

WORLD METEOROLOGICAL ORGANIZATION

CIMO/MG-2/Doc.2.2(5)
(1.V.2005)

COMMISSION FOR INSTRUMENTS AND METHODS
OF OBSERVATION

ITEM: 2.2

CIMO MANAGEMENT GROUP
Second Session

Original: ENGLISH only

Bucharest, Romania 2 – 3 May 2005

REPORT ON THE OPAG-SURFACE
(Submitted by J.P. van der Meulen, OPAG-SURFACE Co-Chair)

Summary and purpose of document

This document is a note to the CIMO Management Group on the status and ongoing actions .

Action proposed

The Management Group is invited to consider the notes and to for the discussion on the working plan and management issues.

I. Background

Within the OPAG on Surface Observation Technology (OPAG Surface) three expert teams are active:

A.1 Expert Team on Surface Technology and Measurement Techniques (ET ST&MT)

A.2 Expert Team on Surface-based Instrument Intercomparisons and Calibration Methods (ET SII&CM)

A.3 Expert Team on Meteorological Radiation and Atmospheric Composition Measurements (ET MR&ACM)

For each ET the activities and foreseen deliverables are given in their own Term of Reference. (see Annex) For each ET there is a work plan with a timetable and deadlines for the deliverables.

II. Status

In summary, the following activities or actions are organized:

A.1 ET ST&MT: A first session of the ET took place from 13-16 October 2004 during with the following issues were on the agenda:

- Standards For Automated Visual And Subjective Observations

Major issues were Systems measuring present weather, Standardization of algorithms for AWSs, Standards for automation of manual, visual and subjective observations , and Possible alternative methods for replacing some traditional observations

- The State-Of-The-Art Of Instruments And Automated Surface Observing Systems

Major issues were: Instrument development inquiry, Instruments for harsh climatological conditions, Development of siting criteria and metadata standards, and Possible means to minimize the impact on the cost of the continuous improvements of instruments

Apart from these three key items, the following items were discussed as well

- Progress Of Urban And Road Meteorological Measurements
- Quality Management Systems Procedures For Instruments And Methods Of Observation Training Activities And Training Material.

At the end of this meeting the work plan was updated. Results from the meeting, inclusive recommendations to be adopted at the next CIMO are given in the final report.

A.2 ET SII&CM: A joint first session of the Expert Team on Surface-Based Instrument Intercomparisons and Calibration Methods and the International Organizing Committee (IOC) on Surface-Based Instrument Intercomparisons was organized from 24 to 28 Nov 2003. Recommendations and decisions were made on the foreseen laboratory Intercomparison on rain intensity measurements and the following filed Intercomparison. For these intercomparisons the necessary details on the procedures to be followed were stated as well. A relevant constraint for the field Intercomparison is the requirement for high precipitation rates (100 mm/h or more) - to find an appropriate site which confirms to this requirements is still a point of discussion within the IOC.

Also the foreseen combined Intercomparison of thermometer screens/shields, in conjunction with humidity measurements, in various climatic regions was discussed as well. It was stated that priority should be given to thermometer screen intercomparisons in artic and tropical regions, because of past intercomparisons already conducted in temperate climatic regions. For the Intercomparison in the tropical region should be organized by a RIC with possible assistance by any RIC experienced in intercomparisons. The recommended time schedule for the intercomparisons is:

- RI lab. Intercomparison: 2004-2005; draft final report expected July 2005, publication of the final report before May 2006.
- RI field Intercomparison: to begin after the draft final report of the RI lab. Int. is available (July 2005), report end of 2006
- T&U Intercomparison: To start in 2006, duration at least 12 months.

At the end of this meeting the work plan was updated. Results from the meeting, inclusive recommendations to be adopted at the next CIMO are given in the final report.

A.3. ET MR&ACM: In line with the current work plan, the Tenth International Pyrheliometer Comparison (IPC-X) will be held at the World Radiation Centre (WRC) in Davos from 26 September to 14 October 2005. (The IPC-X is primarily intended for the calibration of standard pyrheliometers of all WMO Regional Radiation Centres). National Standard Pyrheliometers that are maintained at National Radiation Centres (NRC), will also be compared against the WSG during that period. Moreover, the WRC plans to organize a scientific symposium and a workshop during the IPC-X on meteorological radiometry and atmospheric radiation. If required, experts working at RRCs will be trained in a workshop on how to prepare, carry out, and evaluate the results of a RPC.

ANNEX

A. OPAG on Surface Observation Technology			
No.	OPAG-SURFACE TASKS	OUTPUT	Responsible Expert Team
1.	In cooperation with HMEI, report and recommend standards for automated visual and subjective observations		A.1
	a) Systems measuring present weather (including clouds, icing, state of the ground, lightning and thunderstorms)	Reviewed past recommendations	
	b) Standardization of algorithms for AWSs	Report on methods used by current systems, including proposal on standardization	
	c) Standards for automation of manual, visual and subjective observations	Documentation of proposed standards	
2.	Report to Members on the state-of-the-art of Instruments and Automated Surface Observing Systems (ASOS)		A.1
	a) Review and report on development of instruments and ASOS	Instrument Development Inquiry Report	
	b) Provide guidance on implementation in harsh climatological conditions, on siting and on metadata standards, and update WMO regulations	<ul style="list-style-type: none"> • Update relevant IOM Reports • Update of relevant chapters of the CIMO Guide • Monitoring reports of activities ensuring consistency of CIMO Guide with Guide of CCI, CHy and AgM, and with Manual on GOS and Technical Regulations 	
3.	Undertake and evaluate instrument intercomparisons		A.2
	a) Laboratory intercomparisons of rainfall Intensity gauges, in two independent certified laboratories (start 2003)	<ul style="list-style-type: none"> • Proposal for update of CIMO Guide (rainfall intensity) • Published results of the intercomparisons 	
	b) Combined intercomparison of thermometer screens/shields, in conjunction with humidity measurements, in various climatic regions (start 2004)	<ul style="list-style-type: none"> • Published results of the intercomparisons 	

	c) In collaboration with CCI, JCOM, CAS and HMEI address the data homogeneity issue	<ul style="list-style-type: none"> • Report to network managers and RAs • Proposal to update CIMO Guide on the role of intercomparisons in data homogeneity 	
4.	Facilitate further activities related to meteorological radiation measurements		A.3
	a) IPC-X, 2005, WRC, Switzerland	<ul style="list-style-type: none"> • Concept for instrument comparisons • Published results of the comparison 	
	b) RPCs, 2004-2006, either in conjunction with IPC-X or at RPCs concerned	<ul style="list-style-type: none"> • Concept for instrument comparisons • Published results of the comparison 	
	c) Liaise with the World Climate Research Programme on matters related to Baseline Surface Radiation Network and inform Members of developments	Report to Members on BSRN	
	d) Review the operational practice associated with total ozone measurements (by consultant)	Recommendations for a standard automated ozone observational site	
	e) Review operational practice associated with UV and, aerosol optical depth measurements	<ul style="list-style-type: none"> • Report to Members on operational practice • Recommendation on update as necessary 	
	f) Monitor the efforts of the CAS Scientific Steering Committee on UV Measurements	Updated Ch 7, "Measurement of radiation", of the CIMO <i>Guide</i>	
	g) Develop further the establishment of a World Standard Group of absolute long-wave radiometers	A World Infrared Radiometer Calibration Center established	
	h) Coordinate the dissemination of World Radiometric Reference (WRR) factors to regional and national radiation standards	A World Infrared Radiometer Calibration Center established	
	i) Initiate activities so that high quality solar radiation measurements may be widely guaranteed in all national radiation networks through training courses and in the establishment of networks in areas with a low density of radiation stations	Support provided and documented to National Radiation Centers (NRCs)	
j) Provide technical/scientific guidance in the establishment and continuing quality assurance of WIRCC Davos	A World Infrared Radiometer Calibration Center established and QA guaranteed		
5.	Report on progress of urban and road meteorological measurements		A.1
a) Monitor the emerging requirements for measurements for road meteorological measurements (US to review draft of Mr. Ladent)	<ul style="list-style-type: none"> • Technical recommendations for standards and practices on road meteorological measurements • Updated CIMO Guide 		
b) Explore further difference in perception of WMO standards for synoptic stations at road meteorological observing stations, especially in the light of the requirements of modern road monitoring and traffic management systems			

	<p>c) Monitor the emerging requirements for measurements for urban meteorological measurements (draft by Prof Oke)</p>	<ul style="list-style-type: none">• Technical recommendations for standards and practices on urban meteorological measurements• Updated CIMO Guide	
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