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**REPORT OF THE ACTING PRESIDENT
ON EC-LVI**

(Submitted by Dr. R. Canterford, Acting President of CIMO)

Summary and purpose of document

This document provides a report on the attendance of Dr. Canterford at Fifty-Sixth Session of the WMO Executive Council (EC-LVI), 8-18 June 2004 as the acting President of the Commission for Instruments and Methods of Observation (CIMO).

Action proposed

Note the IMOP Report to Executive Council

I. Background

1. As acting President of CIMO, I attended the WMO Executive Council Fifty-Sixth Session and the associated Meeting of Presidents of Technical Commissions, Geneva, June 8-18, 2004. At CIMO XIII in September 2002 I was re-elected as vice president. In June 2003 at Congress, the president of CIMO, Dr Srivastava, resigned to take up a position on EC. I subsequently became acting President and Dr John Nash of the UK Meteorological Service was elected vice president of CIMO by a correspondence vote. At the EC meeting I presented the work of the WMO Instruments and Methods of Observation Programme during the past year. I also reported on the effectiveness of the new structure for the management of CIMO activities, introduced for this intersessional period.

II. Introduction of our IMOP Status Report (Document 3.2)

1. The Executive Council expressed its gratitude to all CIMO Members for their valuable contributions to the achievements of the Commission, particularly in providing the experienced experts for, and hosting of, specific meetings carried out within the last twelve months.

III. IMOP/CIMO

1. The purpose of the IMOP is to set technical standards and quality control procedures and to provide guidance for the use of meteorological instruments and observation methods. The objectives of this programme are:
 - a. to promote development, documentation and the world-wide standardization of meteorological and related geophysical and environmental instruments and methods of observation to meet agreed user needs for data; and
 - b. to ensure the effective and economic use of instruments and methods of observation under varying working conditions and in differing technical infrastructures, by providing technical standards, guidance material, performance specifications, technology transfer and training assistance.
2. The programme fosters development of new and improved instruments, observation methods, data reduction, and quality control techniques, and embraces all instrumentation including that used for remote sensing.

IV. New Structure as Reported to EC-LVI

1. I described the new CIMO structure which comprised the Management Group (MG) overseeing three Open Programme Area Groups (OPAGs) – Surface Observations Technology, Upper Air Observation Technology and Capacity Building. The three OPAGs oversaw the activities of various expert teams (ETs).
2. The EC noted that steps have been taken by the relevant CIMO expert teams and international organizing committees for surface and upper-air intercomparisons to proceed with the WMO intercomparisons according to the Provisional programme of future WMO intercomparisons set-up by CIMO-XIII. This work is essential for other WMO Programmes and Commissions such as CCI and CBS who rely heavily on accurate homogenous measurements.

V. Major achievements Reported to EC-LVI

1. Standardization

- a. ET on Upgrading the Global Radiosonde Network
 - i. To June 2004, the development of RR had not been successfully achieved.
 - ii. Designation of "Higher Quality Radiosonde (HQR)" be adopted for the best operational and research radiosondes, combination of which will be used for referencing.
 - iii. ET developed the requirements for HQR that should ensure data comparability among variety of RAOB systems and permit accurate calibration of remote sensing systems.
 - iv. Next WMO Radiosonde intercomparison should evaluate the performance of new generation high quality radiosondes.
 - v. GCOS reference stations should use HQR coupled with additional sensor packages (three thermistor references, hygrometer).

- b. ET on Surface-Based Instrument Intercomparisons.
 - i. The WMO Laboratory Intercomparisons of Rainfall Intensity (RI) Gauges was held in the recognized laboratories of the Royal Netherlands Meteorological Institute, Météo France and University of Genova, September 2004 - March 2005.
 - ii. The WMO Field Intercomparison of RI Measuring Instruments, to be held in locations subject to high intensity rainfall events, is provisionally planed from April 2005 until December 2005.
 - iii. The WMO Intercomparison of Thermometer Screens/Shields in conjunction with Humidity Measurements, to be held in two sites, one in an arctic region and one in tropical or desert regions, may start in mid 2005 (in an arctic region) and in the beginning of 2006 (in a tropical/desert region). Their duration may vary from 6 to 12 months depending on the region.

- c. ET/IOC on Surface-Based Instrument Intercomparisons.
 - i. The Tenth International Pyrheliometer Comparison (IPC-X) and conjoint Regional Pyrheliometer Comparisons are being organized for September/October 2005. Preparations have been postponed until the financial resources are identified.

- d. ET/IOC on Upper-Air Systems Intercomparisons.
 - i. I advised EC of the offer from Mauritius to host the WMO Intercomparison of Radiosonde Systems in February 2005. This has since been completed and a preliminary report has been prepared.
 1. A Special Project Team was established, comprising the ET/IOC Chairman, Project manager, Radiosonde Comparison Expert and Data Manager, supported by the local support staff.
 2. Recognized WRSKOMP software to be used for data acquisition, processing, analysis and archiving of intercomparison data.
 3. New strategy for publication of results to address the concern with the length of time to achieve publication of results.
 4. Detailed operational procedures agreed.
 5. Offered support from HMEI and participating manufactures.
 - ii. The EC agreed that, following the WMO Intercomparison of GPS Radiosondes (Brazil, 20 May – 10 June 2001), manufacturers of high quality radiosondes identified the origins of production faults and inherent system problems and

developed new designs that need to be inter-compared in 2005, before being widely used in observing networks.

2. Capacity Building

- a. Much work has been done on the update of the Guide to Instruments and Methods of Observation with thirty-eight experts from thirteen countries working on the update since 2000. The seventh edition planned for publication in an electronic version in the first half of 2006.
- b. Since EC-LV five IOM Reports have been published in CD-ROM format and on the CIMO/IMOP website, indicating great interest and significant resources by CIMO experts. These reports include:
 - i. IOM 80 (TD 1197) - WMO Catalogue of Radiosondes and Upper-Air Wind Systems in Use by Members in 2002, and Compatibility of Radiosonde Geopotential Measurements for period from 1998 to 2001;
 - ii. IOM 79 (TD 1196) - Operational Aspects of Wind Profiler Radars;
 - iii. IOM 78 (TD 1160) - Algorithms Used in Automatic Weather Stations;
 - iv. IOM 77 (TD 1159) - Road Managers and Meteorologists over Road Meteorological Observations; and
 - v. IOM 76 (TD 1153) - WMO Intercomparison of GPS Radiosondes – Executive Summary (Alcantara, Brazil, 20 May – 10 June 2001).

The EC especially welcomed IOM Report No. 80 “WMO Catalogue of Radiosondes and Upper-Air Wind Systems in use by members in 2002 and Compatibility of Radiosonde Geopotential Measurements for period from 1998 to 2001”, by John Elms, United Kingdom, stating that it significantly contributed into understanding of compatibility of current upper-air observations.

- c. I reported that significant progress had been made in the area of Training and Capacity Building. In this regard, following the success of the Training Workshop on Upper-air Observations for RA I (Africa) English speaking countries, Gaborone, Botswana, 7-11 April 2003, a similar training workshop was organized for RA I (Africa) French speaking countries and hosted by Morocco Meteorological Service in Casablanca from 1 to 5 December 2003. These Training Workshops were aimed at improving the knowledge and skills of senior operational personnel in-charge of the national upper-air networks and were strongly supported by the HMEI through a provision of ground equipment, radiosondes and lecturers.
- d. RICs
 - i. Thirteen RICs are operational in spite of constraints due to non availability of resources and lack of well trained staff.
 - ii. With a view of strengthening of RICs the process of their evaluation was initiated:
 1. Initial assessment of RICs through a Questionnaire;
 2. Review of TOR and Evaluation Criteria for RICs under preparation;
 3. Evaluation visits planned in 2005.
- e. I reported that Romania had offered to host the technical conference TECO-2005 and the exhibition of instruments and equipment, METEOREX-2005, which were considered the major CIMO events for information exchange and capacity building. And here we are!

VI. Future Plans

1. High priority issues that I presented to EC were:
 - a. Develop performance measures to demonstrate continuous improvement in the quality of observations;
 - b. Conduct instrument intercomparisons;
 - i. The EC agreed to organize WMO intercomparisons according the CIMO-XIII Plan and, recognizing that successful conduct of WMO intercomparisons depends mainly on the extra-budgetary resources, urged Members and the Association of the Hydro-Meteorological Equipment Industry (HMEI) to actively support and participate in the above instruments intercomparisons.
 - c. Contribute to the review and update of WMO technical regulations. Guides and other material related to quality management and standardization of observations;
 - d. Evaluate existing RICs and review their terms of reference;
 - e. Facilitate standardization of measurements of long-wave radiation;
 - f. Automation of manual, visual and subjective observations; and
 - g. Strengthen links with relevant international organizations.