CGMS

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Prepared by WMO
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# OUTCOME OF THE WORKSHOP ON CONTINUITY AND ARCHITECTURE REQUIREMENTS FOR CLIMATE MONITORING

In response to CGMS action A38.37

WMO-WP-24 reports on the outcome of the workshop on "Continuity and Architecture Requirements for Climate Monitoring," which was organized in Geneva by WMO and GCOS from 13 to 14 January 2011.

In commenting on the Gap Analysis, the workshop had noted for instance the risk of gap on Earth Radiation Budget and recommended agencies to urgently consider planning for continuous availability of at least one broad-band radiometer and one Total Solar Irradiance instrument as of 2020, and also encouraged scientific cooperation to support such ERB missions. It also expressed concern about the lack of planned follow-on to the Global Precipitation Measurement (GPM) precipitation radar mission noting its expected benefit for climate, weather and hydrology applications.

From a more general perspective, the workshop:

- Suggested more consideration be given to climate instruments (such as limb sounders) on board future operational missions;
- Highlighted that the process to identify needs and priorities based on a systematic Gap Analysis was a critical step in the definition of an architecture;
- Furthermore suggested increasing communication and coordination among the CGMS-sponsored international scientific working groups (IPWG, IROWG, ITWG, IWWG) and the CEOS Virtual Constellations;
- Recommended continuity of high-accuracy and stable reference instruments as anchors to increase the value of operational instruments for climate purposes, and wished that GSICS, in consultation with WGCV, explore mechanisms to implement this approach.

In addition, the workshop discussed the overall approach of an architecture for climate monitoring from space and established a writing team to work out a concept paper on this topic, which is the subject of CGMS-39 WMO-WP-08.

Action/Recommendation proposed:

To consider the outcome of the workshop on Continuity and Architecture Requirements for Climate Monitoring.

# WORKSHOP ON CONTINUITY AND ARCHITECTURE REQUIREMENTS FOR CLIMATE MONITORING FROM SPACE

## 1 Introduction

In response to CGMS Action A38.37 and to guidance given by the fifth session of the Expert Team on Satellite Systems (ET-SAT-5), the Workshop on Continuity and Architecture Requirements for Climate Monitoring was convened on 13 and 14 January 2011 in Geneva, in coordination with GCOS. The goal was to analyze and refine the "continuity aspects" of the GCOS requirements in order to inform the definition of a space-based architecture for climate observations. This was considered as the first of a possible series of workshops on architecture for climate monitoring from space. (See workshop documents, presentations and conclusions on: http://www.wmo.int/pages/prog/sat/workingdocuments_en.php .)

## 2. Outcome of the workshop

As recommended by ET-SAT and CGMS (CGMS Action 38.43), a Gap Analysis mapped to the GCOS Essential Climate Variables (ECVs) was provided in advance of the workshop. The workshop noted that the Gap Analysis showed a need for additional long-term planning for several ECVs, and/or for specific ECV-related products. As examples, a technical subgroup of the workshop highlighted particular areas of anticipated gaps: Earth Radiation Budget (including solar irradiance), global precipitation, and atmospheric composition (as measured by limb sounding instruments).

> The workshop thus recommended agencies to urgently consider planning for continuous availability of at least one broad-band radiometer and one Total Solar Irradiance instrument as of 2020, and also encouraged scientific cooperation to support such ERB missions.
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> It recommended considering a follow-on to the planned NASA/JAXA Global Precipitation Measurement (GPM) mission with Dual frequency Precipitation Radar noting its expected benefit for climate, weather and hydrology applications.
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> It suggested more consideration be given to climate instruments (such as limb sounders) on board future operational missions.
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> It highlighted that the process to identify needs and priorities based on a systematic Gap Analysis was a critical step in the definition of an architecture.
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> The workshop furthermore suggested increasing communication and coordination among the CGMS-sponsored international scientific working groups (IPWG, IROWG, ITWG, IWWG) and the CEOS Virtual Constellations.
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> It recommended continuity of high-accuracy and stable reference instruments as anchors to increase the value of operational instruments for climate purposes, and wished that GSICS, in consultation with WGCV, explore mechanisms to implement this approach.

In parallel with these technical discussions, a sub-group was formed where participants discussed policy and governance aspects of an architecture for climate monitoring from space, in response to the concept document, which had been circulated by WMO in December 2010 following consultation of CGMS (See CGMS-38 WMO-WP-09) and CEOS, and endorsement by the WMO Commission for Basic Systems (CBS-XIV). The workshop agreed to establish a writing team involving representatives of CGMS, CEOS, and WMO Secretariat, with the goal to jointly develop a strategy document. This writing team has been implemented and its outcome is reported under CGMS-39 WMO-WP-08.