

**WORLD METEOROLOGICAL ORGANIZATION**

**COMMISSION FOR INSTRUMENTS AND METHODS OF OBSERVATION**

**CIMO MANAGEMENT GROUP**

**First Session**

**Los Angeles, USA**

**13-15 February 2003**

**FINAL REPORT**



# AGENDA

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## GENERAL SUMMARY

### 1. ORGANIZATION OF THE SESSION

#### 1.1 Opening of the session

- 1.1.1 The first session of the CIMO Management Group (CIMO-MG) was opened on Thursday, 13 February 2003 at 08h00 by Mr D.C. Schiessl, Director of World Weather Watch, Basic Systems (WWW-B) Department of WMO. The list of participants is given in [Annex I](#).
- 1.1.2 Mr Schiessl welcomed members of CIMO-MG and took this occasion to wish them all the best for the year 2003. He informed participants that for some urgent preoccupations the President of CIMO, Dr S.K. Srivastava was not able to attend the meeting and asked the Vice-president, Dr R. Canterford, to chair the session.
- 1.1.3 Turning to the agenda of the session, Mr Schiessl recalled the role of CIMO-MG in guiding and managing the Commission's activities between sessions and its responsibilities for ensuring the integration of the programme areas, for strategic planning issues, for the evaluation of the progress achieved in the agreed work programme and for related necessary adjustments to the working structure in the intersessional period. With this, he stressed the new mandate of CIMO-MG, compared to the previous CIMO Advisory Group (CIMO-AWG), which now focuses more on decision-making by committee than on the traditional role of advising the president of the Commission.
- 1.1.4 Dr Canterford, the Vice-president agreed to chair the session and extended a special welcome to those who were attending this kind of meeting for the first time, namely Dr Richter, Dr Ivanov, Mr Bazira and Mr Zhou.

#### 1.2 Adoption of the agenda

- 1.2.1 The meeting adopted the Agenda as reproduced [at the beginning of this report](#).

#### 1.3 Working arrangements for the session

- 1.3.1 The session determined its working hours and the participants were informed on the local arrangements.

### 2. OUTCOME OF THE MEETING OF THE PRESIDENTS OF TECHNICAL COMMISSIONS

- 2.1 The Chairman informed the session that he participated on behalf of the President of CIMO in the Meeting of Presidents of Technical Commissions (PTCM), Geneva, 5-7 February 2003 that made some conclusions relevant to the session, as stated below.
- 2.2 In the area of Quality Management, the PTCM discussed the WMO Quality Management Framework (QMF) and made some recommendations to incorporate modifications proposed by the Inter-Commission Task Group. Upon these modifications, for example, the PTCM recommended that the WMO QMF should be developed to take into account the ISO 9000 recommended structure, but only those

elements should be used, which are necessary for the quality management system for meteorological and related data, products and services.

- 2.3 The PTCM also discussed the general proposal for cross-commission project "Marine Influences and Impacts on Lowland Agricultural and Coastal Resources". It recognized that all commissions could be involved in these activities and agreed that the new initiative should be considered as further development of approved project proposals, in particular with respect of impact on lowland resources and should be treated as a demonstration stage of the overall project. This issue will be brought to the attention of Congress.
- 2.4 In the area of WMO Mandatory Publications, the PTCM agreed that there is a need to address the issue of overlapping and duplications among the mandatory and other technical publications, a need to prepare a strategy for the transition to electronic publishing, and a need to prepare a plan for updating WMO mandatory publications and other publications within the responsibilities of technical commissions. In this regard, the presidents were asked to provide names of publications to be revised and related time schedules to the Secretariat as soon as possible.

### **3. FOLLOW-UP OF THE DECISIONS OF CIMO-XIII**

#### **3.1 Review of the Tasks to be undertaken by the OPAGs**

- 3.1.1 CIMO-MG1 noted that the thirteenth session of the Commission for Instruments and Methods of Observation (CIMO-XIII) had requested the OPAG co-chairpersons to ensure that specific work areas, described in the corresponding parts of the Final Report of the CIMO-XIII (WMO-No.947), were adequately addressed. For this reason, the Secretariat prepared a document (Doc.2.1) in which the Tasks described in the Final Report and not included in the list of Tasks of PINK 13 "Future working structure of the Commission, establishment of groups and nomination of experts", were added to the proposed Tasks to be undertaken by the OPAGs in the intersessional period for CIMO-MG consideration.
- 3.1.2 CIMO-MG was of the opinion that the impressive number of tasks proposed by CIMO-XIII are beyond the resources currently available to CIMO-MG. It therefore decided to structure the tasks by priority and suggested that Expert Teams (ETs) be charged, in the next period, with only the high priority tasks. However, by the middle of the intersessional period, CIMO-MG will analyze the deliverables of ETs and resources available and will make the necessary adjustments. For this reason a meeting of the CIMO-MG should be planned at the beginning of 2005.
- 3.1.3 The approved list of tasks to be undertaken by CIMO OPAGs in the next period is presented in [Annex II](#). For every task, a decision was made on the expected outputs and the period needed to achieve those outputs. In that way, Annex II also represents the CIMO OPAGs Milestone Plan ([see also Item 3.4](#)).

#### **3.2 CIMO Structure and Terms of Reference of Expert Teams**

- 3.2.1 The thirteenth session of the Commission for Instruments and Methods of Observation requested the CIMO-MG to "Keep under review the internal structure of the Commission and make adjustment, as necessary" and to "Keep under review the Terms of Reference (TOR) of Expert Teams and make necessary adjustment".

3.2.2 Based on the mandate given by CIMO-XIII to its President and Management Group and based on the revised Tasks to be undertaken by the CIMO OPAGs, introduced in [Annex II](#), the CIMO-MG decided on the structure of CIMO OPAGs and the corresponding TORs of CIMO Expert Teams. Nine Expert Teams (three for each OPAG) were defined and tasks were allocated to them as presented in [Annex III](#).

### **3.3 Composition of Expert Teams**

3.3.1 CIMO-MG recalled the decision of CIMO-XIII that the essential criteria for establishing ETs and defining their membership were the achievement of the identified tasks and the assessment of how they should be implemented.

3.3.2 Reference was made to CIMO-XIII that noted a preliminary list of experts proposed to actively support the working programme of the Commission and underlined the open nature of the OPAGs, meaning that any interested expert could become a member of an OPAG. The Commission also welcomed Members to propose additional experts, who would be suitable for the tasks identified by the Commission, prior to the first meeting of the Management Group. The Secretary-General, in his letter dated 4 November 2002, asked Permanent Representatives of Members of WMO to review their earlier nominations of experts in view of the tasks set up by the Commission. The result of the review of the nominations was prepared in Document 2.3(1) and constituted the pool of experts for the composition of ETs. In some cases the CIMO-MG felt that additional expertise may be needed for satisfactory completion of the grand-scale set of tasks of CIMO and decided to include in the membership of ETs experts outside the pool and requested the Secretariat to communicate with the respective Permanent Representatives to seek their concurrence.

3.3.3 The CIMO-MG stressed the need to establish links to representatives of other Technical Commissions and relevant International Organizations and Groupings and made relevant proposals in the membership of individual ETs. It requested the Secretariat to take action to request or confirm their representatives in CIMO ETs accordingly.

3.3.4 Based on the mandate given by CIMO-XIII to its President and the Management Group the membership of the Expert Teams was determined as presented in [Annex IV](#). The ET Chairpersons will have to work task oriented and to ensure the timely output of the deliverables. Further, it was stressed that the established ETs will not be standing teams but its membership is task dependent. The mid term review at the end of 2004 will reconsider the composition. The CIMO-MG requested the co-chairpersons of CIMO OPAGs to facilitate early activation of the work of ETs on agreed priorities.

### **3.4 Milestone Plan and Working Mechanism for the Expert Teams and OPAGs**

#### ***Milestone plan***

3.4.1 CIMO-XIII requested the CIMO-MG to plan, coordinate and actively manage the work of the Commission. In this regard, the Milestone Plan was prepared by the CIMO-MG to provide a basic guidance for planning of CIMO activities ([Annex II](#)) together with the Preliminary Plan of Meetings ([Annex V](#)). The Milestone Plan and the Plan of Meetings should assist co-chairpersons of OPAGs and leaders of ETs in preparing their Working Plans.

3.4.2 The construction of the Milestone Plan was based on the following assumptions:

- a) Most of ETs would be activated in the 1<sup>st</sup> half of 2003;
- b) CIMO-XIV would be held in the beginning of 1<sup>st</sup> quarter of 2007;
- c) No more than one meeting of an ET should be held in one calendar quarter;
- d) Meetings of ETs should be held only if substantial work on the allocated tasks were done and comprehensive Preliminary or Final Reports are expected to be discussed and approved by the meeting;
- e) Two major CIMO-MG meetings are planned, in the 1<sup>st</sup> quarter of 2003 and the 2<sup>nd</sup> quarter of 2006 (other meetings would be held as required, such as the one in conjunction with TECO-2005);
- f) Members of ETs on Instrument Intercomparisons are selected in a way so that those two ETs would also serve, as much as possible, as two International Organizing Committees for all WMO Intercomparisons;
- g) Final Reports of Intercomparisons should be produced within six months after completion of each intercomparison;
- h) Enough funds would be allocated by Cg-XIV for the planned activities.

#### ***Working Mechanism for Expert Teams***

- 3.4.3 The ETs work by correspondence or meetings, as necessary, to accomplish task(s) entrusted to the teams. The need for the meetings of the ETs will be considered by the MG in consultation with the Secretariat taking due note of the nature and urgency of the task(s).
- 3.4.4 Based on the Milestone Plan, an ET chair prepares the Working Plan of an ET, within two months after activation of an ET, for coordination by the responsible parent OPAG co-chairperson.
- 3.4.5 An ET chair reports regularly on the progress achieved in carrying out tasks assigned to the team. Progress Reports are produced at least once a year by the end of November of every calendar year and should be sent to the parent OPAG co-chairperson who is responsible for a particular ET, and copied to the Secretariat.
- 3.4.6 An ET should deliver its final working results within a specific time period, defined in the Working Plan of an ET, to the parent OPAG co-chairperson, and copied to the Secretariat.
- 3.4.7 All reports of the ETs will generally be accessible through the WMO/CIMO Web site or distributed through the CIMO Newsletter or by regular mail, as feasible.
- 3.4.8 ET chair may, with the approval of the CIMO-MG, draw upon CIMO experts as required to accomplish ET's tasks.

#### ***Working Mechanism for CIMO-MG***

- 3.4.9 The co-chairpersons of the OPAGs decide on an appropriate allocation of responsibilities among them for a sound management and technical guidance of the work of the OPAG area, and for a clear leadership of all ETs, including guidance and coordination of their work, reports, information distribution to interested experts, etc., and allocation of responsibilities.

- 3.4.10 Based on the Milestone Plan, the co-chairpersons of OPAGs prepare the Working Plan of the OPAGs with a clear indication of deliverables and the need for any ET meetings.
- 3.4.11 The co-chairpersons of OPAGs assist ETs in preparation of their Working Plans to harmonize CIMO Milestone Plan with Working Plans of OPAGs and ETs.
- 3.4.12 The co-chairpersons of OPAGs assess Progress Reports provided to them by the ET chairs and prepare a concise OPAG Progress Reports on all ETs within their responsibilities to the Secretariat for inclusion in the December issue of CIMO Newsletter.
- 3.4.13 The co-chairpersons assess the Final Reports provided to them by the ET chairs and prepare OPAGs Final Reports on all specific activities/tasks under their responsibilities, in the form of working documents for next CIMO session.

### **3.5 Working Plan for 2003**

- 3.5.1 It was decided that, based on the agreed Working Mechanisms for [Expert Teams](#) and [CIMO-MG](#), the ET chairs and OPAG Co-chairpersons should prepare within a defined period of time their own Working Plans. In this regard, the CIMO-MG agreed on the Format of the Working Plans ([Annex VI](#))
- 3.5.2 CIMO-MG prepared a Working Plan of CIMO for 2003 ([Annex VII](#))

## **4. CIMO GUIDE, IOM REPORTS**

### **4.1 Status and Plan for update of the *CIMO Guide***

- 4.1.1 The CIMO-MG discussed the unfavorable situation with updating the *CIMO Guide* in the past in spite of the effort of the CIMO AWG. This was mainly due to the lack of resource persons with expertise in relevant fields of *CIMO Guide* that are needed to be updated. It is expected that the newly formed Expert Team on CIMO Guide and Information Dissemination would deal with the update of the *CIMO Guide* on the highest priority level. In discussing the need for update of individual chapters it was noted that there is no proposal for update of the Chapter 3 “Quality Management” of Part III “Quality Assurance and Management of Observing Systems”. It is hoped that ET on CIMO Guide and Information Dissemination will address this issue.
- 4.1.2 A new Plan for updating of the CIMO Guide was prepared indicating the responsible persons and a time frame as indicated in [Annex VIII](#).
- 4.1.3 It was noted that updating the *CIMO Guide* is an ongoing activity, however for the sake of meeting a fixed publication date of the 7<sup>th</sup> edition there is a need to freeze amendments at some point. It was agreed that the 7<sup>th</sup> edition of the *Guide* would contain only those amendments for which a “text” is supplied by the end of April 2003. However, some flexibility may be needed. WMO Secretariat will send a reminder to those reviewers who suggested an update but have not yet supplied a proposed text.
- 4.1.4 All available proposals for revision will be reviewed and edited by the contracting consultant, Mr Pannett according to the schedule agreed in the Plan. All queries, that will inevitably come up during the editing work, will be channeled to the relevant

OPAG's co-chairpersons who themselves or through recognized experts would provide authorized answers to Mr Pannett.

- 4.1.5 "Final Edit" will be subjected to a final approval according to the Plan. The Expert Team on CIMO Guide and Information Dissemination will then authorize the "Final Edit" and submit it to the Secretariat. The ET will also check the need for changes of figures and tables or need for new ones. It was noted that original figures presented in 6<sup>th</sup> edition are only available as bit map files and cannot be edited. They may or may not be suitable for insertion 'as is' in the MS Word text. If an amendment is required, they need to be redrawn from scratch.
- 4.1.6 It was decided that a new edition be first published on the CIMO/IMOP website. A period of about six months may be allowed for comments from a wide-range of users. Their comments should be analyzed and incorporated in the 7<sup>th</sup> edition by the decision of the Expert Team in a timely manner so that the 7<sup>th</sup> edition of the *Guide* is published on a CD during 1<sup>st</sup> quarter 2006. No hardcopy is planned to be printed by WMO Secretariat.

## **4.2 Status and Plan for IOM Reports**

- 4.2.1 The lack of responsible persons affected also the preparations of IOM Reports. The only CIMO-XII related IOM Reports published are the IOM-74 and IOM-75 "Papers and Poster Presented at the WMO TECO-2000 and TECO-2002". All others were at various levels of development and needed to be either drafted or finalized and checked
- 4.2.2 It was suggested to concentrate on the IOM Reports that are CIMO-XII related and publish them all before the end of 2004 according the Plan in [Annex IX](#). The Plan also contains a proposal for CIMO-XIII related IOM reports together with responsible OPAG, format and date of publication.
- 4.2.3 It was decided that all IOM Reports will be available on the CIMO/IMOP website and will be grouped together into one or two CDs. Documents will be presented in PDF format. No printed version will be available.

## **5. ANY OTHER BUSINESS**

### **5.1 Instrument Catalogue**

- 5.1.1 The World Meteorological Instrument Catalogue (WMIC) was prepared by China Meteorological Administration (CMA) and given to the Secretariat for testing. The Secretariat provided copies to all members of CIMO-MG for testing in the environment used in Meteorological Services of Australia, India, Russian Federation, Slovakia, Uganda, UK and USA. Some problems were indicated, however installation came through in all testing environment. Based on this positive outcome, CIMO-MG authorized CMA to proceed further with distribution of WMIC to users. CMA will provide at least 400 WMIC CDs to the Secretariat for distribution to WMO Members, while CMA will distribute WMIC to manufacturers based on their own policy. CMA will inform the Secretariat if any update of CIMO/IMOP website is needed in this regard.
- 5.1.2 Reference was made to CIMO-AWG meeting that formulated proposals for enhanced capabilities of WMIC in the future including rectifying the present inconvenience and size of downloading the full document onto a local computer. It was agreed that the

Expert Team on CIMO Guide and Information Dissemination should address this issue and come out with a technical proposal to be used for the next edition.

## **5.2 TECO**

5.2.1 CIMO-MG, taking into account that CIMO-XIV is planned in 2007, decided to organize next Technical Conference in the 1<sup>st</sup> half of 2005. In this regard, CIMO-MG recalled that, for the time being, there is no invitation to hold TECO-2005. Nevertheless, it was decided that the International Programme Committee for TECO-2005 would be created as soon as possible to start the organizational work. The aspects of location, time, theme and sponsors should be addressed first.

## **5.3 Other matters**

5.3.1 Mr van der Meulen indicated that there are some activities related to CIMO-XII that are to be still followed. He will provide the list of those activities to the Secretariat to initiate action.

5.3.2 He also recalled the importance of having links to the other Technical Commissions through their representatives embedded in the CIMO Expert Teams and pointed out the valuable contributions of CAeM, CAgM, CBS and CCI provided to the previous Working Group on Surface Measurements. For example, there are concrete results of cooperation with the CBS ET on Requirements of Data from AWS in the area of the "stated accuracy requirements" and newly defined meteorological variables. For this reason more links should also be established, such as link to JCOMM, CHy and CAS.

## **6. CLOSURE OF THE SESSION**

6.1 Dr Canterford thanked the participants for their active work and their valuable contributions towards the successful outcome of the session. He also thanked the Secretariat for the excellent support provided before and during the session.

6.2 Mr Schiessl thanked the Management Group members for their active participation during the session. He also thanked Mr Dombrowsky for the host country arrangements. On behalf of the participants, he especially thanked Dr Canterford for his very effective chairmanship. He finally wished the participants every success in their work as well as a safe trip home.

6.3 The session closed on Saturday, 15 February 2003 at 15:30 hours.

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**TASKS TO BE UNDERTAKEN BY THE CIMO OPAGs  
AND  
MILESTONE PLAN**

**A. OPAG-SURFACE**

No.	OPAG-SURFACE TASKS	OUTPUTS	PERIOD
1.	<b>In cooperation with HMEI, report and recommend standards for automated visual and subjective observations</b>		2 yrs (2003-04)
	a) Systems measuring present weather (including clouds, icing, state of the ground, lightning and thunderstorms)	Reviewed past recommendations	2 yrs (2003-04)
	b) Standardization of algorithms for AWSs	Report on methods used by current systems, including proposal on standardization	2 yrs (2003-04)
	c) Standards for automation of manual, visual and subjective observations	Documentation of proposed standards	2 yrs (2003-04)
2.	<b>Report to Members on the state-of-the-art of Instruments and Automated Surface Observing Systems (ASOS)</b>		4 yrs (2003-06)
	a) Review and report on development of instruments and ASOS	Instrument Development Inquiry Report	2 yrs (2005-2006)
	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"> <li>• Update relevant IOM Reports</li> <li>• Update of relevant chapters of the CIMO Guide</li> <li>• Monitoring reports of activities ensuring consistency of CIMO Guide with Guide of CCI, CHy and AgM, and with Manual on GOS and Technical Regulations</li> </ul>	2-4 yrs (2003-06)
3.	<b>Undertake and evaluate instrument intercomparisons</b>		2-4 yrs
	a) Laboratory intercomparisons of rainfall Intensity gauges, in two independent certified laboratories (start 2003)	<ul style="list-style-type: none"> <li>• Proposal for update of CIMO Guide (rainfall intensity)</li> <li>• Published results of the intercomparisons</li> </ul>	1.5 yrs (2003-04)
	b) Combined intercomparison of thermometer screens/shields, in conjunction with humidity measurements, in various climatic regions (start 2004)	<ul style="list-style-type: none"> <li>• Published results of the intercomparisons</li> </ul>	3 yrs (2003-2005)
	c) In collaboration with CCI, JCOM, CAS and HMEI address the data homogeneity issue	<ul style="list-style-type: none"> <li>• Report to network managers and RAs</li> <li>• Proposal to update CIMO Guide on the role of intercomparisons in data homogeneity</li> </ul>	2 yrs (2004-05)

No.	OPAG-SURFACE TASKS	OUTPUTS	PERIOD
4.	<b>Facilitate further activities related to meteorological radiation measurements</b>		TBD <sup>1</sup>
	a) IPC-X, 2005, WRC, Switzerland	<ul style="list-style-type: none"> <li>• Concept for instrument comparisons</li> <li>• Published results of the comparison</li> </ul>	TBD
	b) RPCs, 2004-2006, either in conjunction with IPC-X or at RPCs concerned	<ul style="list-style-type: none"> <li>• Concept for instrument comparisons</li> <li>• Published results of the comparison</li> </ul>	TBD
	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	TBD
	d) Review the operational practice associated with total ozone measurements (by consultant)	Recommendations for a standard automated ozone observational site	TBD
	e) Review operational practice associated with UV and, aerosol optical depth measurements	<ul style="list-style-type: none"> <li>• Report to Members on operational practice</li> <li>• Recommendation on update as necessary</li> </ul>	TBD
	f) Monitor the efforts of the CAS Scientific Steering Committee on UV Measurements	Updated Ch 7, "Measurement of radiation", of the CIMO Guide	TBD
	g) Develop further the establishment of a World Standard Group of absolute long-wave radiometers	A World Infrared Radiometer Calibration Center established	TBD
	h) Coordinate the dissemination of World Radiometric Reference (WRR) factors to regional and national radiation standards	A World Infrared Radiometer Calibration Center established	TBD
	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)	TBD
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	TBD	
5.	<b>Report on progress of urban and road meteorological measurements</b>		2 yrs (2003-04)
	a) Monitor the emerging requirements for measurements for road meteorological measurements (US to review draft of Mr. Ladent)	<ul style="list-style-type: none"> <li>• Technical recommendations for standards and practices on road meteorological measurements</li> <li>• Updated CIMO Guide</li> </ul>	1 yr (2004)
	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		
	c) Monitor the emerging requirements for measurements for urban meteorological measurements (draft by Prof Oke)	<ul style="list-style-type: none"> <li>• Technical recommendations for standards and practices on urban meteorological measurements</li> <li>• Updated CIMO Guide</li> </ul>	1 yr (2003)

<sup>1</sup> To be determined

**B. OPAG-UPPER AIR**

No.	OPAG-UPPER AIR TASKS	OUTPUTS	PERIOD
1.	<b>Improve the global radiosonde network</b>		4 yrs (2003-2006)
	a) In collaboration with HMEI, organize and evaluate WMO radiosonde intercomparisons to detect error characteristics of various types of aerological measurement systems and deal with the technical issues involved in modernizing and improving the accuracy of the radiosonde component of the upper-air network	<ul style="list-style-type: none"> <li>• Published results of the intercomparisons and complete outstanding intercomparison reports</li> <li>• New working reference for future radiosonde comparisons</li> <li>• Updated guidance on radiosonde error characteristics</li> </ul>	1 yr 2003  3 yrs (2003-2005)  TBD
	b) Develop techniques and report annually on the performance of radiosonde types in the GOS (by UKMO)	Report to Members on radiosonde types used in GOS	2 yrs (Annually)
	c) Coordinate testing of new radiosonde types in conjunction with HMEI	Annual reports on radiosonde testing	Ongoing
	d) Solicit agreement on BUFR code table and descriptors for international use	<ul style="list-style-type: none"> <li>• Agreements achieved on BUFR code table and descriptors</li> <li>• Report to the relevant CBS ET/ICT</li> </ul>	1.5 yrs (2003-04)
	e) Review procedures of publication of results of WMO Radiosonde Comparisons	Reference procedures for radiosonde intercomparisons and updated CIMO Guide	1 yr (20023)
	f) Organize and evaluate WMO intercomparison of remote and in situ U/A sounding systems	Published results of the intercomparisons	Ongoing
2.	<b>Investigate error characteristics of water vapour measurements and explore compatibility between the different types of measurement</b>		3 yrs (2003-05)
	a) Develop operational procedures of GPS water vapour networks	<ul style="list-style-type: none"> <li>• Final report to Members</li> <li>• Annual reports</li> </ul>	2 yrs (2003-04)
	b) Monitor and assist in the introduction of humidity measurements in AMDAR Systems (by rapporteur Jeff Stickler).	<ul style="list-style-type: none"> <li>• Final report to Members</li> <li>• Annual reports</li> <li>• Advice on how to best integrate CIMO into AMDAR</li> </ul>	3 yrs (2003-2005)
3.	<b>Complementary use of modern Doppler radars and profilers in the U/A network</b>		3 yrs (2003-2005)
	a) Improve quality and availability of remotely sensed upper wind measurements	<ul style="list-style-type: none"> <li>• Report on status of QM in regional projects</li> <li>• Developed links between manufacturers and regional projects aimed at system integration</li> </ul>	2 yrs (2003-04)
	b) Report on the suitability of modern radars and wind profilers for deployment in NMHS	Final Report to Members	2 yrs (2004-05)
	c) Prepare and publish a guidance material on operational aspects of wind profiler radars in Europe, United States and Japan in the IOM Report series	Final Report to Members	1 yr (2004)
4.	<b>Monitor and report on calibration of satellite remote sensing instrumentation (request to CBS)</b>	Report provided to CIMO MG by CBS	2 yrs (2003-04)

No.	OPAG-UPPER AIR TASKS	OUTPUTS	PERIOD
5.	<b>Determine the consistency of data processing radiosonde algorithms for TEMP messages</b>	Report to Members and relevant CBS ET/ICT	1 yr (2003)
6.	<b>In consultation with HMEI, determine the operational use of lightning detection methods</b>		2 yrs (2003-04)
	a) Monitor and report on national and regional lightning detection projects and networks	Summary report to Members on the system characteristics including current accuracy standards and QA being used	2 yrs (2003-04)
	b) Propose evaluation methods for operational lightning detection systems		
c) Review the progress in the compatibility of lightning detection remote-sensing and conventional in-situ observations			
7.	<b>Promote, facilitate and assist with developments in integrated profiling systems and report on other upper-air measurement techniques (by rapporteur from Météo Swiss)</b>		2 yrs (2003-04)
	a) Monitor the progress of projects set up to integrate different ground-based observing techniques together to provide improved sensing of vertical profiles of temperature, humidity and cloud structure	Feasibility report to Members on integrated profiling technologies and techniques	2 yrs (2003-04)
	b) The techniques are expected to include lidar, microwave radiometer, sodar, RASS, etc.		
8.	<b>Development of technical information for support of radio frequency sharing policy for WRC<sup>2</sup></b>		Annually
	a) Improve coordination of radiosonde operating frequencies between neighboring countries	<ul style="list-style-type: none"> <li>• Arrange for the provision of information from HMEI for current and new systems and report on them</li> <li>• Recommendations to ITU</li> </ul>	Annually
	b) Assist in coordination and protection of radio frequencies for ground-based observing systems		

### C. OPAG-CAPACITY BUILDING

No.	OPAG-CAPACITY BUILDING TASKS	OUTPUTS	PERIOD
1.	<b>Boost activities of RICs to maximize their effectiveness in collaboration with RAs</b>		
	a) Strengthen further the services of RICs, particularly those located in developing countries, such as calibration practices and reporting	<ul style="list-style-type: none"> <li>• Analyzed results of survey on RICs</li> <li>• Recommendations on the: <ul style="list-style-type: none"> <li>i. improvements required,</li> <li>ii. plan of evaluation visits,</li> <li>iii. ways to strengthen RICs,</li> <li>iv. cooperation methods, e.g. mentoring, training of trainers, attachments</li> </ul> </li> </ul>	1 yr (2003)
	b) Improve the guidance for RICs, review their terms of reference and develop an appropriate procedure to assist in evaluation of RICs	<ul style="list-style-type: none"> <li>• Manual on RICs' activities</li> <li>• Developed evaluation criteria</li> <li>• Reviewed TOR</li> </ul>	2 yrs (2004-05)

<sup>2</sup> Task be addressed by Dave Franc, USA

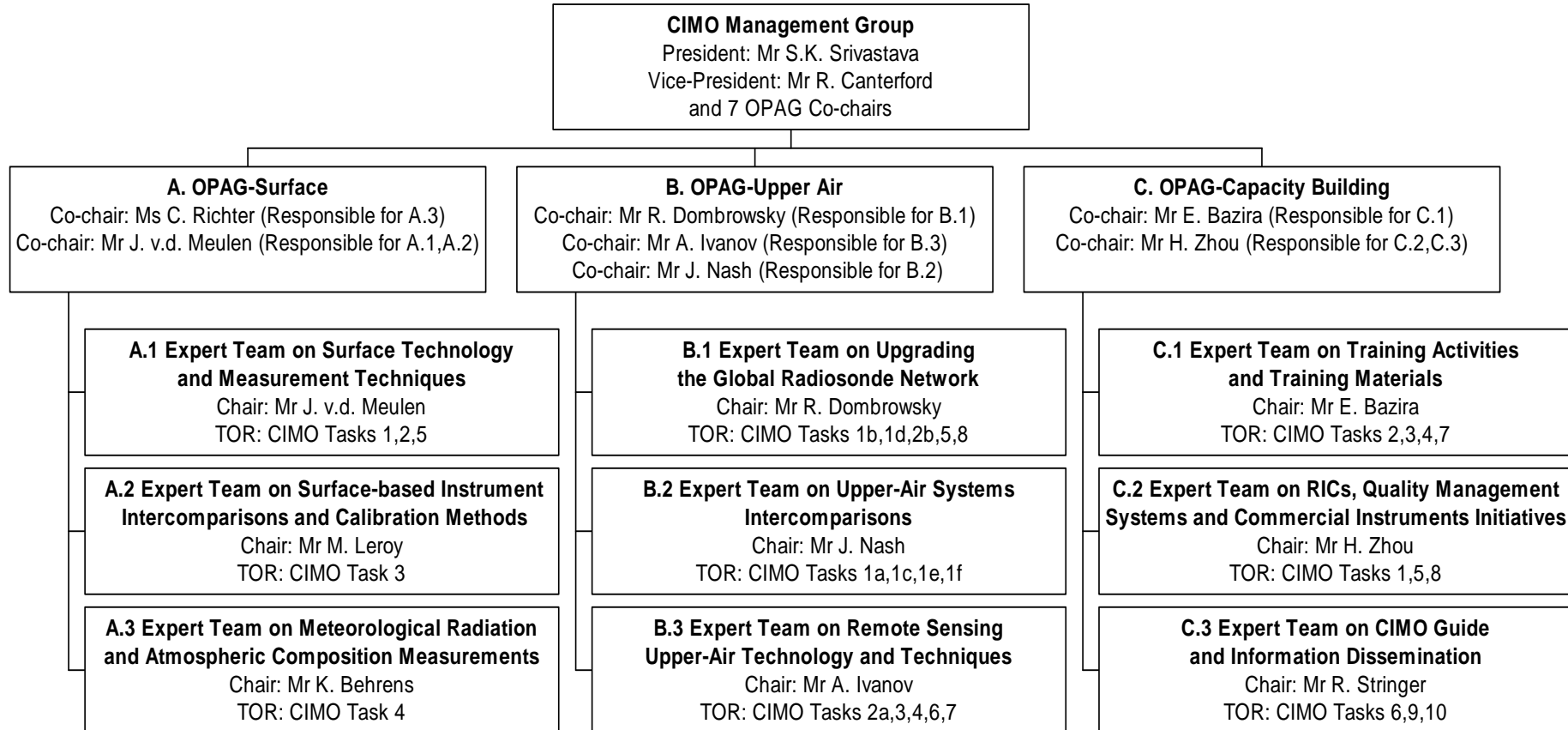
No.	OPAG-CAPACITY BUILDING TASKS	OUTPUTS	PERIOD
	c) Conduct periodic visits to RICs, by CIMO's representative or regional authority, to provide needed training/briefings and validating the compliance to the stated terms of reference. Evaluate existing RICs	<ul style="list-style-type: none"> <li>• Visits of RICs completed</li> <li>• RICs evaluated against agreed criteria</li> </ul>	2 yrs (2004-05)
	d) Explore the possibility of strengthening cooperation among RICs by the establishment of a mutual relationship between RICs in the developed and the developing countries	Recommendations on cooperation methods, e.g. mentoring, training of trainers, attachments	2 yrs (2004-05)
2.	<b>Organize technical conferences and training activities in collaboration with other technical commissions and the HMEI as appropriate (by CIMO-MG)</b>		1 yr (2003)
	a) Determine innovative ways and means to reduce the cost of TECOs	Request of Members <sup>3</sup> to Cg-XIV/EC-LV for funding of intersessional TECO	1 yr (2003)
3.	<b>Determine innovative training methods to reduce cost of training</b>	<ul style="list-style-type: none"> <li>• Advice on use of distance learning, computer assisted training, etc.</li> <li>• Report to Members</li> </ul>	1 yr (2003)
4.	<b>Cooperate with manufacturers with a view to engaging them in providing comprehensive training on their systems, especially in developing countries</b>	Concrete proposals to engage HMEI in providing appropriate training to developing countries	4 yrs (2003-06)
5.	<b>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<sup>4</sup></b>		TBD
	a) Develop performance measures to demonstrate continuous improvement in the quality of observations (pending decision of Cg-XIV)	Developed basic procedures for quality management of observations, instrument maintenance, calibration and operational practices	TBD
	b) Contribute to the review and update of WMO Technical Regulations, Guides and other material related to Quality Management and standardization of observations (pending decision of Cg-XIV)	CIMO Guided updated	TBD
6.	<b>Maintain and update the CIMO Guide (WMO-No 8) and advise on changes required for the Instrument Catalogue</b>	<ul style="list-style-type: none"> <li>• CIMO Guide updated</li> <li>• New Chapters prepared as required by CIMO MG</li> </ul>	2 yrs (2004)
	a) Review the table on Operational Accuracy Requirements and Typical Instrument Performance (in liaison with CBS ET)	Consensus obtained from users	1 yr (2003)
	b) Production of an electronic version of the CIMO Guide	<ul style="list-style-type: none"> <li>• Electronic version of the CIMO Guide</li> <li>• Web access to CIMO Guide</li> </ul>	2 yrs (2004)

<sup>3</sup> Countries of CIMO-MG members

<sup>4</sup> Task pending decision of Cg-XIV, action to be decided afterwards

No.	OPAG-CAPACITY BUILDING TASKS	OUTPUTS	PERIOD
7.	<b>Review available and develop new training materials in support of capacity building in the instrument area</b>		3 yrs (2003-05)
	a) Review available and prepare additional training material, in association with OPAG-Surface, OPAG-Upper Air and HMEI  (Note: ensure coordination with EC Panel on Education and Training, take account of language)	<ul style="list-style-type: none"> <li>• Report on currently available training materials from government and private training institutions, WMO Members, etc.</li> <li>• Additional training for scientists beginning work in instrumentation development provided through seminars and written materials</li> <li>• Additional training materials provided to instrument technicians (on operation and maintenance)</li> <li>• Training material on U/A observations in Russian language (by RF)</li> </ul>	1 yr (2003)  2 yrs (2004-05)  1 yr (2003)  1 yr (2003)
	<b>Review and suggest methods to develop the IMOP capacities of developing countries, in collaboration with HMEI</b>		4 yrs (2003-06)
	a) Encourage development, fabrication of instruments and operation of low-cost, good quality meteorological and hydrological observing systems	<ul style="list-style-type: none"> <li>• Requirements for observation equipment in developing countries provided to HMEI</li> <li>• Focus provided for enhancing equipment development in developing countries</li> <li>• Proposals for joint procurement mechanisms for consumables and equipment to assist in achieving a reduction in the cost of instrument operation</li> </ul>	2 yrs (2003-04)  4 yrs (2003-06)  2 yrs (2003-04)
9.	<b>Develop a Web-portal for access to all types of information on instruments, such as methods of observation, AWSs, algorithms, intercomparisons, TECO papers, etc.</b>	Web-portal developed and maintained	1 yr (2003)
10.	<b>Provide CIMO input to WMO bilateral arrangements with international organization such as ISO and BIPM</b>	<ul style="list-style-type: none"> <li>• Responses provided to ISO on enquiries related to radiation, hydrology and air quality</li> <li>• Responses provided to BIPM concerning traceability of standards</li> </ul>	TBD

**CIMO STRUCTURE**  
**Leadership of OPAGs and Expert Teams**  
**Terms of Reference of Expert Teams**



See [Annex II](#) for Tasks to be undertaken by the CIMO OPAGs  
Some ET Chairs have to be confirmed by the respective Permanent Representatives

## COMPOSITION OF EXPERT TEAMS

## A. OPAG-SURFACE

A.1 Expert Team on Surface Technology and Measurement Techniques (Tasks<sup>5</sup>: 1,2,5)

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<sup>5</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs<sup>6</sup> To be confirmed by the Permanent Representative

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<sup>7</sup> To be confirmed by the Permanent Representative

<sup>8</sup> To be confirmed by the President of the respective Commission

<sup>9</sup> To be decided by the President of the respective Commission

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## A.2 Expert Team on Surface-based Instrument intercomparisons and Calibration Methods (Task<sup>11</sup>: 3)

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<sup>10</sup> To be confirmed by JCOMM

<sup>11</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs

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1.	Representative of <b>EUMETNET</b>  (Proposed expert: Michel LEROY <sup>12</sup> )	See above
2.	Representative of <b>CBS</b>  (Proposed expert: Igor ZAHUMENSKY <sup>13</sup> )	See above

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<sup>12</sup> To be confirmed by EUMETNET

<sup>13</sup> To be confirmed by the President of the respective Commission

### A.3 Expert Team on Meteorological Radiation and Atmospheric Composition Measurements (Task<sup>14</sup>: 4)

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<sup>14</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs

<sup>15</sup> To be decided by the PMOD/WRC Davos and confirmed by the Permanent Representative

<sup>16</sup> To be decided by the President of the respective Commission

**B. OPAG-UPER AIR****B.1 Expert Team on Upgrading the Global Radiosonde Network (Tasks<sup>17</sup>: 1b, 1d, 2b, 5, 8)**

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<sup>17</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs

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3.	Representative of <b>COST</b>  (Proposed expert: Tim OAKLEY <sup>22</sup> )	See above
4.	Representative of <b>GCOS</b>  (Proposed expert: Thomas PETERSON <sup>23</sup> )	Tel.: Fax: E-mail:
5.	Representative of <b>EUMETNET</b>  (Proposed expert: Tim OAKLEY <sup>24</sup> )	See above

<sup>18</sup> To be confirmed by the Permanent Representative

<sup>19</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs

<sup>20</sup> To be confirmed by AMDAR

<sup>21</sup> To be confirmed by the President of the respective Commission

<sup>22</sup> To be confirmed by COST

<sup>23</sup> To be confirmed by CGOS

<sup>24</sup> To be confirmed by EUMETNET

**B.2 Expert Team on Upper-air Systems Intercomparisons (Tasks<sup>25</sup>: 1a, 1c, 1e, 1f)**

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<b>Participation of other Technical Commissions, Programmes and relevant International Organizations and Groupings, depending on the tasks pursued:</b>		
1.	Representative of <b>COST</b> (Proposed expert: John NASH <sup>28</sup> )	See above

<sup>25</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs<sup>26</sup> To be decided by the Permanent Representative<sup>27</sup> To be confirmed by the Permanent Representative<sup>28</sup> To be confirmed by COST

**B.3 Expert Team on Remote Sensing Upper-air Technology and Techniques**(Tasks<sup>29</sup>: 2a, 3, 4, 6, 7)

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6.	Dirk ENGELBART <b>Rapporteur on integrated observing systems</b> (Tasks <sup>30</sup> : 6,7)	Deutscher Wetterdienst Postfach 10 04 65 63004 Offenbach <b>Germany</b> Tel.: +(49 336) 77 60-240 Fax: +(49 336) 77 60-280 E-mail: <a href="mailto:dirk.engelbart@dwd.de">dirk.engelbart@dwd.de</a>
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<sup>29</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs<sup>30</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs

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<b>Participation of other Technical Commissions, Programmes and relevant International Organizations and Groupings, depending on the tasks pursued:</b>		
1.	Representative of <b>COST</b> (Proposed expert: Siebren de HAAN <sup>31</sup> )	See above
2.	Representative of <b>EUMETNET</b> (Proposed expert: Dirk ENGELBART <sup>32</sup> )	See above

<sup>31</sup> To be confirmed by COST

<sup>32</sup> To be confirmed by EUMETNET

**C. OPAG-CAPACITY BUILDING****C.1 Expert Team on Training Activities and Training Materials (Tasks<sup>33</sup>: 2,3,4,7)**

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<sup>33</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs<sup>34</sup> To be confirmed by the Permanent Representative

## C.2 Expert Team on RICs, Quality Management Systems and Commercial Instruments Initiatives (Tasks<sup>35</sup>: 1,5,8)

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<sup>35</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs

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### C.3 Expert Team on CIMO Guide and Information Dissemination (Tasks<sup>37</sup>: 6,9,10)

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<sup>36</sup> To be confirmed by the Permanent Representative

<sup>37</sup> See [Annex II](#), Tasks to be undertaken by the OPAGs

<sup>38</sup> To be confirmed by the Permanent Representative

CIMO-MG-1, ANNEX V

PRELIMINARY PLANS OF MEETINGS

		2003				2004				2005				2006				2007
		1.Q	2.Q	3.Q	4.Q	1.Q	2.Q	3.Q	4.Q	1.Q	2.Q	3.Q	4.Q	1.Q	2.Q	3.Q	4.Q	1.Q
<b>A.</b>	<b>OPAG-Surface</b>																	
A.1	ET on Surface Technology and Measurement Techniques						M											
A.2	ET on Surface-based Instrument intercomparisons and Calibration Methods			M														
A.3	ET on Meteorological Radiation and atmospheric composition Measurements									To be determined (yr 2005)								
<b>B.</b>	<b>OPAG- Upper Air</b>																	
B.1	ET on Upgrading the Global Radiosonde Network				M													
B.2	ET on Upper-air Systems Intercomparisons					M												
B.3	ET on Remote Sensing Upper-air Technology and Techniques							M										
<b>C.</b>	<b>OPAG- Capacity Building</b>																	
C.1	ET on Training Activities and Training Materials							M										
C.2	ET on RICs, Quality Management Systems and Commercial Instruments Initiatives	Visits to Regional Instruments Centres (2003-2004)																
C.3	ET on CIMO Guide and Information Dissemination	Work by correspondence only, no meeting is expected.																
	<b>Training and Capacity Building Events</b>																	
1	U/A Training Workshop Botswana		W															
2	U/A Training Workshop for French speaking RA I countries				W													
3	TECO									TC								TC
	<b>Intercomparisons</b>																	
1	International Organizing Committee on Surface-based Intercomparisons			M														
2	International Organizing Committee on Upper-air Systems Intercomparisons					M												
	<b>Other Meetings</b>																	
1	CIMO-MG Meeting									M					M			
2	CIMO-XIV Session																	S

M = Meeting; S = Session; TC = Technical Conference; W = Workshop

**FORMAT OF THE WORKING PLANS**

<b>No.</b>	<b>Task description</b>	<b>Person responsible</b>	<b>Action</b>	<b>Deadline</b>	<b>Deliverables</b>	<b>Deadline</b>
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						

**WORKING PLAN FOR 2003 – GENERAL ASPECTS**

<b>No.</b>	<b>Activity / Event</b>	<b>Date</b>	<b>Responsible</b>
1.	Final Terms of Reference of OPAGs	February	President & MG
2.	Structure of OPAGs	February	President & MG
3.	Leadership of ETs	February	President & MG
4.	Membership of ETs	Feb./ March	President & MG
5.	PTCM meeting	5-7 February	S & P <sup>39</sup>
6.	CIMO MG-1 meeting	13-15 February	S & P
7.	CIMO Newsletter 1/2003	March	Secretariat
8.	U/A Training Workshop, Botswana	7-11 April	Secretariat & OPAG- Upper Air
9.	Working Plans - ETs	May	ET Chairs
10.	Working Plans - OPAGs	May	OPAG Co-chairs
11.	Cg-XIV	5-24 May	S & P
12.	EC-LV	26-28 May	S & P
13.	CIMO Guide - Approved final edit: Part I, Chapters 1,2,3,5 and 6 ; Part II, Chapter 12	May	Secretariat
14.	CIMO Newsletter 2/2003	June	Secretariat
15.	Publication - IOM Report " Evaluation of the AWS Algorithm Questionnaire" by M. Gifford	June	Secretariat
16.	Publication - IOM Report "The Vision of Road Managers and Meteorologists on Road Meteorological Measurements" by J. Terprstra and T. Ledent	July	Secretariat
17.	Meeting of the ET on Surface-based Instrument Intercomparisons and Calibration Methods	September	Secretariat & OPAG- Surface
18.	Meeting of the International Organizing Committee on Surface-based WMO Intercomparisons	September	Secretariat & OPAG- Surface
19.	CIMO Newsletter 3/2003	September	Secretariat
20.	Publication - IOM Report "GPS Radiosonde Comparison – Brazil" by R. Silveira et al.	October	Secretariat
21.	Publication - IOM Report "7 <sup>th</sup> Edition of IDI"	October	OPAG-Surface
22.	Start of initial period of WMO RI gauges intercomparison – Laboratory intercomparison in two independent laboratories	October	OPAG-Surface
23.	Publication - IOM Report "Radiosonde Relative Humidity Sensors Intercomparisons" by F.J. Schmidlin	November	Secretariat
24.	Publication - IOM Report "Summary of the first five WMO Radiosonde Comparisons" by J. Nash	November	Secretariat
25.	U/A Training Workshop - French-speaking RA I countries	November	Secretariat & OPAG- Upper Air
26.	Progress Reports – ETs	November	ET Chairs
27.	Meeting of the ET on Upgrading the Global Radiosonde Network	November	Secretariat & OPAG- Upper Air
28.	Progress Reports – OPAGs	15 December	OPAG Co-chairs
29.	CIMO Guide - Approved final edit : Part I, Chapters 8,9,10,12,13,14 and 17; Part II, Chapter 10; and Part III, Chapter 1	December	Secretariat
30.	Publication - IOM Report "Compatibility of Radiosonde Geopotential Measurements" by J. Elms	December	Secretariat
31.	CIMO Newsletter 4/2003	December	Secretariat

<sup>39</sup> S & P = WMO Secretariat and President of CIMO

CIMO-MG-1, ANNEX VIII

**PLAN FOR THE UPDATE OF THE CIMO GUIDE**

Ch./ Part		PROPOSALS FOR UPDATES	DRAFT EDIT		QUERIES SOLVED BY	FINAL EDIT		APPROVAL OF FINAL EDIT	
			Responsible	Date		Responsible	Date	Responsible	Date
<b>P.I</b>	<b>MEASUREMENT OF METEOROLOGICAL VARIABLES</b>								
1	General	Yes	R. Pannett	Aug 02	J. v. d. Meulen	R. Pannett	Mar 03	J. v. d. Meulen	May 03
2	Measurement of temperature	Yes	R. Pannett	Aug 02	J. v. d. Meulen	R. Pannett	Mar 03	J. v. d. Meulen	May 03
3	Measurement of atmospheric pressure	Yes	R. Pannett	Aug 02	J. v. d. Meulen	R. Pannett	Mar 03	J. v. d. Meulen	May 03
4	Measurement of humidity	No							
5	Measurement of surface wind	Yes	R. Pannett	Aug 02	J. v. d. Meulen	R. Pannett	Mar 03	J. v. d. Meulen	May 03
6	Measurement of precipitation	Yes	R. Pannett	Aug 02	J. v. d. Meulen	R. Pannett	Mar 03	J. v. d. Meulen	May 03
7	Measurement of radiation	Yes; (no text)	R. Pannett	July 03	C. Richter	R. Pannett	Oct 03	C. Richter	Dec 03
8	Measurement of sunshine duration	Yes; (no text)	R. Pannett	Apr 03	C. Richter	R. Pannett	Jul 03	C. Richter	Sept 03
9	Measurement of visibility	Yes; (no text)	R. Pannett	Apr 03	C. Richter	R. Pannett	Jul 03	C. Richter	Oct 03
10	Measurement of evaporation	Yes; (no text)	R. Pannett	Apr 03	C. Richter	R. Pannett	Jul 03	C. Richter	Nov 03
11	Measurement of soil moisture	No							
12	Measurement of upper air pressure, temperature, humidity	Yes	R. Pannett	Feb 03	J. Nash	R. Pannett	Apr 03	J. Nash	June 03
13	Measurement of upper wind	Yes; (no text for GPS)	R. Pannett	Mar 03	J. Nash	R. Pannett	May 03	J. Nash	Aug 03
14	Observation of present and past weather; state of the ground	Yes; (no text)	R. Pannett	Apr 03	J. v. d. Meulen	R. Pannett	Jul 03	J. v. d. Meulen	Sept 03
15	Observation of clouds	Yes; (no text)	R. Pannett	July 03	J. v. d. Meulen	R. Pannett	Oct 03	J. v. d. Meulen	Jan 04
16	Measurement of ozone	No							
17	Measurement of atmospheric composition	Yes	R. Pannett	Feb 03	C. Richter	R. Pannett	Apr 03	C. Richter	July 03

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Ch./Part		PROPOSALS FOR UPDATES	DRAFT EDIT		QUERIES SOLVED BY	FINAL EDIT		APPROVAL OF FINAL EDIT	
<b>P.II</b>	<b>OBSERVING SYSTEMS</b>								
1	Measurements at automatic weather stations	Yes	R. Pannett	Jul 03	J. v. d. Meulen	R. Pannett	Oct 03	J. v. d. Meulen	Jan 04
2	Measurements and observations at aeronautical met. stations	Yes	R. Pannett	Jul 03	J. v. d. Meulen	R. Pannett	Oct 03	J. v. d. Meulen	Feb 04
3	Aircraft observations	Yes	R. Pannett	Jul 03	R. Dombrowsky	R. Pannett	Oct 03	R. Dombrowsky	Jan 04
4	Marine observations	No							
5	Special profiling techniques for the BL and the troposphere	No							
6	Rocket measurements in the stratosphere and mesosphere	No							
7	Locating the sources of atmospheric	No							
8	Satellite observations	No							
9	Radar measurements	Yes	R. Pannett	Jul 03	R. Dombrowsky	R. Pannett	Oct 03	R. Dombrowsky	Jan 04
10	Balloon techniques	Yes	R. Pannett	Feb 03	R. Dombrowsky	R. Pannett	Apr 03	R. Dombrowsky	June 03
11	Urban observations	New chapter by R.D.Vashistha (needs further review by Prof. T. Oke)	R. Pannett	Jul 03	C. Richter	R. Pannett	Oct 03	C. Richter	Jan 04
12	Road meteorological measurements	New chapter by T. Ladent	R. Pannett	Aug 02	J. v. d. Meulen	R. Pannett	Mar 03	J. v. d. Meulen	May 03
<b>P.III</b>	<b>QUALITY ASSURANCE AND MANAGEMENT OF OBSERVING SYSTEMS</b>								
1	Sampling meteorological variables	Yes	R. Pannett	Feb 03	R. Canterford	R. Pannett	Apr 03	R. Canterford	June 03
2	Data reduction	No							
3	Quality management	No							
4	Training of instrument specialists	No							
5	Testing, calibration and intercomparison	Yes	R. Pannett	Oct 03	R. Canterford	R. Pannett	Dec 03	R. Canterford	Feb 04

## PLAN OF PUBLICATION OF IOM REPORTS

No.	IOM Report	Author	Status	OPAG's Final Approval	Format/ Location	Publication scheduled
	<b>CIMO-XII related</b>					
1	Evaluation of the AWS Algorithm Questionnaire	M. Gifford	Draft provided in March 2002.	Co-chairs, Surface	Website CD	June 2003
2	The Vision of Road Managers and Meteorologists on Road Meteorological Measurements	J. Terprstra & T. Ledent	Draft provided in March 2002.	Co-chairs, Surface	Website CD	July 2003
3	GPS Radiosonde Comparison – Brazil	R. Silveira et al.	Preliminary Report provided in January 2003	Co-chairs, Upper-Air	Website CD	Oct 2003
4	7 <sup>th</sup> Edition of Instrument Development Inquiry	T. Prager & J. van der Meulen	In preparation	Co-chairs, Surface	Website CD	Oct 2003
5	Radiosonde Relative Humidity Sensors Intercomparisons – Russia/USA 1995-1997	Schmidlin et al.	In preparation	Co-chairs, Upper-Air	Website CD	Nov 2003
6	Summary of the first five WMO Radiosonde Comparisons	J. Nash	In preparation	Co-chairs, Upper-Air	Website CD	Nov 2003
7	Compatibility of Radiosonde Geopotential Measurements	J. Elms	In preparation	Co-chairs, Upper-Air	Website CD	Dec 2003
8	Operational Aspects of Wind Profilers	J. Dibbern	Draft provided in April 2002, but based only on COST-76 Final Report	Co-chairs, Upper-Air	Website CD	3rd quarter 2004
	<b>CIMO-XIII related</b>					
9	Papers and Posters - TECO-2004	-	-	WMO Secretariat	Website CD	4th quarter 2004
10	Guidance material on developing GPS water vapour networks	TBD <sup>40</sup>	-	Co-chairs, Upper-Air	Website CD	2005
11	Guidance on the State-of-the-art of Instruments and Automated Surface Observing Systems	TBD	-	Co-chairs, Surface	Website CD	2005

<sup>40</sup> To be decided by OPAG Co-chairpersons

No.	IOM Report	Author	Status	OPAG's Final Approval	Format/ Location	Publication scheduled
12	Existing data processing algorithms for radiosondes	TBD	-	Co-chairs, Upper-Air	Website CD	2005
13	Intercomparison of rainfall intensity gauges	TBD	-	Co-chairs, Surface	Website CD	2006
14	Intercomparison of thermometer screens/shields	TBD	-	Co-chairs, Surface	Website CD	2006
15	Intercomparison of hygrometers	TBD	-	Co-chairs, Surface	Website CD	2006
16	Recommendations for a standard automated ozone observational site	TBD	-	Co-chairs, Surface	Website CD	2006
17	WMO radiosonde intercomparison of various types of aerological measurement systems	TBD	-	Co-chairs, Upper-Air	Website CD	2006
18	WMO intercomparison of remote and in situ U/A sounding systems	TBD	-	Co-chairs, Upper-Air	Website CD	2006
19	Procedures for the publication of results of WMO Radiosonde Inter-comparisons	TBD	-	Co-chairs, Upper-Air	Website CD	2006
20	8 <sup>th</sup> Edition of Instrument Development Inquiry	TBD		Co-chairs, Surface	Website CD	2006