

WMO CONSULTATIVE MEETINGS ON HIGH-LEVEL POLICY ON SATELLITE MATTERS

(Submitted by WMO)

Summary and purpose of document

To inform CGMS Members of the relevant results of the fourth session of the WMO Consultative Meetings on High-level Policy on Satellite Matters.

ACTION PROPOSED

CGMS Members to note the deliberations and results of the fourth session of the WMO Executive Council Consultative Meetings on High-level Policy on Satellite Matters and comment as appropriate.

DISCUSSION

Introduction

1. The fourth session of the WMO Consultative Meetings on High-level Policy on Satellite Matters (CM-4) met in Geneva, 27-28 January 2004 and the relevant results of that meeting are contained in this document. Other results can also be found in WMO WP-6. This document contains information related towards the space component of an integrated WMO global observing system.

Towards the space component of an integrated WMO global observing system

2. CM-4 recalled that, at earlier Consultative Meetings, the space agency representatives had encouraged WMO to move towards a more integrated framework for the space-based components of the observing systems of the various WMO programmes.

3. It was pleased, therefore, to learn that Cg-XIV had specifically assigned as an overall objective of the WMO Space Programme "To review the space-based components of the various observing systems throughout WMO Programmes and WMO-supported Programmes, e.g., WWW's GOS, AREP's GAW, GCOS, HWR's WHyCOS, JCOMM's Implementation of GOOS, etc., with a view towards the development of an integrated WMO global observing system that would encompass all present observing systems."

4. CM-4 agreed that the development of an 'integrated WMO global observing system' was particularly timely in the context of the initiative now underway, through the ad hoc GEO mechanism to achieve high-level international (intergovernmental and inter-agency) commitment to the implementation, over a ten-year period, of a "comprehensive, coordinated and sustained Earth observation system or systems". An effectively integrated WMO global observing system covering the atmosphere and those aspects of the ocean and land surface that fall within the WMO mandate would go a long way towards providing the nucleus of the more comprehensive earth observation system that is the goal of the GEO initiative.

5. CM-4 recognized that the responsibilities of the Consultative Meetings extended only to the space-based component of such an integrated WMO global observing system. It felt satisfied, however, that, given the long history of effective integration of the surface-based and space-based sub-systems of the Global Observing System of the World Weather Watch, a similar level of coordination and integration between the surface-based and space-based components of an integrated WMO Global Observing System would follow naturally from the WMO Processes.

6. It was considered that the basic architecture of the space-based sub-system of the WWW GOS would extend logically to the space-based sub-system of an integrated WMO global observing system, and it would consist of three constellations and their associated ground segments based on the WWW sub-system of:

- operational meteorological polar orbiting satellites;
- operational meteorological geostationary satellites; and
- environmental Research and Development satellite constellations.

7. CM-4 agreed that the main challenge for WMO in giving effect to the decision of Cg-XIV would be in putting in place effective coordination and integration mechanisms across the various WMO observing systems serving the needs of the wide range of user communities represented by the individual programmes in areas such as agriculture, water resources, oceanographic and marine meteorological services, weather predication and climate research and so on. It considered, however, that this process would be greatly facilitated by the fact that the WMO Space Programme has been constituted not just as a Major WMO Programme but also as a cross-cutting

programme with the resulting requirement to take a comprehensive view of the space aspects of all other WMO programmes.

8. While recognizing that the detailed arrangements for cross-programme coordination and integration, including those relating to the staffing of the WMO Space Programme Office for this purpose, had still to be worked out, CM-4 lent its support to the concept of the space-based component of an integrated WMO global observing system composed of the space-based components of the observing systems of the various WMO and WMO-co-sponsored programmes, grouped in terms of the major user communities they serve.

9. Given that, while WMO was responsible for almost all aspects of the observation and information/service provision for the atmosphere, it shared the responsibility for the ocean and land surface (including water resources) with many other international agencies and conscious, in particular, of the cross-cutting nature (ocean atmosphere, ocean and land surface) of the observation needs for natural disaster reduction and climate, CM-4 agreed on the importance of careful and sensitive design of the integrated WMO observing system structure. It welcomed the fact that, in line with its long established role in coordination of the WWW GOS, the WMO Commission for Basic Systems (CBS) had been assigned the responsibility of WMO lead Technical Commission for the WMO Space Programme.

10. CM-4 looked forward, therefore, to CBS development in consultation with all other relevant WMO and co-sponsored bodies, of the space-based component of the integrated WMO global observing system on the basis of space-based observation components for three earth-system domains and two cross-cutting sets of requirements as follows[?]:

- (1) the atmosphere, including sub-components meeting the needs of:
 - (a) the operational WWW and the various weather, climate and related applications and services based on it, including those of aviation meteorology (articulated through the Commission for Aeronautical Meteorology) and agricultural meteorology (articulated through the Commission for Agricultural Meteorology);
 - (b) weather research such as for the World Weather Research programme as articulated through the Commission for Atmospheric Sciences;
 - (c) atmospheric chemistry, such as for the Global Atmosphere Watch, as articulated through the Commission for Atmospheric Sciences;
- (2) the ocean, to meet the needs of the Global Ocean Observing System (GOOS) and the oceanographic and marine meteorological services and research based on it, as articulated through the joint WMO-IOC Joint Technical Commission on Oceanography and Marine Meteorology (JCOMM);

[?] An alternative "sub-system" structure would be:

- (1) Operational meteorology (CBS, CAeM, CAgM ..)
- (2) Operational Oceanography (JCOMM)
- (3) Operational hydrology (CHy)
- (4) Atmospheric Research (CAS -AREP)
- (5) Climate (including Climate Research) (GCOS, CCI, WCRP)
- (6) Natural Disaster Reduction

- (3) the land surface and fresh water, to meet the needs of:
 - (a) the World Hydrological Cycle Observing System (WHyCOS) and the Hydrology and Water Resource Programme (HWR) as articulated through the Commission for Hydrology (CHy),
 - (b) the WMO-co-sponsored Global terrestrial Observing System (GTOS),
 - (c) agricultural meteorology as articulated through CAgM,
- (4) climate, incremental to, and integrating across, the domain-based observing systems, as coordinated through the Steering Committee for the WMO co-sponsored Global Climate Observing System(GCOS) to meet the needs of:
 - (a) climate research, articulated through the WCRP,
 - (b) climate policy, articulated through SBSTA, COP, based on information from IPCC, etc.
 - (c) climate monitoring and services, articulated through the Commission for Climatology (CCI), (CAgM), (CHy);
- (5) natural disaster reduction, incremental to, and integrating across, the domain-based observing systems and composed of those space-based instruments and missions providing geophysical and related information needed to support the WMO Natural Disaster Prevention and Mitigation Programme.

11. CM-4 noted that the practical implementation of the proposed integration would pose significant challenges in matrix management but it was confident that WMO and the entire space-based earth observation stakeholder community would benefit from WMO taking a more integrated and coordinated approach.

12. CM-4 was also informed of the new initiative by the WMO Secretary-General to establish matrix management within the WMO Secretariat. Furthermore, one potential area for matrix management would be for observations. It was presently intended that the World Weather Watch and WMO Space Programme work together towards the consolidation of all observing systems found in the various WMO programmes into an integrated WMO global observing systems. CM-4 noted that this effort towards consolidation of observations, when coupled with the proposed integration of the space-based components of the various observing systems, and co-led by the World Weather Watch and WMO Space Programme would provide the necessary emphasis on the fusion of in situ and satellite data. CM-4 was strongly in favour of such an approach and urged the WMO Secretary-General to seek measures to implement it. It was an important concept and very timely considering activities related to the ad hoc Group on Earth Observations. The consolidation within the space-based components would help accelerate and align research and development programmes with operational services. With regard to the proposed restructuring of the CBS Expert Team structure, the session strongly supported the core group of satellite expertise approach.

13. The recommendations of CM-4 towards the space component of an integrated WMO global observing system will be considered by the fifty-sixth session of the WMO Executive Council to be held in Geneva, Switzerland, 8-18 June 2004.