorological Satellites
ECV:	Essential Climate Variable
FCDR:	Fundamental Climate Data Record
GCOS:	Global Climate Observing System
GEO:	Group on Earth Observations
GFCS:	Global Framework for Climate Services
GSICS:	Global Space-based Inter-Calibration System
IGBP:	International Geosphere-Biosphere Programme
IPCC:	Intergovernmental Panel on Climate Change
QA4EO:	Quality Assurance Framework for Earth Observation
SBSTA:	Subsidiary Body for Scientific and Technological Advice
SCOPE-CM:	Sustained and Co-Ordinated Processing of Environmental Satellite Data for Climate Monitoring
UNFCCC:	United Nations Framework Convention on Climate Change
WCRP:	World Climate Research Programme
WGCV:	(CEOS) Working Group on Calibration and Validation
WMO:	World Meteorological Organisation