

## **GLOBAL CLIMATE OBSERVING SYSTEM**

*(Submitted by WMO)*

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### **Summary and purpose of document**

This document presents a brief summary of some recent developments in the Global Climate Observing System (GCOS) programme relevant to CGMS

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### **ACTION PROPOSED**

The session is invited to note the information contained in this document

## 1. GCOS Steering Committee – Twelfth Session

The Twelfth Session of the GCOS Steering Committee (SC-XII) was held in Geneva, Switzerland, 15-18 March 2004. Results from CGMS-XXXI relevant to GCOS were presented to the session by the WMO Secretariat (Dr D. Hinsman), including the actions of most interest to GCOS (namely Actions 31.27, 31.28, 31.31 and 31.32). The SC expressed its appreciation for the cooperation and assistance being provided by CGMS and its members in support of GCOS objectives, especially in the area of generating integrated, global, homogeneous climate-quality products and in adhering to the GCOS Climate Monitoring Principles to the extent possible. This was expressed formally through decision 29 of the session:

“The SC welcomed the continuing cooperation between GCOS and the CGMS through the AOPC and the WMO Space Programme. It noted with appreciation the efforts and plans of the satellite operators to adhere to the GCOS Climate Monitoring Principles, as well as the ongoing activities and intentions of CGMS members toward generating many of the integrated global climate products identified in the Second Adequacy Report.”

## 2. GCOS/WCRP AOPC – Tenth Session

The Tenth Session of the GCOS/WCRP Atmospheric Observation Panel for Climate (AOPC) was held in Geneva, Switzerland, 19-23 April 2004. Dr J. Schmetz informed the session of the results from CGMS-XXXI, noting especially the deliberations and recommendations of Working Group I on ‘Satellite Products’. The AOPC welcomed the response of CGMS-XXXI to the decisions of AOPC-IX and agreed the following decisions:

45. The AOPC noted with appreciation the action items agreed at CGMS-XXXI aimed specifically at supporting GCOS needs. It welcomed in particular CGMS efforts to develop globally-consistent, homogeneous data products (such as surface albedo) from satellite and related *in situ* data and encouraged the continuation of these efforts for other products.
46. The AOPC strongly endorsed the re-processing of Atmospheric Motion Vectors (AMVs) with common state-of-the-art algorithms to provide homogeneous data in support of re-analyses at NWP centres and for other climate analyses. It recognized that each satellite operator was performing its own reprocessing of AMVs, and stressed the need for the AMV products be globally consistent and homogeneous. The Panel noted that developments over previous years carried out by the International Winds Working Group under the auspices of CGMS had made considerable progress in that regard.
47. The AOPC supported the selection of surface albedo as a parameter for developing a prototype climate data set from geostationary satellite observations. It welcomed the considerable progress being made by members of CGMS toward this end and requested an update on developments at its next session. The Panel noted that the reprocessing involved began with Level-1 data and thus provided an improved Level-1b data set that was useful for other applications.
48. The AOPC noted that while the surface albedo product from geostationary satellites necessitated the reprocessing of visible channel data, it would be useful also to develop selected products requiring the reprocessing of thermal infrared data. Convective indices were suggested for that purpose because they are uniquely observed from geostationary orbit, scientifically interesting, and simple enough in terms of retrieval algorithms; they also present the necessary challenges that need to be considered in reprocessing image data from the archive.”

The AOPC also expressed its support for the establishment of a 'satellite upper-air network' or equivalent through its decision 30:

"The AOPC recognized the benefits of establishing a network of upper-air stations at which releases of high-quality radiosondes would be coordinated with satellite overpasses, and encouraged the continuation of efforts toward this end. Such a 'Satellite Upper-Air Network' (SUAN) would provide continuing opportunities to inter-compare sonde and satellite measurements for the benefit of both climate and NWP communities. The Panel recommended that such a network be established by arranging for the release of additional sondes at GUAN stations to the extent possible, where the technical skills for high-quality observations should already be available, thereby building on existing stations and infrastructure in a cost-effective manner. It nevertheless emphasized that the arrangement for additional soundings must not disturb the routine operation of those stations for GUAN purposes. The Panel also noted that humidity measurements from such a network should be of adequate accuracy to be useful for the simulation of radiances with radiative transfer models."

### **3. GCOS Implementation Plan**

As advised at CGMS-XXXI, GCOS is in the process of developing a phased 5- to 10-year implementation plan to respond to the findings of the Second Report on the Adequacy of the Global Observing Systems for Climate in support of the UNFCCC. This was formally requested by the Conference of the Parties (COP) to the UNFCCC at its Ninth Session in Milan in December 2003, and endorsed by the GCOS Steering Committee. The plan should take into account existing international and intergovernmental mechanisms and be built on a mix of high-quality satellite and *in situ* measurements, dedicated infrastructure and targeted capacity-building. It is being developed in collaboration with the activities being carried out under the direction of the *ad hoc* Group on Earth Observations (GEO). A first draft of the report is nearing completion and will be available for open review through the GCOS Web site from mid-May to about mid-July. A final version of the plan has been requested by COP for presentation to its Subsidiary Body for Scientific and Technological Advice at their twenty-first session in December 2004.

### **4. Conclusions**

GCOS welcomes the continuing cooperation with CGMS and its members in defining and establishing the satellite component of the GCOS baseline networks, including the observational infrastructure and the development of the integrated global climate products needed by its users. It looks forward to continuing and expanding this cooperation in the future.

The session is invited to take note of the information contained in this report.