WORLD METEOROLOGICAL ORGANIZATION

COMMISSION FOR BASIC SYSTEMS

MANAGEMENT GROUP

FOURTH SESSION

FINAL REPORT

LANGEN, 13 - 16 OCTOBER 2003

CONTENTS

	Pages
Agenda	ii
General summary of the work of the meeting	1-8
List of participants	9-10
Annexes	11-

AGENDA

1. ORGANIZATION OF THE MEETING

1.1 Opening remarks

1.2 Adoption of the agenda

1.3 Working arrangements

2. ISSUES RELEVANT TO CBS ARISING FROM CONGRESS, EXECUTIVE COUNCIL, AND THE 2003 MEETING OF THE PRESIDENTS OF TECHNICAL COMMISSIONS

3. CBS WORK PROGRAMME

3.1 OPAG on Integrated Observing Systems

3.2 OPAG on Information Systems and Services

3.3 OPAG on Data Processing and Forecasting Systems

3.4 OPAG on Public Weather Services

4. ARRANGEMENTS FOR THE THIRTEENTH SESSION OF THE COMMISSION FOR BASIC SYSTEMS (CBS-XIII)

5. CONFERENCE ON PUBLIC WEATHER SERVICES

6. OTHER BUSINESS

Executive Summary

The fourth meeting of the CBS Management Group (MG) was held in Langen, Germany 13-16 October 2003.

The CBS-MG initiated relevant actions needed as follow-up to the outcome of Fourteenth Congress, EC-LV and the 2003 meeting of the Presidents of Technical Commissions relevant to CBS. The CBS-MG reviewed the work of the teams and rapporteurs to date and agreed on the work programme until CBS-XIII. The CBS-MG agreed upon establishing links and cooperation between CBS and CAS on THORPEX. The CBS-MG also considered the outcome and follow-up of the Earth Observation Summit, and agreed upon the active involvement of the WWW Programme in the EOS activities.

The CBS-MG initiated the preparation of thirteenth session of CBS in 2004 and agreed that a two-day technical conference on public weather services be held in association with CBS-XIII. The conference will be organized by a conference committee assisted by the Secretariat. Papers will be solicited through a call for contributions, which should be issued by February 2004.

GENERAL SUMMARY OF THE WORK OF THE MEETING

1. ORGANIZATION OF THE MEETING (agenda item 1)

1.1 Opening of the meeting (agenda item 1.1)

1.1.1 The fourth meeting of the CBS Management Group (MG) was held in Langen, Germany 13-16 October 2003. The meeting was chaired by the acting president of CBS, Mr A. Gusev. The list of participants is given at the end of this report.

1.1.2 In his opening remarks, Mr Stefan Mildner, on behalf of Dr Gaertner, Permanent Representative of Germany to WMO, welcomed the participants to Langen and Germany and wished them a productive meeting and an enjoyable stay in Langen.

1.1.3 Mr Gusev welcomed the participants. He thanked Germany and the DWD for their offer to host the meeting and for the excellent facilities. He thanked the participants for coming and wished everyone a fruitful and productive meeting.

1.2 Adoption of the agenda (agenda item 1.2)

1.2.1 The MG adopted the agenda for the meeting, which is reproduced at the beginning of this report.

1.3 Working arrangements for the meeting (agenda item 1.3)

1.3.1 The working hours and tentative timetable for the meeting were agreed upon.

1.3.2 The MG expressed its high appreciation and thanks to Dr Gaertner, President of DWD, and to Dr Mohr, Director-General of EUMETSAT, for the visit of DWD premises in Offenbach and of EUMETSAT Headquarters respectively, and for their hospitality.

2. ISSUES RELEVANT TO CBS ARISING FROM CONGRESS, EXECUTIVE COUNCIL AND THE 2003 MEETING OF THE PRESIDENTS OF TECHNICAL COMMISSIONS (agenda item 2)

2.1 The outcome of the discussions at Fourteenth Congress, EC-LV and the 2003 meeting of the Presidents of Technical Commissions relevant to CBS were reviewed with particular attention on actions that needed to be initiated and the corresponding responsibilities. The CBS-MG ensured that all relevant items were reflected in its work programme.

Aspects related to renaming CBS

2.2 The CBS-MG considered Doc 2(1) and recalled that CBS-Ext(02) requested the CBS Management Group to study further the issue and to develop a proposal for consideration by the next session of the Commission. It noted, however, that XIV-Congress requested the Executive Council to continue addressing the WMO structure and that EC-LV set up an ad hoc group on the evolving role of WMO. Congress was of the view that the PWS Programme needed to have more visibility within the WMO structure and suggested that this issue be kept in view when discussions on any changes to the present structure of WMO take place, taking also account of the new programme on natural disaster prevention and mitigation.

2.3 In view of the above decisions, the CBS-MG agreed that consideration of the aspects of renaming CBS, which are related to the structure of WMO and its constituent bodies, should be postponed until relevant EC deliberations.

WMO Space Programme

2.4 The CBS-MG discussed the new Major WMO Space Programme established by the Fourteenth Congress as described in Doc. 2(2) (see Res.5 (Cg-XIV)- WMO Space Programme and Cg-XIV Agenda item 3.1.6). It noted that XIV-Congress had assigned CBS the lead responsibility for the WMO Space Programme. It strongly agreed that there should be representation by appropriate R&D satellite

operators in the relevant ET and ICT within the OPAGs. In this regard, it requested a review by all OPAG Chairs of the work programmes for their respective ETs and ICTs to determine if adjustments would be required taking into consideration the new WMO Space Programme. Thus, it agreed to the following three action items:

- - All OPAG Chairs to review their respective ETs' and ICTs' terms of reference/assigned tasks to identify changes required to reflect the new WMO Space Programme and to inform the CBS acting president (due date: 30 November 2003).
- - Chairman OPAG IOS to utilize the forthcoming ET-ODRRGOS venue (3-7 November 2003) as a means to discuss with ET Chairpersons implications from the new WMO Space Programme and relevant portions of the WMO Sixth Long Term Plan with the possible need for new tasks and/or expert teams and to inform the CBS acting president (due date: 30 November 2003).
- - Acting president of CBS to inform the fourth session of the Consultative Meetings on High Level Policy on Satellite Matters of the OPAGs' ETs and ICTs requiring the participation by appropriate R&D satellite operators, in view of the related new tasks or changes made to their terms of reference/assigned tasks (due date: 26 January 2004).

Earth Observation Summit

2.5 The CBS-MG considered the outcome and follow-up of the Earth Observation Summit as contained in Doc. 2(7). It particularly noted that several items of the TORs of the *ad hoc* Group on Earth Observations (GEO) and the GEO Sub-groups were strongly related to the WWW, especially with respect to the redesign of the GOS (Subgroup on Architecture), and data management functions and the FWIS development (Subgroup on Data Utilization). It emphasized that the momentum created by the EOS should highly benefit the implementation of the WWW, provided that the WWW, as a unique global system, be adequately promoted. It was noted that, beyond the participation of WMO as an international agency in GEO Sub-groups, several participants from Member countries were affiliated to WMO activities, or even members of CBS. To ensure the adequate involvement of the WWW Programme in the EOS activities, the CBS-MG agreed that:

- CBS members participating in the GEO Sub-groups as national representative will be contacted by the Secretariat with a view to inviting them to participate in an e-mail exchange list including OPAG chairs to exchange and support comments and information relevant to the positioning of WWW in the EOS development;
- The OPAG chairs should be kept informed of the relevant considerations and decisions related to the EOS that may need action, through the WMO Secretariat, which participates in GEO Sub-groups.

2.6 The CBS-MG agreed that, from the prospective of CBS, the following reference material should be provided to the relevant GEO Sub-groups:

- The vision for the evolution of the GOS to 2015;
- Recommendations developed for the evolution of the space- and surface-based components of the GOS;
- The description and potentialities of the Future WMO Information System (FWIS);
- Public Weather Service examples of the utilization of observational data.

Future integration of AMDAR into the WWW Programme

2.7 The CBS-MG discussed the future integration of AMDAR into the WWW Programme as contained in Doc. 2(6). It strongly emphasized that AMDAR, as a component of the Integrated Observing Systems, should be fully integrated into the WWW Programme and its coordination mechanisms. The CBS-MG therefore agreed that:

- A rapporteur on AMDAR activities be established within the OPAG-IOS, with links to the AMDAR Panel and CAeM;
- This integration should avoid duplication of efforts amongst CBS, CAeM and the AMDAR Panel, and in particular should not retard the progress already being made by the Panel in important areas such as extension into data void areas, and activities being carried out regarding sensing of icing and humidity.

The CBS-MG noted that the AMDAR Panel activities were solely dependent on the voluntary contributions of AMDAR Panel members.

2.8 The CBS-MG noted the request of the Executive Council "to initiate specific activities under the WWW and Aeronautical Meteorology Programmes, including training to facilitate the availability and use of AMDAR data in areas where they are currently not available". It requested the OPAG-IOS in coordination with the AMDAR Coordinator, to study required training activities relevant to AMDAR data and develop proposals for training events, and the Secretariat to assess its costing with a view to a possible budgeting. The CBS-MG also noted that, under separate auspices, other training activities on the use of automated aircraft data (including AMDAR) are expected to continue in the future in particular in relation to the implementation of the ICAO Communication Navigation Surveillance / Air Traffic Management (CNS/ATM) system.

THORPEX

2.9 The CBS-MG welcomed the initiative of president of CAS to discuss cooperation between the Commissions in relation to the THORPEX, a Global Atmospheric Research Programme, established by XIV-Congress as a part of WWRP. Dr A. Eliassen, president of CAS, expressed the view that linkage between the Commissions should be broadened and strengthened to get WWW effectively involved in THORPEX. Mrs E. Manaenkova (D/AREP) presented the current state of THORPEX Programme, its ongoing and nearly planned activities. Mutual THORPEX – WWW opportunities and potential benefits were summarised and options for establishing effective links between CAS and CBS were considered.

2.10 The CBS MG unanimously expressed high appreciation of THORPEX as potentially very relevant to the WWW research needs in all programme areas. The CBS-MG agreed that THORPEX provides opportunity, in particular, to exploit targeted in-situ and space-based observations, the ability to test efficacy of a multi-model global ensemble system (with leading role of WMCs, ECMWF and in collaboration of NWP centres world-wide) and to assess the value of new decision support tools, thus having great potential to contribute to future GOS and NWP system. From the other side, THORPEX success would be assured through matching its efforts with well defined operational forecasting requirements, and transforming its scientific opportunities into specific implementation and transition plans. Therefore, evolution of the THORPEX would lead to the integration of scientific results into operational practices of NMHSs. CBS will encourage NWP centres to actively support THORPEX researches and experimentations. It was emphasized that all WMO Regions should be involved in THORPEX experiments and that Southern Hemispheric THORPEX Observing-System Tests (TOSTs) (South America, South Pacific, Africa) were essential components of a global campaign.

2.11 The CBS-MG encouraged THORPEX to make its experimental data sets available to all NMHSs (through GTS and other means) thus allowing NWP centres to conduct their own exercises that would stimulate developing their research capabilities. TOSTs efforts will be strongly supported by the WWW. Their results are considered as substantial input to CBS efforts on redesigning GOS.

2.12 Regarding the THORPEX International Scientific Plan CBS-MG was convinced that it presents a unique framework for international research activities. The Group felt that the Plan still needed to be brought to maturity. The CBS-MG, as invited by president of CAS, would call for OPAGs' contribution to the 2nd version of the Plan (available on THORPEX WEB site www.wmo.int/web/arep/wwrp/THORPEX/THORPEX.htm), to be reviewed by the ICSC at its third meeting planned for December 2003. The CBS-MG was also supportive to take part in the development of THORPEX International Research Implementation Plan that was planned to start up in early 2004.

2.13 The CBS-MG agreed that, since all OPAGs were to be involved in THORPEX, the CBS vice-president would be the most suitable high-level link. Until the election of the vice-president, the president of CBS would act as the link to THORPEX. CBS would be represented at the next ICSC meeting (December 2003, Montreal, Canada). The CBS-MG was also supportive to designate a CBS/CAS rapporteur on THORPEX and both Commissions would consider appropriate nomination. Further practical steps in developing CBS involvement in THORPEX would be considered by the CBS-MG, in light of the outcome of the December 2003 ICSC meeting.

WMO Quality Management Framework

2.14 The CBS-MG noted the decisions of XIV-Congress and EC-LV that WMO should work towards a Quality Management Framework (QMF) for NMSs, as contained in Doc. 2(4). Congress had requested the EC to take the lead in this matter, with the help of the technical commissions, and the EC had planned a wide-ranging discussion on this topic during EC-LVI. Noting that the EC requested the technical commissions to assist in the provision of technical guidance, advice, review and assessment, as appropriate, the CBS-MG agreed to consider further action on the basis of outcome of the identification by the EC of further steps to be taken. The CBS-MG also noted that one ET of the PWS OPAG was continuing to work on this issue.

3. CBS WORK PROGRAMME (agenda item 3)

3.1 OPAG on Integrated Observing Systems

3.1.1 Dr Purdom, chairman of the OPAG-IOS, presented his report on the activities of the OPAG-IOS, as contained in Doc 3.1(6) (see Annex I). The CBS-MG noted with satisfaction that each IOS-ET had been informed of the actions stemming from CBS-Ext.(02) and XIV-Congress, and that activities were planned to fulfil the required tasks.

3.1.2 The CBS-MG noted that the current CBS/IOS Rapporteur on GCOS matters, Mr Stefan Rösner, would no longer be able to fulfil this position. The very valuable contribution that was provided by Mr Rösner was noted with appreciation. The CBS-MG was informed that, according to preliminary indications, none of the institutions most actively involved in GCOS matters relating to CBS activities (NCDC, JMA, ECMWF, and DWD) seems to be in a position to take over functions of the CBS/IOS Rapporteur. The CBS-MG requested the Secretariat to assist in the identification of a suitable expert to replace Mr Rösner.

3.1.3 The CBS-MG noted that Dr Sato (Japan) would no longer be able to fulfil the position of Rapporteur on regional aspects of Scientific Evaluation of Observing System Experiments (OSEs) and Observing System Simulation Experiments (OSSEs). It agreed that Japan would designate a JMA expert to take up this role until CBS-XIII.

3.1.4 The CBS-MG noted that Mr S. Mildner used to serve as a member of the GCOS Steering Committee (GSC) representing CBS, in his former capacity as president of CBS. The CBS-MG agreed that the (acting) president should represent CBS in the GSC.

3.1.5 The CBS-MG noted the transition of COSNA activities to the European Composite Observing System (EUCOS) programme of EUMETNET, while the activities of Scientific Evaluation Group (SEG) of COSNA had been most closely related to the OPAG on IOS, as described in Doc 3.1(2). The CBS-MG emphasized that, as recommended by RA-VI, the SEG could develop into a global group which monitors and coordinates worldwide work being carried out on observing system impact studies and observing system evaluation projects, makes recommendations relevant to WMO bodies. The CBS-MG agreed to incorporate the group into the working structure of CBS; it further agreed to develop the relevant TORs and to decide upon the parent OPAG at a later date based on the outcome of the forthcoming COSNA/WMO workshop on impact studies (March 2004), while noting the strong relationship to both the DPFS and IOS OPAGs.

3.1.6 The CBS-MG noted with interest the outcome and recommendations from the Workshop to Improve the Usefulness of Operational Radiosonde (Asheville, USA, 11 - 13 March 2003), as

contained in Doc 3.1(5). It requested IOS/ETs to consider the workshop recommendations and to devise appropriate actions. It also agreed that the issues common to CBS and CIMO should be addressed at CBS-XIII, and that the president of CIMO be invited to participate.

3.2 OPAG on Information Systems and Services

3.2.1 Prof. Hoffmann, chairman of the OPAG-ISS, presented his report on the activities of the OPAG-ISS, as contained in Doc 3.2(1) (see Annex II).

3.2.2 The CBS-MG was pleased to note that the ET-IMTN had almost completed its major task through the significant implementation of the IMTN including the several MTN circuits that were firmly planned by the end of 2003. However, further work is required for the implementation of the IMTN in Region I and III. The CBS-MG noted that several tasks of the ET-IMTN were interdependent with the tasks of the Expert Team on Enhanced Utilisation of Data Communication System.

3.2.3 The ET-EUDCS should further develop recommended practices for TCP/IP and related protocols, including a file naming convention for operational routeing and distribution, as well as new guidance for using the Internet between GTS centres (via e-mail and VPNs). The CBS-MG noted the ad-hoc Expert meeting planned for December 2003, focused on the use of Internet. A joint meeting of the ET-EUDCS and ET-IMTN is planned in 2004 (first half) to consolidate all contributions with a view to CBS-XIII. The CBS-MG agreed that the attendance to the joint meeting should be harmonized from the two ETs' membership (one expert from Australia, Brazil, Canada, China, France, Germany, Japan, Kenya, Russian Federation, Turkey, United Kingdom, USA, plus ECMWF & ASECNA).

3.2.4 The CBS-MG noted with satisfaction the activities of the ET-DR&C and associated training courses. XIV-Congress while endorsing the plan for a WMO-wide migration to table-driven code, highlighted the complexity of the migration process and requested CBS to put in place an effective implementation/coordination mechanism for guiding, assisting and monitoring the migration. The CBS-MG agreed that the ET on Migration should be converted into an ICT on Migration to TDCF to better ensure the effective central coordination and monitoring, and requested the OPAG chair to adjust its TOR accordingly.

3.2.5 With respect to the ET-IDM, the CBS-MG stressed the crucial importance of WMO Metadata standards. Several further actions were required from all Programmes for the development of the WMO metadata standard. The CBS-MG invited the CBS president to address this matter at the forthcoming PTC meeting.

3.2.6 The CBS-MG fully supported the establishment of an ad-hoc sub-group, working by correspondence (E-mail), to assist the ICT-ISS in the continuous operational management of abbreviated headings. It would developed proposals to be submitted to the OPAG-ISS chair for agreement on an experimental use, and then formally endorsed for recommendation by CBS (through a session or its president, as appropriate). The ad-hoc sub-group should comprise the OPAG-ISS co-chair, the ET-DRC chair, the ET- migration to TCDF chair and Focal points of RTHs located on the MTN, with the assistance of the Secretariat.

3.2.7 The CBS-MG noted the decisions of XIV-Congress that CBS pursue the further development of the FWIS towards the refinement and consolidation of the concept and then the design and implementation planning phases. It stressed the crucial importance of the involvement and contribution of all Programmes and TCs, as emphasized by Congress, and invited the CBS president to firmly address this issue at the forthcoming PTC meeting. The CBS-MG agreed upon the inclusion of additional GTS expertise (Mr H. Ichijo, Japan) into the ITT-FWIS membership, as requested by CBS-Ext.(02).

3.2.8 With respect to radio-frequency matters, the CBS-MG noted with appreciation the favourable outcome of WRC-03 and noted that the most important issues to be addressed by the SG-RFC were now related to the protection of spaceborne passive sensing, as emphasized by XIV-Congress (ref. Resolution 3).

3.3 OPAG on Data Processing and Forecasting Systems

3.3.1 Mrs Simard, chair of the OPAG -DPFS presented her report, as contained in Doc 3.3(1) (see Annex III), including planned activities to address relevant XIV-Congress conclusions and decisions.

3.3.2 The CBS-MG felt that the needs for improvement to severe weather forecasting would be best addressed first within a Regional Association, taking into account capabilities of the Members and severe weather issues that need to be tackled as a priority. Although WMO workshop and/or training in EPS, NWP, and nowcasting were deemed important, it was suggested that a demonstration project, involving EPS, other NWP models, nowcasting, interpolation techniques involving, through voluntary participation, a major RSMC, developing NMS(s), WWRP and disaster management agencies would contribute capacity building and improving links with disaster management agencies. Such a demonstration project would use a cascading approach to provide greater lead-time for severe weather. For example EPS based guidance could be used to identify several days in advance potential areas for severe weather. Then higher resolution models would be used to refine the forecasts in the shorter range. Finally in the very short term (few hours), nowcasting techniques or extrapolation techniques could be used to provide more up-to-date information. It would help demonstrate how NWP products and nowcasting/extrapolation techniques can be applied to improve severe weather forecasting, to help in decision-making, identify issues and gaps, and provide recommendations for future work.

3.3.3 The CBS-MG agreed that such a demonstration project, focused on severe weather events such as heavy rainfall, severe wind storms or extreme temperature occurrences, should be developed as a concrete contribution of the WWW Programme to the new WMO Programme on natural disaster prevention and mitigation. It agreed that a small group composed of the rapporteur on severe weather and representatives from both developed and developing countries further develop the details and identify resources required. This would be further discussed during the ICT meeting prior to being presented at CBS XIII for further consideration. The CBS-MG noted that ACMAD, which is one of the Regional centres in Africa, could be a potential candidate for the demonstration project.

3.3.4 CBS-MG agreed on the revised terms of reference and proposed deliverables of the expert teams prior to next CBS session. The terms of reference have been modified to incorporate decisions from CBS-Ext.(02). There was recognition that the OPAG on DPFS had less support from the Secretariat as a result of staff shortage, that may impact on some activities and result on postponement of meetings and workshops.

3.3.5 It is also noted that a workshop on the use and interpretation of EPS and some guidance material will be developed by the ET on EPS. Lead centres in the verification on Long Range Forecasts are being established, roles and responsibilities of the two lead centres are being developed. A consultant will conduct a study of the direction, needs and options for an expanded role of RSMCs in non-nuclear atmospheric transport modeling. Also IAEA have started to review their needs for more specialized meteorological products. The issue of terrorism is getting increased attention.

3.3.6 The chairs of the ET on EPS and the ET on the infrastructure for Long Range Forecast had indicated that they were no longer able to carry out their duties. Interim arrangements were being made to allow activities to continue until next CBS session. Arrangements were also being made to replace the rapporteur on severe weather.

3.3.7 In addition, it was noted that major GDPFS centres are involved on impacts studies related to the redesign of the Global Observing System. They run and evaluate the results on forecasts at different time scales. The impacts studies are complex as they depend on data assimilation scheme, model used, resolution, etc…In addition to the global scale, it is important to conduct such impact studies for the mesoscale as well.

3.3.8 The CBS-MG noted that, in the broader context of the role and operation of the NMHSs, Cg-XIV discussed the requirements for WMO standards for weather forecasts, and CBS was requested to study this matter. The CBS-MG agreed to establish a rapporteur on this issue whose role will be to gather documentation that already exist on the matter (Germany, Australia, ACMAD were noted, and possibly others) and summarize the information. It was emphasized that the various situations existing in NMHSs with different level of development should be addressed. The rapporteur will be a member

of the ICT on DPFS and will present its finding at the next ICT for further recommendation to be presented to CBS-XIII.

3.4 OPAG on Public Weather Services

3.4.1 Mr O'Loughlin, chairman of the OPAG-PWS, presented his report on the activities of the OPAG-PWS, as contained in Doc 3.4(1) (see Annex IV). The CBS-MG noted with satisfaction the progress made and the activities that were planned to fulfil the required tasks with a view to CBS-XIII.

3.4.2 The CBS-MG was pleased of the success of the WEB sites on city forecasts and on warning, operated by Hong-Kong (China). It noted that the actual use of these sites by the media was not assessed, and expressed that the sites should be further promoted in this respect.

3.4.3 The CBS-MG noted with satisfaction all the guidance and training material that was developed on PWS product development and service assessment (as well as on media relations, disaster management and forecast warnings and exchange).

3.4.4 The CBS-MG was also pleased that the dialogue with the international media had improved and that the small International Association of Broadcast Meteorology (IABM) was supportive of the role of NMS's in delivery of public weather services. Efforts of the ET-MI would continue since there were, however, still significant issues where both international and local media did not give sufficient attribution to the NMSs, especially in warning situations, and this could have a significant impact on the visibility and credibility of the NMS, in particular in smaller countries.

4. ARRANGEMENTS FOR THE THIRTEENTH SESSION OF THE COMMISSION FOR BASIC SYSTEMS (CBS-XIII) (agenda item 4)

4.1 The CBS-MG, considering the experience and outcome of previous sessions, provided guidance for the planning of the thirteenth session to be held in 2004. It agreed on a provisional agenda for the session as given in Annex V.

4.2 The CBS-MG emphasized that the OPAG activities, including ETs and ICTs meetings, had been organized and scheduled under the assumption that CBS-XIII would be held in November 2004. It therefore strongly recommended that, for the sake of the completion of its work programme, CBS-XIII session be maintained in November 2004. It also emphasized that a full session, including in particular election of officers and the thorough review of the future work programme, including the establishment of OPAG ETs, ICTs and rapporteurs, would need an absolute minimum of 8 working days.

4.3 The CBS-MG unanimously recommended two candidates who should receive certificates in recognition of long-standing distinguished contributions to the Commission at the thirteenth session of CBS:

- Mr S. Mildner (Germany), as former CBS president, who, inter alia, lead the re-structuring of CBS;
- Mr H. Allard (Canada), for his decisive contributions to ERA and RSMCs on transport models, and to the new working structure of CBS.

5. CONFERENCE ON PUBLIC WEATHER SERVICES (agenda item 5)

5.1 Following the practice of holding a technical conference in conjunction with a Commission session for the last three sessions of CBS, and the fact that such conferences were considered to have improved participation of experts from developing countries, the group considered a proposal to hold a conference on public weather services be held in association with the thirteenth session of CBS in 2004.

5.2 It was agreed that the conference be held during the two days preceding the next CBS session to be held in the last quarter of 2004. The conference will be organized by a conference committee, headed by a conference director, and assisted by the Secretariat. The CBS-MG recommended that

the chair of the OPAG-PWS, Mr Kevin O'Loughlin (Australia), serve as the conference director and other members of the committee would be the session chairs.

5.3 The CBS-MG reviewed suggested sessions for the conference committee to consider. It emphasized that the themes of the conference should be focused on the essential topics, in view of its short duration. It agreed that the topics of utilization of satellite data (including R&D) and the Virtual Laboratory should be addressed. It also recalled that severe weather aspects were addressed during a full day session at the previous technical conference on DPFS (2002).

5.4 The group considered arrangements for organizing the conference and agreed on the following activities and schedule.

a. The Secretariat, assisted by the conference committee, should draft and issue a call for papers before 1 February 2004. The call for papers should be directed to a wide audience including Members, all members of CBS, members of other Technical Commissions, representatives of related international programmes, the environmental research community, media, disaster management organizations and the private sector. The conference and call for papers should also be announced via the WMO Bulletin and the WMO web site.

b. Abstracts of papers should be received by 1 May 2004.

c. The committee should review the abstracts and select papers to be presented at the conference by 1 July 2004.

d. Final papers should be provided to WMO Secretariat, preferably in electronic form, by 1 September 2004 and published on a conference web site created on the WMO server.

5.5 Recognizing that the budget needed to support the conference was not available, the group agreed that sources of funding should be sought. The chair of the OPAG-PWS will work with the Secretariat to coordinate efforts to seek sponsors and donors for support. Taking into account the severe budget constraints, the CBS-MG regretted that the provision of interpretation did not appear to be affordable at this stage. It therefore agreed that the conference be planned and advertised as English only, keeping the flexibility of deciding to provide interpretation (into English or full E/F/S/R) if and when the funding would allow it.

6. OTHER BUSINESS (agenda item 6)

6.1 . The CBS-MG noted and welcomed the project, as contained in Doc 6(1) and developed by the Secretariat, for an Internet forum to facilitate informal discussions between Members regarding non-technical aspects of international collaboration. It recommended that the UK Met Office be consulted with a view to supporting basic services of such an Internet forum. It requested that the actual use of the forum (number of contributions, of participants, of accesses, etc) be assessed after one year of experimental operation, and that further development be then considered as appropriate.

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ANNEX I

Annex to Paragraph 3.1.1

Report of the Chairperson of the OPAG-IOS

Background

1. The Chair OPAG IOS presented a complete report of activity at CBS-Ext.(02) in Cairns, Australia in December 2002. The report was accepted with very minor revision by CBS. The Terms of Reference for the ET's were reviewed and the work plans were modified to reflect the successes and pertinent activities for the next two years.

2. Mr Rösner has informed the Chair, OPAG-IOS of his not being able to continue as Rapporteur on GCOS Matters. The Secretariat has also informed through official channels.

3. Mr Sato has informed the Chair, OPAG-IOS of his not being able to continue as Rapporteur on OSEs and OSSEs (regional matters).

OPAG IOS Activity since CBS-Ext. (02)

4. Each ET Chair provided information with regard to other programmes within WMO, with whom they have interaction. Results are presented below.

ET ODRRGOS

- CAS has attended our entire meeting, represented by Dr John Eyre;
- ECMWF has been active at all meetings through its representative, Dr Horst Böttger;
- CAeM has attended two out of the last three meetings (Jan. 2002 and April 2001), represented by Dr Herbert Puempel;
- EUCOS has attended the last two meetings (Jan. 2002 and July 2002) represented by the EUCOS Program Manager, Dr Jim Caughey;
- AOPC has been represented by Dr Mike Manton (April 2001) and Dr Jo Schmetz (Jan. 2002);
- JCOMM has attended, represented by Mr Etienne Charpentier and Dr Hiroshi Kawamura (Jan. 2002);
- At other meetings:
  - (a) ET-ODRRGOS has been represented at CGMS by Dr Don Hinsman and Dr Paul Menzel;
  - (b) ET-ODRRGOS plan for evolution of the GOS has been briefed to NESDIS, EUMETSAT, Australian BoM, and Chinese NSMC managers, as well as at the last CBS by the OPAG IOS chair.

ET-AWS

ET/AWS coordinated on AWS taskings with the chair of the ET/DR&C, the CAgM, CIMO, AMDAR, and GOS.

ET-SDUP

(i) Operational Satellite operators as represented through USA (NESDIS), Europe (EUMETSAT), Japan (JMA), Russian Federation, and China (NSMC);

(ii) OPAG-ISS for FWIS related activities;

(iii) CGMS and the Virtual Laboratory for Satellite Data Utilization with 6 WMO Centres of Excellence at five WMO Regional Meteorological Training Centres at San Jose, Costa Rica, Bridgetown, Barbados, Niamey, Niger, Nairobi, Kenya, and Nanjing, China and one at the Australian Bureau of Meteorology Training Centre (ABOMTC)

5. Each ET Chair has reviewed the work plans as suggested by CBS-Ext.(02). While expectations are formidable, each ET Chair felt that they could meet the expectations of the work plan by having two meetings before CBS-2004.

ET ODRRGOS requirements

(i) Full meeting is scheduled for 3 to 7 November 2003 in Geneva (Meeting agenda available on WMO server).

(ii) Full meeting around mid 2004. This meeting is expected to follow by about two months the Third WMO Workshop on the Impact of Various Observing Systems on NWP in Alpbach, Austria during 9 – 11 March 2004

(a) Co-chairmen (2): Jean Pailleux (Météo-France) and Horst Böttger (ECMWF)

(b) Organizing Committee (6): John Eyre (Met Office), Nobuo Sato (JMA), Tom Shatter (NOAA/FSL), Paul Menzel (NOAA/ORA), Helmut Rott (local host at U. Innsbruck), Alexander Karpov (WMO)

ET-AWS requirements

1 full meeting and 1 reduced meeting in 2004

(a) One meeting of the group is needed to get things rolling. Following the result of the meeting, we will be in a better position to determine the need for an additional meeting.

(b) As for our activities, the group felt the need to make a collaborative effort in establishing guidelines for basic and extended quality control procedures for data from AWS. It would also be desirable to complete those items not completed yet due to the loss of the individuals previously assigned to the ET/AWS.

ET-SDUP requirements

2 full meetings in 2004

(a) The work plan of the Expert Team on Satellite System Utilisation (ET-SSUP) is based on the following three corner stones of improving data access, data use, and training and education in the use of satellite data and products. The items to be worked on result from an analysis of the answers to the Biennial Questionnaire, from activity reports from NMHS and affiliated institutions and from interactions with CGMS.

OPAG IOS ICT requirement

1 full meeting in fall of 2004

Replacement of certain Rapporteurs

6. Neither Mr Rösner nor Mr Sato is able to continue as Rapporteur in their respective areas.

Their work is greatly appreciated, but now it is time to find suitable replacements that can carry on the activities as spelled out in the terms of reference given below.

Rapporteur on GCOS Matters

(a) Liaise with the existing data quality monitoring centres of CBS and GCOS, regional rapporteurs on the GOS and GCOS to review, and provide information back to Members, as to how existing formal and informal arrangements can be used to improve the monitoring of CLIMAT and CLIMAT TEMP messages;

(b) Provide a brief report to the 2002 session of CBS describing, (1) changes, to the extent possible, in the exchange of CLIMAT and CLIMAT TEMP messages over the 1996 – 2002 period, and (2) advice provided to Members in relation to this matter;

(c) Continue preparation and maintenance of reviews of observing systems that are being designed under the auspices of GCOS (e.g., GUAN, GSN).

Note: Due to internal shifts and responsibilities within the Deutscher Wetterdienst, Mr Stefan Rösner is unable to continue as Rapporteur. Deutscher Wetterdienst will continue to operate the GSNMC.

Rapporteur on Scientific Evaluation of Observing System Experiments (OSEs) and Observing System Simulation Experiments (OSSEs)

(a) Prepare and maintain reviews of OSEs and OSSEs that are being undertaken by various NWP Centres around the globe and provide information for consideration by the OPAG-IOS;

(b) Develop proposals and guidance for specific OSE/OSSEs in consultation with the Expert Team on Observational Data Requirements and Redesign of the GOS, that are required for the redesign of the GOS.

Note: There is one Rapporteur on global and one on regional aspects:

- *Mr Jean Pailleux (Météo-France) is the Rapporteur on global aspects and will continue in that capacity*
- *Mr Nobu Sato (JMA) is the Rapporteur on regional aspects and is unable to continue due to other commitments within both JMA and WMO*

ANNEX II

Annex to Paragraph 3.2.1

Report of the Chairperson of the OPAG-ISS

Introduction

1. The Chair of the OPAG ISS presented a detailed report of activity at CBS-Ext.(02) (December 2002, Cairns, Australia). CBS endorsed the outcome of the ISS activities and directed on the most important activities for the next two years. The current status and the tentative planning of activity until CBS-XIII are addressed with regard to the terms of reference of the respective ICT, ETs and rapporteurs.

Expert Team for the Improved MTN and GTS (Chair: Peiliang Shi, China)

2. The Terms of reference of the ET gave focus on the medium-term (2-4 years) improvement of the GTS, and in particular a) develop and implement the improved MTN project, b) update the organisation and design principles for the GTS and c) provide guidance on technical, operational and administrative/financial aspects of telecommunication techniques and services for WWW operations, especially for the implementation of the GTS.

3. CBS-Ext.(02) endorsed the IMTN project consisting of “Cloud I” and “Cloud II” and noted with appreciation the firm implementation plans. XIV-Congress noted with much satisfaction that the IMTN implementation and operation had started at the end of 2002/early 2003, as initially planned, and it expressed its great appreciation for the collaborative effort made by the NMHSs concerned. Further implementation has continued, and upgrades of several MTN circuits (Tokyo, Beijing, New Delhi, Moscow) are firmly planned by the end of 2003. Further work is required for the implementation of the IMTN in Region I and III.

4. The ET-IMTN also developed guidance on the use of DVB and DAB techniques. It should be emphasized that the tasks of the ET-IMTN, and in particular b) and c) are interdependent with the tasks of the Expert Team on Enhanced Utilisation of Data Communication System. This required coordination lead to a joint meeting of the ET-EUDCS and ET-IMTN in May 2002, which was very effective.

5. The development of the implementation and operation of the GTS as regards regional parts (RMTN) is the responsibility of the respective regional working groups on the WWW (WG-PIW), taking benefit from the work of the CBS/OPAG-ISS. Diagrams of the current status of implementation of the GTS in each Region are posted on the WMO Web server, and CBS Newsletters are urging all WMO Members to provide feedback to maintain updated information.

Expert Team on Enhanced Utilisation of Data Communication System (Chair: Jean-François Gagnon, Canada)

6. The ET-EUDCS, which had a joint meeting with the ET-IMTN in May 2002, further developed recommended practices for TCP/IP and related protocols, including a file naming convention for operational routeing and distribution, as well as new guidance for using the Internet between GTS centres (via e-mail and VPNs). Its outcome, after its review by the ICT-ISS, was endorsed by CBS-Ext.(02). With respect to the new file naming convention, CBS requested to assess a practical implementation date and to develop urgently the detailed complementary procedures for its applications.

7. The operational use of the Internet by NMHSs, while minimizing the operational and security risks, is a matter of increasing importance. The *WMO Guide on Internet Practices* is under review and update, taking into account the changes in relevant technology, and is planned to be available by end of November (English version). The guidance document on VPNs is strongly influenced by the very rapid technological development, and should be further developed and reviewed.

8. An ad-hoc Expert meeting on enhanced utilisation of data communication services (esp. Internet) is planned in December 2003 to further develop the guidance material. A joint meeting of the ET-EUDCS and ET-IMTN is planned in 2004 (first half) to consolidate all contributions with a view to CBS-XIII. The attendance to the joint meeting should be harmonized from the two ETs' membership (one expert from Australia, Brazil, Canada, China, France, Germany, Japan, Kenya, Russian Federation, Turkey, United Kingdom, USA, plus ECMWF & ASECNA).

Expert Team on Data Representation and Codes (Chair: Jean Clochard, France)

9. A meeting of the ET-DR&C (Arusha, Tanzania, 17 - 21 February 2003) developed, for experimental testing, two new compression schemes for GRIB Edition2 based on JPEG 2000 and PNG, and finalized the guide for GRIB-2. Descriptors to BUFR Tables for oceanographic data and for new satellite data, including ENVISAT and AIRS satellites were added. A proposal to encode in BUFR all SIGMET data was finalized, and a programme for a Workshop on use of XML in meteorology was prepared. The ET-DR&C meeting was followed by the first seminar on TDCF held for African English speaking countries.

10. A training seminar on TDCF for RA III/IV is planned in Costa-Rica (10-14 November 2003). A meeting of the ET-DR&C is planned for April 2004, in RA II or V, to be followed by a training seminar for RA II (East) and RA V countries.

Expert Team on Migration to Table Driven Code Forms (Chair: Fred Branski, USA)

11. XIV-Congress endorsed the plan for a WMO-wide migration to table-driven code forms developed by CBS, noting that the migration plan allowed sufficient time and flexibility for implementation. Congress stressed that the successful migration in developing countries would depend on capacity building, and that training was a fundamental prerequisite. Congress requested the Secretary-General to organize a training programme covering all WMO Regions over the period 2003-2005. It highlighted the complexity of the migration process and requested CBS to put in place an effective implementation/coordination mechanism for guiding, assisting and monitoring the migration to TDCF.

12. Comprehensive information on the migration plan, case study and TDCF has been posted on the WMO Web server. A Questionnaire on migration to TDCF will be sent soon to national Focal points on code matters. To better ensure the effective central coordination and monitoring of the transition to TCDF, the ET on Migration should be converted into an ICT on Migration to TDCF, and its TOR will be adjusted accordingly. Its meeting is planned in the 2nd quarter of 2004 to prepare a comprehensive report to CBS XIII.

Expert Team on Integrated Data Management (Chair: Steve Foreman, United Kingdom)

13. CBS-Ext.(02) endorsed the conclusions of ET-IDM on WMO Metadata based on the ISO standard for geographic metadata (ISO DIS 19115), and the related use of XML. CBS recognized that several further actions were required from all Programmes before WMO could adopt the metadata standard for operational use. Metadata is central to the development of the future WMO information system. CBS requested to pursue the development of the WMO metadata standard, involving, to the largest extent possible, members of other Commissions. In this regard XIV- Congress, noting the crucial importance of metadata for the FWIS, requested all WMO Programmes to join their efforts in the further development of detailed WMO metadata standards.

14. As indicated above, CBS-Ext.(02) agreed upon a file naming convention for operational routeing and distribution. The new file naming convention facilitates a smooth transition from current abbreviated headings, but needs the development of definition tables for the required WMO product identifier of new data/products. This task, which is strongly related to the Metadata concept, should be undertaken by the ET-IDM, in coordination with the ET-EUDCS.

15. A meeting of ET-IDM is planned in December 2003, to further develop the detailed WMO metadata standards and related procedures, taking also into account relevant outcome of the ITT-FWIS meeting (see below). A further meeting is planned in 2004 (first half), to consolidate all proposals on Integrated Data Management matters with a view to CBS-XIII.

16. A consultant undertakes a study on the integration of data management activities of the WMO scientific/technical programmes and technical commissions. The study will include recommendations on areas, strategies and design factors to enhance data management standardisation and compatibility across WMO scientific/technical programmes and technical commissions. It will also propose co-ordination mechanisms for implementation by the Secretariat and the technical commissions, which have the potential to enhance and facilitate the co-ordination and implementation of a WMO inter-programme data management framework that meets the current and emerging requirements. The consultant's report is expected by the end of 2003.

Rapporteur on Monitoring (Jean-Pierre Bourdette, France)

17. A workshop on WWW quantitative monitoring (Toulouse, 2 - 4 June 2003) reviewed the Integrated WWW Monitoring (IWM) procedures and the major role of RTHs. It considered the arrangements for the implementation of the IWM pilot project and the extension of the Special MTN Monitoring (SMM). A proposal for monitoring BUFR data, as well as general procedures for a pilot test of daily near-real monitoring were developed. It also drafted general specifications of a monitoring application on a PC, which would facilitate the transition to IWM. As a follow-up, RTH Offenbach prepared SMM pre-analysis files for the monitoring of aircraft BUFR reports. No other further action related to the IWM was yet reported.

Steering Group on Radio-Frequency Coordination (Chair: Hans Richner, Switzerland)

18. The SG-RFC coordinated WMO contributions to ITU-R and preparatory activities on the issues included in the agenda of ITU World Radiocommunication Conference 2003 (WRC-03, Geneva, 9 June-4 July 2003). WRC-03 had a favourable outcome and closed serious issues that had been debated since 1992, including the bands 401-406 MHz (radiosondes), 1 675-1 710 MHz (radiosondes and meteorological satellites) and 2 700-2 900 MHz (meteorological radar). The most important issues are now related to the protection of spaceborne passive sensing, as emphasized by XIV-Congress (ref. Resolution 3). One meeting of the SG-RFC is planned in 2004 (first half) to coordinate WMO's participation and contribution to relevant ITU-R work.

Implementation-Coordination Team on Information Systems and Services (Chair: OPAG Chair)

19. One meeting of the ICT-ISS is planned in the third quarter of 2004 (depending upon the actual dates of CBS-XIII) to review and consolidate all the proposals and recommendations to CBS from the ISS/ETs.

20. The terms of reference of the ICT-ISS address the further development of operational information exchange procedures, including allocation of abbreviated heading tables for new data and products. This task requires a continuous review to support WWW/GTS operation, taking into account the requests and requirements that are mainly expressed by the RTHs located on the MTN, associated with the major GDPFS centres. Furthermore, CBS-Ext.(02) agreed upon a scheme of allocations of abbreviated headings to facilitate the migration to table-driven code forms. It further agreed that the relevant Tables of the *Manual on the GTS* should be revised accordingly, as soon as the actual need for exchanging the various type of "migrated data" arose, and it requested the OPAG on ISS to keep the matter under continuous review. To assist the ICT-ISS in this task, an ad-hoc sub-group will be established to coordinate, by correspondence (E-mail), proposals for the allocation of new abbreviated headings required for the exchange of new data and products on the GTS and for the code migration. The proposals would be submitted to the OPAG-ISS chair for agreement on an experimental use, and then formally endorsed by CBS (through a session or its president, as appropriate). The ad-hoc sub-group should comprise:

- The OPAG-ISS co-chair
- The ET-DRC chair
- The ET- migration to TCDF chair

- Focal points of RTHs located on the MTN
- Assistance by a WMO Secretariat officer.

Inter-Programme Task Team on Future WMO Information Systems (Chair: Geerd-Rudiger Hoffmann, Germany)

21. XIV-Congress supported the views and conclusions of CBS that the Future WMO Information System (FWIS) was required as an overarching approach. It emphasized that the implementation of FWIS should build upon the most successful components of existing WMO information systems in an evolutionary process, through a smooth and coordinated transition. In particular, the FWIS would build upon the GTS with respect to highly reliable delivery of time-critical data and products, and the Improved MTN would be the basis for the core communication network. Congress emphasized that the comprehensive information exchange requirements of all WMO Programmes, as regarded information types and volumes, timeliness, sources and users, security, etc., needed to be taken into account to consolidate the FWIS concept, and to develop design and implementation plans.

22. When considering the study on policy-level implications of the FWIS, XIV-Congress agreed that the impact of the FWIS on Members' responsibilities and resources appeared to be commensurable with the development that would be anyhow needed to face the general evolution of information and communication technologies and of Members' requirements. It requested the Executive Council and CBS as well as the other technical commissions involved in the FWIS development to give particular attention to the impact on Members' responsibilities and resources and the policy aspects.

23. Congress requested CBS to pursue the further development of the FWIS towards the refinement and consolidation of the concept and then the design and implementation planning phases. It noted that, since all WMO Programmes stood to benefit, each should actively participate and contribute its own expertise and resources in all phases of the development of the FWIS. Congress emphasized that the support and involvement of many members of the WMO community, including especially regional associations and technical commissions, was needed.

24. A meeting of the ITT-FWIS will be held from 20-24 October 2003 in Kuala Lumpur, Malaysia. This meeting, taking into account Congress directives, will further refine and consolidate the FWIS concept, and work on an outlook of design and implementation phases, including transition. It will also consider the outcome of studies on the Virtual GISC prototype being undertaken by RTHs Bracknell, Offenbach and Toulouse in association with the ECMWF and EUMETSAT. The attendance to the meeting includes additional GTS expertise (Mr H. Ichijo, Japan), as requested by CBS-Ext.(02).

25. A further ITT-FWIS meeting is planned for 2004. In light of Congress directives, CBS-MG may wish to review and discuss the membership of the ITT-FWIS, as well as possible mechanisms to enhance the active participation and contribution of WMO Programmes, technical commissions and regional associations.

ANNEX III

Annex to Paragraph 3.3.1

Report of the Chairperson of the OPAG-DPFS

OPAG on DPFS planned activities

1. The outcome of Congress suggests a need to establish under the OPAG on DPFS an ET on severe weather forecasting; otherwise specific expert meetings will address the severe weather issues. The management Group should take action on this issue.

2. The outcome of CBS indicated the need for Meteorological services to collaborate with Hydrological Services to develop and implement the use of forecasts and warnings in flood forecasting and in particular take part in a WMO Action Programme on Flood forecasting/warning. A Preparatory meeting for a workshop on flood forecasting was held in Geneva in April 2003 at which the CBS Rapporteur on severe weather participated. The management Group should give guidance on CBS participation in further development of the action plan and the workshop.

3. With respect to Seasonal to Inter-annual forecasting in particular availability of SI forecasts from global producing centres, Workshop of global producers of SI forecasts was held in Geneva, 10-13 February 2003. Follow-up global activities will be under the ET on Infrastructure for LRF and regional programmes in some regions. The management group may wish to give guidance on the way forward. The outcome of CBS also indicated the need for development of guidance for training on DPFS in particular a capacity training policy, using approaches similar to those of satellite activities. The management Group should give guidance on this issue.

4. The OPAG on DPFS existing ETs will also take up specific future tasks as noted by CBS Extraordinary 2002 (in complement/adjustment of terms of reference of the OPAG Teams and rapporteurs) as follows:

- The Expert Team on the Infrastructure for Long-range Forecasting will continue to develop procedures for the exchange of long-range forecasting products.
- Expert teams on verification of long-range forecasts and EPS still have some tasks to continue in order to develop the verification system for long-range forecasts and implementation of EPS.
- The task for verification and long-range forecasts should include:

  (*a*)Coordinate the provision of long-range forecast verification scores and related information to NMHSs and RCCs, real-time monitoring of forecasts and relevant exchange between participating centres and institutes;

  (b) Encourage and monitor feedback from NMHSs and RCCs on the usefulness of verification information provided by producing centres under the scheme;

  (c) Review the effectiveness of the verification scheme in assisting NMHSs and RCCs to use the global-scale products to provide end-user services;

  (d) Contribute to the further development of the activities of Lead Centres' on their Web sites with links to producing centres and the development and provision of relevant software to NMHSs and RCCs as capacity building measures to access information from producing centres to produce user-friendly verification information;

  (e) Recommend updates to operational practices to be followed in terms of the information on validation results to be attached to the long-range forecast products in the light of the experience and progress in research on verification activities;

  (f) Develop relevant standards for representation and presentation of verification information in maps and contingency tables;

  (g) In consultation with CAS (CLIVAR/Working Group on Seasonal to Inter-annual Prediction) and CCl, propose recommendations for improvements to CBS.

- The ET on EPS should develop an outline plan for the development of a workshop on EPS, build on the available documentation and develop components on the interpretation of EPS;
- The EPS aspects should include:
  - (a) Developing education and training material for forecasters including rationale of concepts and strategies of EPS, and on the nature, interpretation and application of EPS products;
  - (b) Reviewing progress on EPS and its application to severe weather forecasting including progress on regional model based EPS, and prepare ways to make best operational usage of these developments;
  - (c) Enhancing verification of EPS products;
  - (d) Reporting on verification measures for EPS, and skill of available products.
- There is a need for NMSs to explore the application of atmospheric transport models to air quality, propagation of air borne diseases, other hazards or consequences related to natural disaster, with the cooperation of RSMCs with specialization in emergency response. The expansion of modelling applications beyond emergency response for nuclear incidents should be given consideration in relation to how best to organize them as well as additional funding requirements (e.g. meetings, training, documentation etc.).
- Nowcasting is a growing activity that will need some attention in the future. Activities such as a review of operational requirements for nowcasting, of technology and products available, will be required to raise awareness among Members, and to help them develop a nowcasting system.
- Computer-aided learning modules should also be developed.
- Congress requested the establishment of a WMO standard and/or recommended practice for weather forecasting techniques. It is proposed to have an expert team for this task in 2005, with assistance of consultant work.
- Finally there is an ongoing need for capacity building, such as the development of applications, training and the interpretation of products, and for developing expertise to run models on workstations/PCs.

5. The OPAG chair proposes the revised Terms of reference and deliverables for the different Expert Teams as included in the Annex to take into account the relevant CBS Ext.(2002) conclusions and Cg-XIV decisions (see Doc 3.3(2)) on DPFS programme and activities.

Specific planned activities in 2003, 2004-2005

2003
- ET on EPS - Geneva, 27-31 October 2003
- Meeting of Lead Centres for Verification of Long Range Forecasts, Montreal, 24-28 November 2003

2004
- ERA Co-ordination Group - Geneva, March 2004 (tentative dates)
- Expert meeting on Early warning systems for response strategies to severe weather - March 2004
- Meeting on severe weather forecasting -June 2004
- ICM on DPFS issues, NWP output on severe weather - September 2004
- First workshop on use of EPS products – with strong training component (Venue and date to be decided by ET on EPS in October 2003) - October 2004?
- Workshop on emergency response to severe weather and extreme natural events - August 2004

NOTE: Offers to host the meetings are highly solicited and very welcome

2005
- EM on Establishment of WMO standards for weather forecasting techniques
- EM dissemination and use of LRF products
- Second workshop on use of EPS products - with strong training component
- Workshop on emergency response to severe weather and extreme natural events
- Regional seminar on PWS and GDPFS to better support natural disaster prevention
- Training seminar on GDPFS, including strong component on use of EPS products

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ANNEX IV

Annex to Paragraph 3.4.1

Report of the Chairperson of the OPAG-PWS

Activities and plans of the OPAG on PWS

1. The strong level of interest at Congress XIV in the Public Weather Services Programme indicated that the work of the OPAG on PWS has been focussed on the issues of most concern to Members, but that there is a need for some adjustment of the programme to take account of the report of Congress, especially in aspects of coordination within CBS and with other parts of WMO on the main cross-cutting issues, including the programmes on disaster management and the new Space programme.

ET's on Forecasts Warnings and Exchange and Public Understanding (ET FWEU)

2. The main impact of the work of this Team led by C Y Lam of Hong Kong (China) continues to be related to the establishment of pilot Web sites for official warnings and for cities forecasts. The cities Web site has been especially successful in gaining the participation of WMO Members who can place both climatological and forecast information on the site. The implementation of these trials has helped address some other important issues such as the formats for exchange of forecasts and the use of standardised graphics for consistent, easily understood, attractive, and economical presentation of forecasts.

ET on Product development and service assessment (ET PDSA)

3. This Team lead by John Guiney (USA) had a successful meeting in Kuala Lumpur in September 2003. The accumulated guidance and training material on PWS product development and service assessment (as well as on media relations, disaster management and forecast warnings and exchange) has all been placed on the PWS Web site.

4. This ET meeting also focussed on the areas where collaboration with the other OPAGS and with other Commissions such as CCl needs to be strengthened. Particular attention was given to the need to translate ensemble prediction techniques into improved PWS products and services and the needs for increased training and education material on the effective use of probabilistic forecasts.

5. The Team is addressing the issue of making use of the potential of new technology and data exchange over the Internet to deliver more effective Public Weather Services, and in this context will interact more closely with the OPAGs on ISS and GDPFS.

6. Specific initiatives are being taken to develop two sets of guidelines for NMSs - on air quality and biometeorology services, and on quality management approaches for PWS.

ET on Media Issues (ET MI)

7. The ET on Media Issues is scheduled to be held in Moscow, 20-24 October 2003. Though dialogue with the international media has improved and the small International Association of Broadcast Meteorology (IABM) is supportive of the role of NMS's in delivery of public weather services, there are still significant issues where both international and local media do not give sufficient attribution to the NMSs, especially in warning situations. In smaller countries in particular this can have a significant impact on the visibility and credibility of the NMS.

8. The IABM has advised of plans for the first International Conference on Broadcast Meteorology being held in Barcelona, Spain in June 2004. The ET will address ways that WMO and NMSs can effectively contribute to and interact with this conference.

ICT on PWS

9. The ICT on PWS last met in Athens just prior to the Cairns session of CBS (Ext) and is scheduled to meet again from November 24 – 28 in Hong Kong. The ICT will examine options to adjust the structure of the Teams to better reflect the new challenges facing the Public Weather Services Programme in the light of new cross cutting programs and the guidance from Congress.

10. Key issues to be addressed include:

- Application of improved capability and new technology, such as ensemble forecasting techniques;
- Formats for exchange of public weather forecasts and warnings;
- Responses to the new WMO programmes on Space and Disaster Management;
- Maximising the benefits from research, especially on high impact weather events;
- Broadening the range of services delivered in areas such as air quality, other environmental services and health;
- Improved integration of the delivery of information and services related to all time scales – historical, nowcasting, short-range, medium-range, seasonal and inter-annual to climate time scales;
- Relations with the media;
- Relations with the meteorological private sector;
- User evaluation of Public Weather Services;
- Economic aspects of public weather services;
- Quality management.

11. The number of cross cutting issues suggests that there would be benefit in looking at ways of more effective interaction among the various CBS OPAG ET's addressing different aspects of these issues.

Links with WWRP

12. The Chair of the OPAG has continued to represent CBS on the Scientific Steering Committee of the WWRP. The WWRP is focussed on research proposals and projects dealing with high impact severe weather phenomena, with the assessment of research in terms of the translation into operations, and demonstrable societal and economic benefits. This has proved beneficial to CBS and the WWRP, especially on projects and proposals related to nowcasting, MAP, heavy rainfall prediction, and sand and dust storms. The development of the proposed THORPEX research and the scope and scale of this project requires new and additional interaction between CBS and the THORPEX management structure.

Training and Capacity Building

13. The WMO Secretariat continues to run a small but effective program of training workshops on PWS, often in conjunction with other programmes such as the tropical Cyclone Programme as a way of minimising costs. The substantial guidance material developed in the form of publications, CDs and Web material by the OPAG (and prior Working Group) is used in these workshops and the OPAG assists with arranging lectures where required.

Technical Conference on Public Weather Services

14. This will require substantial work by the OPAG and collaboration with other OPAGs on cross cutting issues. This is dealt with elsewhere in agenda of the Management Group meeting.

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ANNEX V

Annex to Paragraph 4.1

Draft Provisional Agenda for CBS-XIII

1 OPENING OF THE SESSION

2 ORGANIZATION OF THE SESSION

- 2.1 Consideration of the report on credentials
- 2.2 Adoption of the agenda
- 2.3 Establishment of committees
- 2.4 Other organizational questions

3 REPORT BY THE PRESIDENT OF THE COMMISSION

4 REVIEW OF DECISIONS OF FOURTEENTH CONGRESS AND EXECUTIVE COUNCIL RELATED TO THE COMMISSION

5 STATUS OF WORLD WEATHER WATCH IMPLEMENTATION AND OPERATION, INCLUDING RELEVANT WMO SPACE PROGRAMME ASPECTS

6 WORLD WEATHER WATCH PROGRAMME, SUPPORT FUNCTIONS AND PUBLIC WEATHER SERVICES, INCLUDING THE REPORTS BY THE CHAIRS OF THE OPEN PROGRAMME AREA GROUPS

- 6.1 Integrated Observing Systems (IOS)
- 6.2 Information Systems and Services (ISS)
- 6.3 Data Processing and Forecasting Systems (DPFS)
- 6.4 Public Weather Services (PWS)
- 6.5 Operational Information Service (OIS)

7 LONG-TERM PLANNING RELEVANT TO THE COMMISSION

8 REVIEW OF THE WORKING STRUCTURE OF THE COMMISSION

9 THE COMMISSION'S WORK PROGRAMME; ESTABLISHMENT OF EXPERT TEAMS AND IMPLEMENTATION-COORDINATION TEAMS

10 REVIEW OF PREVIOUS RESOLUTIONS AND RECOMMENDATIONS OF THE COMMISSION AND RELEVANT EXECUTIVE COUNCIL RESOLUTIONS

11 ELECTION OF OFFICERS

12 DATE AND PLACE OF THE NEXT SESSION

13 CLOSURE OF THE SESSION

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