

WORLD METEOROLOGICAL ORGANIZATION

**COMMISSION FOR INSTRUMENT AND
METHODS OF OBSERVATION
*OPAG-SURFACE***

**EXPERT TEAM ON SURFACE TECHNOLOGY AND
MEASUREMENT TECHNIQUES
*First Session***

Geneva, Switzerland, 13-16 October 2004

CIMO/OPAG-SURFACE/
ET ST&MT-1/Doc.8(1)

(1.IX.2004)

ITEM: 8

Original: ENGLISH ONLY

WORK PLAN

(Submitted by the Secretariat)

Summary and purpose of document

This document contains a draft Work Plan of ET on ST&MT.

Action proposed

The meeting is invited to examine the draft Work Plan for ET on ST&MT and to decide on the final Work Plan.

**The Work Plan of the Expert Team on Surface Technology and Measurement Techniques
(ET on ST&MT)**

1. Based on the CIMO-XIII decisions, the CIMO Management Group (CIMO-MG) decided on the Milestone Plan to provide a basic guidance for planning of CIMO activities. The Milestone Plan is based on CIMO OPAGs' structure and their respective TOR. The Plan should assist co-chairpersons of OPAGs and leaders of ETs in preparing their Work Plans.
2. Draft Work Plan of the Expert Team, as presented in the Annex, takes into account the Tasks to be undertaken by the CIMO OPAGs, the TOR of Expert Teams and the CIMO-MG Milestone Plan.

ANNEX

Draft WORK PLAN
Expert Team on Surface Technology and Measurement Techniques
(2003-2006)

No.	Task description	Person responsible	Action	Deadline	Deliverables	Deadline
1	In cooperation with HMEI, report and recommend standards for automated visual and subjective observations					
1 a)	Systems measuring present weather (including clouds, icing, state of the ground, lightning and thunderstorms)	Alain HEIMO Jitze van der MEULEN	<ol style="list-style-type: none"> 1. Review the past recommendations 2. Review the current guidance material and practices [see note 1] 3. Develop recommendations for standards 	<p>Jan. 05</p> <p>Jan. 05</p> <p>Jun. 05</p>	<ul style="list-style-type: none"> • Report on reviewed past recommendations • IOM report on current standards and practices • Update CIMO Guide (present weather chapter) • Recommendations to CIMO-XIV 	<p>Feb. 05</p> <p>Sep. 05</p> <p>Dec. 05</p> <p>May 06</p>
1 b)	Standardization of algorithms for AWSs (including algorithms for the automatic assessment of cloud base height and cloud amount)	Stuart GOLDSTRAW Jitze van der MEULEN Mike EDWARDS [see note 3]	<ol style="list-style-type: none"> 1. Review the available algorithms, presented in IOM 78 2. Study the references from this review 3. Develop recommendations for standards [see note 2] 	<p>Sep. 04</p> <p>Jun. 05</p> <p>Feb. 06</p>	<ul style="list-style-type: none"> • IOM Report on methods used by current systems, including proposal on standardization • Report to EC and other TC's [see note 2] • Recommendations to CIMO-XIV 	<p>Sep. 05</p> <p>Nov. 05</p> <p>May. 06</p>
1 c)	Standards for automation of manual, visual and subjective observations	Bruce HARTLEY	<p>Review the current standards and practices [see note 1]</p> <ol style="list-style-type: none"> 1. Develop recommendations for standards 	<p>Sep. 04</p> <p>Jun. 05</p>	<ul style="list-style-type: none"> • IOM Report on methods used by current systems, including proposal on standardization • Report to CIMO-XIV 	<p>Sep. 05</p> <p>May. 06</p>

No.	Task description	Person responsible	Action	Deadline	Deliverables	Deadline
1 d) [see note 4]	For those manual, visual and subjective observations that may not be possible to automate in the foreseeable future, possible alternative methods should be explored for replacing some traditional observations which then could be terminated	Bruce HARTLEY	<ol style="list-style-type: none"> 1. Identify those manual, visual and subjective observations that may not be possible to automate in the foreseeable future [see note 1] 2. Explore possible alternative methods for replacing some traditional observations 	<p>Jun. 05</p> <p>Dec. 05</p>	<ul style="list-style-type: none"> • IOM Report on possible alternative methods for replacing some traditional observations 	Feb. 06
2 Report to Members on the state-of-the-art of Instruments and Automated Surface Observing Systems (ASOS)						
2 a)	Review and report on development of instruments and ASOS	Kjell HEGG Jitze van der MEULEN	<ol style="list-style-type: none"> 1. Instrument Development Inquiry No. 8 (IDI8) 2. Analyze replies from members and HMEI on ID 	<p>Nov. 05</p> <p>Dec. 05</p>	<ul style="list-style-type: none"> • IOM Report on Instrument Development 	Feb. 06
2 b)	Provide guidance on implementation in harsh climatological conditions, on siting and on metadata standards, and update WMO regulations [see note 5]	Yu Feng HU Jitze van der MEULEN + Alain HEIMO (severe weather arctic) Jacob MISHAELY (severe weather deserts) Jon WIERINGA (metadata and siting) Ernest RUDEL (metadata and siting)	<ol style="list-style-type: none"> 1. Review available guidance and practices related to implementation in harsh climatological conditions [see note 6] 2. Review available guidance and practices related to siting 3. Review available guidance and practices related to metadata [see note 7] 4. Recommend standards on the above (1-3) 	<p>Feb. 05</p> <p>Feb. 05</p> <p>Feb. 05</p> <p>Dec. 05</p>	<ul style="list-style-type: none"> • Updated relevant IOM Reports • Updated relevant chapters of the CIMO Guide • Proposals for consistency of CIMO Guide with Guide of CCI, CHy and AgM, and with Manual on GOS and Technical Regulations • Report to CIMO-XIV 	<p>Dec. 05</p> <p>Dec. 05</p> <p>Feb. 05</p> <p>May. 06</p>

No.	Task description	Person responsible	Action	Deadline	Deliverables	Deadline
2 c)	Consider possible means to minimize the impact on the cost of the continuous improvements of instruments [see note 8]	Yu Feng HU Jitze van der MEULEN Jacob MISHAELY	1. Study the cost/benefit impact of the continuous improvements of instruments 2. Propose possible means to minimize the impact on the cost	Feb. 05 Apr. 05	• IOM Report of the cost impact • Report CIMO-XIV	June. 05 May. 06
3	Report on progress of urban and road meteorological measurements [see note 9]					
3 a)	Monitor the emerging requirements for measurements for road meteorological measurements	Larry SENN Anna BRATOEVA	In cooperation with the user community monitor the requirements	Feb. 05	• IOM Report on user requirements	Jun. 05
3 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	Anna BRATOEVA Larry SENN	1. Study the difference in perception of WMO standards 2. Develop recommendations for standards and practices	Jun. 05 Sep. 05	• Technical recommendations for standards and practices on road meteorological measurements • Updated CIMO Guide	Nov. 05 Dec. 05
3 c)	Monitor the emerging requirements for measurements for urban meteorological measurements	Tim OKE Anna BRATOEVA Jon WIERINGA (siting)	1. In cooperation with the user community monitor the requirements 2. Develop recommendations for standards and practices	Jun. 05 Sep. 05	• Technical recommendations for standards and practices on urban meteorological measurements • Updated CIMO Guide	Nov. 05 Dec. 05
4	Provide advice on <i>Quality Management Systems</i> procedures for instruments and methods of observation (based on the CIMO Guide) and implement links with relevant international organization active on this area [see note 10]					
4 a)	Develop performance measures to demonstrate continuous improvement in the quality of observations	Stuart GOLDSTRAW	1. In collaboration with ET C.2, develop basic procedures for quality management of observations, instrument maintenance, calibration and operational practices	Sep. 04	• IOM Report on Basic procedures for quality management of observations, instrument maintenance, calibration and operational practices	Feb. 05

No.	Task description	Person responsible	Action	Deadline	Deliverables	Deadline
4 b)	Contribute to the review and update of WMO Technical Regulations, Guides and other material related to Quality Management and standardization of observations	Stuart GOLDSTRAW	o In collaboration with ET C.2, prepare proposal for relevant updates of CIMO Guide	Jun. 05	• CIMO Guide updated	Dec. 05
			o In collaboration with ET C.2, prepare proposals for update of WMO Technical Regulations and Guides	Jun. 05	• Proposals submitted to CIMO-XIV	May. 06

Notes

- Reference can be made to a recent report from Eumetnet, "PWS-SCI, *Exploratory actions on automatic present weather observations*" with statements relevant for 1 a) to 1 d). Another relevant reference will be IOM 73, "*WMO Intercomparison of Present Weather Systems*".
- Recommended by the Conjoint WMO CAeM Session/ICAO Meteorological Division Meeting EC-LV has approved the following recommendation (Resolution 10 (EC-LV)):

Recommendation 2/4 - Development of standard algorithms for the processing of cloud base height and cloud amount to be used in the automation of the aeronautical meteorological observations (That WMO, in coordination with ICAO, investigate the feasibility of creating standard algorithms for the processing of cloud base height and cloud amount taking into account the different aerodrome layouts and the availability of sensors, with a view to developing such a standard algorithm.) - *These algorithms, if and when created should be reflected in the appropriate ICAO and WMO documents including the proposed manual on the use of automatic meteorological observing systems at aerodromes called for by Recommendation 2/2 (Recommendation 2/2 - Development of a manual on the use of automatic meteorological observing systems at aerodromes).*

On October 3th, 2003, the chair provided CAeM with information on the current state of the art referring to IOM 78 and the recommendations from CBS ET/AWS adopted by CBS (ext. 02). CAeM and ICAO have preference to adopt one standard method (using one well defined algorithm) which is in operational practice; for this purpose a study and evaluation on experiences of currently used methods should be carried out before submitting a recommendation.
- Because of the direct link with CAeM (see note 1), close co-operation with CAeM is required. For this purpose the representative of CAeM is invited to assist and stimulate communications with CAeM.
- Task No. 1 d) is after EC-LV: "*4.11 The Council noted that the automation of some manual, visual and subjective observations appeared not to be possible in the foreseeable future. If emphasized, however, that possible alternative methods should be explored for replacing some traditional observations which could then be determined, taking full benefit from technological developments.*"
- Although mentioned as one task, this item concerns in fact three rather independent tasks, each with its own responsible person.

6. Reference can be made to recent reports from Eumetnet on severe weather sensors tested in polar and mountainous climates (SWS I, SWS II). Mr Heimo, one of the authors of the reports may provide his experience on this theme. Observations in deserts require other extreme precautions and experience from those regions is welcome.
7. Within CBS, CAgM and CCI expert teams are developing meta data standards, which are welcomed by Cg-XIV. Especially input from CCI and CAgM, where actions are started already, is welcome. The representatives for both TC's are invited to provide input and stimulate synchronization with the development of standards in their TC's.
8. Task No. 2 c) is after EC-LV: *"4.4 ... The Council urged CIMO to consider possible means to minimize the cost of the continuous improvements of instruments, taking the difficulties experienced by developing countries into account."* Within this statement on *improvement of instruments* should be explained in terms of "sophistication level" rather than more reliable or less maintenance. Because of the increasing level of technological sophistication, especially for automatic computerized systems, operational use and maintenance are becoming exceptionally costly especially for developing countries.
9. Both tasks (urban and road meteorological measurements) can be interpreted as independent tasks.
10. Task 4 is covered in general by OPAG on Capacity Building. However, it is decided by the 2004 meeting of Presidents of TCs that phase 1 of the WMO QMF will focus on in-situ observing systems. As a consequence all CIMO ETs will contribute with proposals in close co-operation with the ET on RICs, QMS and Commercial Instruments Initiatives (C.2 - Person responsible: Bruce FORGAN).