WORLD METEOROLOGICAL ORGANIZATION

COMMISSION FOR BASIC SYSTEMS

MANAGEMENT GROUP

FIRST MEETING

FINAL REPORT

GENEVA, 24 - 27 JANUARY 2001

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Executive Summary

Reviewing the outcome of the twelfth session of the Commission, the CBS-MG recalled that the general feeling of the participants at the session was that the procedures for determining the terms of reference and membership of the teams were regarded as transparent with all viewpoints represented. Although it noted that the Commission had stressed that expert teams were not of a permanent nature, it felt that continuity in membership is important to ensure that expertise and experience are utilised effectively.

The MG reviewed the working programmes of the OPAGs and their teams and agreed on their working priorities and tentative meeting places. It decided that in the future the terms of reference of teams should include more specific target dates for deliverables to clarify which teams are expected to accomplish their tasks within two years and which have been assigned tasks with longer range targets.

The MG agreed that the CBS Technical Conference on WMO Information Systems and Services had been a very successful, had resulted in presentation of many excellent papers and a good exchange of ideas between participants, and had increased participation in the Commission session. The Group recommended a conference on WMO data processing and forecasting systems be held in association with the extraordinary session of CBS in 2002.

The MG nominated Mr Jean Pailleux (France) and Mr Sato (Japan) as Rapporteurs on Scientific Evaluation of OSEs and OSSEs. Considering the terms of reference of the IOS rapporteurs it adjusted the terms of reference of the Rapporteurs on Scientific Evaluation of OSEs and OSSEs, the Rapporteur on GCOS Matters, and the Rapporteur on Regulatory Material.

The Group felt that the development of the WMO metadata standards has a very high priority and urged the ET on Integrated Data Management to develop a draft metadata standard and initiate pilot implementation tests as quickly as possible. Noting that the WMO Bureau had asked the CBS president to make a presentation on the implications of the proposal for future WMO information systems to the Executive Council, it agreed that, the next meeting of the task team, should be postponed until after EC. It also asked the ET on Enhanced Utilization of Data Communication Systems to develop file naming standards for exchange of files over the GTS as a matter of urgency.

The MG considered the terms of reference and tasks assigned to the teams of the OPAG-DPFS and agreed that its activities were well focused and on track and did not make any adjustments to the terms of reference of the teams.

The Group noted developing plans for GDIN (Global Disaster Information Network) and agreed PWS should pursue coordination and collaboration on this project on issues of joint interest. It also suggested that PWS participate, to the extent possible, in the forecasting demonstration project during the 2004 Olympics in Athens that is being considered by the WWRP.

The Group considered the division of responsibilities in the leadership of the OPAGs and the role of the new OPAG co-chairs. Each of the chairs and co-chairs discussed their respective roles and responsibilities and came to an understanding of their working arrangements and the tasks that each would lead.

The MG reviewed the preliminary project plan and questionnaire that had been submitted by the Rapporteur on Innovative Collaboration. It agreed on the proposed work schedule but provided some advice on the content and distribution list for the proposed questionnaire.

Considering the terms of reference of the Rapporteur on Total Quality Management, the Group felt that it was not clear if the proposed work plan would address the critical issues. It, therefore, provided some additional direction and advice on the proposed work plan and requested a first report by October 2001.

The Group carefully reviewed the vision statement, outcomes, strategies and associated goals for the 6LTP that had been prepared by the EC Working Group on Long-term Planning and had many comments and suggestions. In general, MG felt that the document was in need of major adjustment and revision. The Group recommended that a preamble be added to explain the planning framework used, including the relationship between the vision, outcomes and strategies. It should also introduce readers to WMO, define what it is and the respective roles of the WMO, Members, and the Secretariat. It also provided specific suggestions and advice by providing a marked-up copy of the draft as an annex to the MG report.

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 first meeting of the CBS Management Group (MG) (formerly the CBS Advisory Working Group) convened in the headquarters of the WMO on 24 January 2001. The meeting was opened at 9 a.m. by the president of CBS, Dr G. Love. The list of participants is given at the end of this report.

1.1.2 In his opening remarks, Dr Love outlined the major issues facing CBS. He noted that updates to the Manual on the GOS, integration of new technologies into information systems and services, long-range forecasting and public weather services were of particular interest. Mr M. Jarraud, Deputy Secretary-General of WMO, welcomed the participants on behalf of the Secretary-General and outlined the overall objectives of the meeting. He explained the arrangements made to support the work of the Group and assured the meeting that he and his staff would do everything possible to ensure its success. He hoped that the Group would have a fruitful meeting and that all the participants would have a very pleasant stay in Geneva.

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.

2. REVIEW OF THE TWELFTH SESSION OF CBS (agenda item 2)

2.1 The MG reviewed the outcome of the twelfth session of the Commission. It considered the organization and conduct of the session, particularly the procedures for defining the terms of reference of expert and implementation/coordination teams, and the impact of holding a technical conference in association with the session.

2.2 It recalled that the general feeling of the participants at the session was that the procedures for determining the terms of reference and membership of the teams were regarded as transparent with all viewpoints represented. It agreed that one of the keys to success was that someone from outside of the MG had chaired the ad-hoc group at CBS. The Group felt that, although successful, the process was very time consuming and that procedures for drafting the terms of reference could perhaps be streamlined. It suggested that a small group be convened for each OPAG to draft the terms of reference for its teams well in advance of the Commission session. The draft terms of reference could then be circulated and refined so that the terms of reference would not require as much discussion during the session.

2.3 The MG discussed the terms of office of the OPAG chairs and co-chairs as well as the expected duration of expert teams. Based on Resolution 2 (CBS-Ext.(98)) the OPAG chairs and co-chairs have tenure for only the two-year period between sessions of the Commission. It noted that the Commission had stressed that expert teams were not of a permanent nature and should be disbanded once their assigned tasks have been accomplished. However, the Group also noted that continuity in membership is important to ensure that expertise and experience is utilised effectively. It agreed that in the future the terms of reference of teams should include approximate target dates for their deliverables to clarify which teams are expected to accomplish their tasks within two years and which have been assigned tasks with longer range targets.

2.4 Concerning the support for the Commission session by the Secretariat, the Group felt that the support received was very good, with one exception. The Group considered that the delays in distribution of documents during the session was an issue that should be resolved before CBS meets

again in 2002. The Secretariat will make suggestions on how to avoid this issue in the future at the next MG meeting.

2.5 The MG agreed that the CBS Technical Conference on WMO Information Systems and Services that was held in conjunction with the twelfth session of the Commission was a great success and resulted in presentation of many excellent papers and a good exchange of ideas between participants. It congratulated the chair and conference committee for their work. The Group noted that the conference had good representation from developing as well as developed countries and many participants were able to remain in Geneva to attend the Commission session. They felt that this had significantly enhanced participation in the session and had contributed to its being the largest meeting of a WMO Technical Commission ever held. The Group agreed that holding a conference in conjunction with a Commission session significantly improved participation of experts from developing countries and recommended a conference on WMO data processing and forecasting systems, perhaps with emphasis on ensemble prediction systems, be held in association with the extraordinary session of CBS in 2002. It decided to place this topic on the agenda for its next meeting with the chair and co-chair of OPAG-DPFS to undertake preparatory work prior to the meeting.

3. CBS WORK PROGRAMME (agenda item 3)

3.1 At its twelfth session the Commission defined the OPAG expert and implementation/coordination teams and rapporteurs and their corresponding terms of reference. The CBS-MG considered the results expected of the teams and rapporteurs and provided some additional guidance on their work. For planning purposes a provisional meeting plan is provided in the annex to this paragraph.

3.2 OPAG-IOS

3.2.1 The president informed the meeting of the results of the recent Consultative Meeting on High-level Policy on Satellite Matters, especially with respect to the possible impacts on the GOS. He reported that the meeting felt that the rolling review of requirements for the GOS needed to be broader and less focused on the WWW (primarily because the WWW requirements had been well defined and the requirements of other Programmes less so). He noted that the research and development satellites were likely to become components of the GOS and that this presented several interesting opportunities. For example, the R&D satellite operators have a need for in situ data for calibration and validation and therefore might consider providing long-term support to the in situ observing networks.

3.2.2 During its deliberations on the redesign of the GOS the MG noted that it is a very difficult and complex issue. It has been widely acknowledged that although the in situ network is a critical component, it suffers from serious data quantity and quality problems. The Group agreed that there are no easy solutions on the horizon and innovative and imaginative solutions must be considered. It expressed some hope that the Rapporteur on Innovative Collaboration might provide some useful advice on the data quantity issue and agreed to come back to this when considering the rapporteurs' terms of reference.

3.2.3 There was considerable discussion concerning the relationship and interactions between the IOS Rapporteurs on Scientific Evaluation of Observing System Experiments (OSEs) and Observing System Simulation Experiments (OSSEs) and the DPFS Rapporteur on the Impact of Changes to GOS on NWP. The Group agreed that there were significant differences in their terms of reference but that there appeared to be some overlap. It agreed that there should be two-way interaction between the Rapporteurs on OSEs and OSSEs and the ET on the Redesign of the GOS. The rapporteurs should keep abreast of the various OSEs and OSSEs that are being conducted by the various centres and provide information to the ET but should also receive guidance from the ET on what OSEs and OSSEs could best answer issues of significance to the team's work. The Group felt that there should be more emphasis on coordination of activities between centres and decided to adjust the terms of reference of the Rapporteurs on Scientific Evaluation of OSE/OSSEs as follows:

(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.

The MG nominated Mr Jean Pailleux (France) and Mr Sato as Rapporteurs on Scientific Evaluation of OSEs and OSSEs. Mr Pailleux will concentrate on global OSE/OSSEs and Mr Sato will concentrate on mesoscale. It requested both rapporteurs to prepare a first report on their activities prior to the next meeting of the MG in late 2001.

3.2.4 The MG noted that Executive Council had asked CBS to monitor the implementation of the GCOS Surface Network (GSN) and the GCOS Upper Air Network (GUAN). The Group considered the responsibilities of the Rapporteur on GCOS Matters in relationship to this topic and agreed that the existing terms of reference were too broad and did not specifically address some of the most critical issues of concern. Consequently it decided to adjust the terms of reference of the Rapporteur as follows:

(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).

3.2.5 The meeting discussed the tasks assigned to the Rapporteur on Regulatory Material in light of proposed changes to the Manual on the GOS that are to be considered by Executive Council, especially concerning the space-based component. The Group felt that, if approved by EC, it would take several years to prepare the new material for the Manual but that there was an urgent need for the Manual to be updated more quickly. It agreed that the updates to the Manual on the GOS should therefore be done in two stages: material now available should be used to develop updates to the Manual in time to be considered by CBS at its next session. Additional updates on the space-based components could also be prepared over the next several years. It decided to clarify the terms of reference of the Rapporteur as follows:

(a) review and update sections of the Manual on the GOS, and harmonise available material on the conventional (in-situ) and satellite components of the GOS.

(b) arrange for the review of the revised draft of the Manual on the GOS by a consultant/small expert group with the aim of submitting the resulting text to the 2002 session of CBS.

3.3 OPAG-ISS

3.3.1 The MG considered the terms of reference and tasks assigned to the teams of the OPAG-ISS. During its discussion of the tasks of the ET on Data Representation and Codes it noted that some users of codes had expressed concern about the decision of CBS to concentrate on the further development of table-driven code forms and to phase out the use of the traditional character codes. However, the Group agreed that no action was necessary until this issue was considered by a higher policy-level body and new advice was given to CBS.

3.3.2 The MG noted that the development of the WMO metadata standards were a very high priority. It urged the ET on Integrated Data Management to develop a draft metadata standard and initiate pilot implementation tests as quickly as possible.

3.3.3 During its deliberations on the improved MTN, the Group agreed that adjustments to new telecommunications technology and funding arrangements can present quite a challenge. There are difficult administrative and financial issues. Planning, reaching agreement on national responsibilities and issuing tenders is very time consuming. The MG agreed that it is important to have concrete results that can be presented to CBS in 2002.

3.3.4 The MG discussed the tasks assigned to the Interprogramme Task Team on Future WMO Information Systems. It noted that the WMO Bureau felt that the plans for future WMO information systems had far-reaching implications and had asked the CBS president to make a presentation on the technical, financial, administrative and political implications of the proposals to the next meeting of the Executive Council. Therefore, the next meeting of the task team, which had been scheduled to be held in May, should be postponed until after EC.

3.3.5 Considering the terms of reference of the ET on Enhanced Utilization of Data Communication Systems, the Group agreed that the ET should also be tasked to develop file naming standards for exchange of files over the GTS as a matter of urgency.

3.4 OPAG-DPFS

3.4.1 The MG considered the terms of reference and tasks assigned to the teams of the OPAG-DPFS and noted that one of the most important issues concerned the infrastructure for the provision of long-range forecasts. It agreed that the activities being undertaken to respond to this issue were well focused and on track and did not think any adjustments to the terms of reference of the teams were necessary.

3.4.2 Possible regional training workshops on ensemble prediction systems (EPS) were discussed. The Group agreed that this was a priority area since many NMHSs were not sure how these products should be used. However, the Group felt that this training should not take place until EPS products were available within the relevant NMHSs. The Group also agreed that EPS was evolving so rapidly that there was a need for a mechanism to support continuous training that could keep up with the advances in the field. It suggested that the training materials be reviewed frequently and updated as users and producers develop more experience with EPS.

3.5 OPAG-PWS

3.5.1 The MG acknowledged that it was a challenge for the OPAG-PWS to develop specific proposals for their broad programme. Nonetheless, it was important that they make progress because to a large extent the public's perception of the NMHS depends upon its public weather services. It was pleased to note that the OPAG-PWS chair wanted to ensure appropriate coordination with the other OPAGs on cross-cutting issues and all agreed to cooperate on joint issues wherever needed.

3.5.2 The MG noted that the proposed pilot project on establishing a Web site for collection of warnings to improve access to warnings by the international media and among Members was progressing and would be reviewed at the meeting of the ET on Media Issues later this year. Regarding the proposed pilot project for a Web site to improve international exchange of cities forecasts, the MG noted the connection with plans for future WMO information systems and the need to take account of the outcome of discussions at the next EC session referred to under paragraph 3.3.4 above.

3.5.3 The Group noted with interest that the international emergency management community was developing plans for GDIN (Global Disaster Information Network), which was the proposed global equivalent of EMWIN (Emergency Managers Weather Information Network). It agreed that this provided a good opportunity for collaborative activities and that PWS should pursue coordination and collaboration on this project on issues of joint interest.

3.5.4 The meeting considered the links between PWS and the World Weather Research Programme (WWRP) and was pleased that there had been good cooperation to date. It noted that the WWRP was considering a possible forecasting demonstration project during the 2004 Olympics in Athens and agreed PWS should participate to the extent possible. The MG encouraged the other OPAGs, particularly DPFS and ISS, to develop closer links with the WWRP.

3.6 Division of responsibilities between OPAG chairs and co-chairs

3.6.1 The Group considered the division of responsibilities in the leadership of the OPAGs and the role of the new OPAG co-chairs. Each of the chairs and co-chairs discussed their respective roles and responsibilities and came to an understanding of their working arrangements and the tasks that each would lead. Mr Saloum, will focus on the redesign of the GOS, particularly its impact on developing countries, and on the wider use of data from automatic weather stations in the WWW. He will also oversee the work of the Rapporteur on GCOS and the Rapporteur on Improvement of Volume A. Mr Shi, will focus on his chairmanship of the ET on the Improved MTN, regional telecommunication partnerships, will oversee the work of the Rapporteur on Quantity Monitoring, will represent the chair at regional meetings as appropriate and will assist the chair with other tasks as necessary. In addition to his chairmanship of the ET on EPS, Mr Sato will have primary responsibility for the liaison between DPFS and IOS concerning of OSE/OSSEs and will assist in the preparation of the proposed technical conference on DPFS to be held in conjunction with the next session of the Commission. Mr Dall'Antonia will coordinate the work of the PWS rapporteurs and will assist the chair as necessary.

3.6.2 The Group also discussed the role of the vice-president and agreed he should concentrate on education, training and capacity building activities. He will keep abreast of the implementation of the WWW and its implications concerning capacity building. He will also assist the president in the preparation of documents for Executive Council and will represent the president at meetings as appropriate.

3.7 Rapporteurs reporting to the MG

3.7.1 The MG considered the terms of reference of the Rapporteur on Innovative Collaboration. The Group noted that there was a critical need for imaginative approaches to provide support for in situ observing networks, particularly the upper air network, in developing countries and for the GSN and GUAN. It agreed that the principal need was for long-term operational support since this was the key requirement that was not being addressed by existing aid programmes, which normally focus on short-term development projects. It recognised that there is a very broad range of possible solutions and that many different approaches to collaborations had been tried. These ranged from formal international conventions to informal bilateral collaborations, both long-term and short-term. Although the right approach depended on the particular problem being addressed, the Group agreed that some criteria were needed to effectively evaluate the success and possible applicability of innovative arrangements to WMO requirements.

3.7.2 The Group reviewed the preliminary project plan and questionnaire that had been submitted by the rapporteur. It agreed on the proposed work schedule but suggested that information and advice should be sought by sending the questionnaire to a more focused list or recipients and should not be targeted at all Permanent Representatives. It recommended that the rapporteur focus on four key problem areas identified by the Commission. Noting that some groups of countries or organizations had successfully set up joint institutions or other cooperative arrangements to carry out specific tasks or to provide a framework to run joint projects it suggested the rapporteur seek information from institutions or offices that have addressed issues similar to those highlighted by the Commission. To assist the rapporteur in her task the MG has drawn her attention to the following challenges identified by CBS, along with examples of collaborative approaches already used in related areas.

Challenge	Approaches addressing a similar problem
Shared observing systems	Data Buoy Cooperation Panel (DBCP), AMDAR, ASECNA

Long-term support of complex software needed by many Members	Open-source software movement, Unidata Program, MM5 (community mesoscale model)
Use of a shared telecommunication network	RMDCN in RA VI, Shared telecommunications in RA IV, ASECNA
Central provision of common services	Limited Area Model for Central Europe (LACE), ECMWF

The rapporteur should send questionnaires to the responsible coordinator of the organizations or offices given in the above table to seek their views on the lessons learned from their experience. She should also send questionnaires to the stakeholders of the cooperative arrangement (e.g. contributors and users), since they might have a different viewpoint on the advantages and disadvantages of the arrangement.

3.7.3 Concerning the questionnaire, the MG requested the rapporteur to add a question on the nature or level of the agreement (i.e. convention, treaty, contract, Memorandum of Understanding, etc.).

3.7.4 The MG considered the terms of reference of the Rapporteur on Total Quality Management and the draft work plan submitted by the rapporteur. The Group felt that it was not clear if the proposed work plan would address the critical issues. The MG agreed that the rapporteur's report should describe the ISO 9000 process and point out the likely impacts and consequences of adopting ISO 9000 procedures within a NMHS. It should include a discussion on the costs (in terms of staff and financial resources), benefits, and the implications for the WWW and WMO. It recommended the rapporteur consult with people who have experience with Total Quality Management and with people knowledgeable of the WWW to determine if and how Total Quality Management could be applied to the WWW. The Group agreed that the this was an important issue and they would need time to evaluate the implications well before the next session of the Commission. Consequently, they requested the rapporteur to provide a first report by October 2001.

4. CBS INPUT TO THE WMO SIXTH LONG-TERM PLAN (agenda item 4)

4.1 Following the guidance of EC-LII, the EC Working Group on Long-term Planning (EC-WGLTP) prepared a draft proposal containing a broad vision statement, outcomes, strategies and associated goals for the 6LTP. It was widely recognised that much work must still be done and CBS-XII requested the CBS-MG to consider this matter and provide input to the EC-WGLTP as a matter of urgency. The Group carefully reviewed the document and had many comments and suggestions. Specific suggestions are included in a marked up version of the draft provided in the annex to this paragraph while comments of a general nature are given immediately below.

4.2 The Group felt that the document was in need of major adjustment and revision, so much so that it struggled to provide meaningful and constructive comments. The definition of WMO was not used consistently throughout the document: usually it implied Members, but sometimes it implied the Secretariat and sometimes both. The Group recommended that a preamble be added to the document. The preamble should explain the planning framework used, including the relationship between the vision, outcomes and strategies. The Group felt that in the text, it was not clear that WMO was not solely responsible for the outcome but in all cases was merely one of a number of agents that contribute to their realisation. It would be helpful to readers if this were more clearly explained in the introduction. The introduction should also introduce readers to WMO, define what it is and the respective roles of the WMO, Members, and the Secretariat.

4.3 The MG thought that in many parts the document implied WMO is starting from a zero base and did not recognise the enormous existing investment in infrastructure, regulatory framework, prediction systems and complex, well developed mechanisms for service provision.

4.4 The Group felt that some of those items described as outcomes were, in fact, strategies. Also some outcomes included within their description a strategy for their realisation. In general, it felt there was too much emphasis on how instead of what.

4.5 The Group thought that in the draft plan there was a singular focus on warnings for extreme events and a poor representation of all of the processes which lead to a capability to predict these and other severe weather events. The benefit of routine observation, exchange and prediction is not suitably recognised. The MG considers that over the long term, routine forecasting results in cost savings for many sectors of the economy, is one of the key responsibilities of NMHSs and is, in fact, the foundation upon which other forecasts depend. This essential role should be more clearly indicated in the document.

5. CLOSURE OF THE MEETING (agenda item 6)

5.1 The meeting closed on 27 January 2001.

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Annex to Paragraph 3.1

Proposed meetings of CBS teams for 2001/2002

2001

Meeting	Location	Dates	Remarks
ET on Data Representation and Codes	Toulouse	2-6 April	6 members and 4 Intl. orgs
Steering Group on Radio-Frequency Coordination	Geneva	3-8 May	Tied to ITU-R WP 7C, 9-17 May
ET on Migration to Table Driven Code Forms	Geneva	7-11 May	7 members and 4 Intl. orgs
Meeting of experts on OSE/OSSEs	Geneva (tentative)	May (tentative)	
ET on the Improved MTN and GTS	Geneva	20-23(am) June	
Implementation-Coordination Meeting on the MTN	Geneva	25-28 June	Just following ET-IMTN
Interprogramme task team on Future WMO Information Systems - III	Langen, Germany	25-29 June	
ET on Media Issues	Minneapolis, Minnesota	26-30 June	
ET on Enhanced Utilisation of Data Communication System	Montreal (tentative)	10-14 Sept.	
ET on Infrastructure for SI	to be decided	September	8 ET members, 1 user centre, and CCl, CAgM, CAS, ECMWF
ET on Integrated Data Management - I	Geneva (tentative)	September (tentative)	
Possible –meeting to coordinate pilot tests		3rd quarter	
Coordination meeting on the implementation of GSN and GUAN	to be decided	3rd quarter	5 reps of lead centres & rapporteur
Co-ordination Group on ERA	Offenbach (tentative)	September	11 CG members and CTBTO, IAEA
ET on EPS	Tokyo	15-19 Oct.	9 ET members
ET on Product Development and Service Assessment	Kuala Lumpur, Malaysia	3-7 Dec.	
CBS MG-II	Australia	10-13 Dec.	
Task team on Regulatory material and improvement of Volume A	Geneva	4th quarter	2 rapporteurs & 1 expert on satellites
ET on observational data requirements and redesign of the GOS	To be decided	4th quarter	5 ET members & 9 reps of other TCs & Intl orgs

2002

Meeting	Location	Dates	Remarks
ET on Satellite Utilization and Products	To be decided	1st quarter	8 ET members & 3 reps of RMTC and intl orgs
ET on requirements of data from AWSs	To be decided	1st quarter	5 ET members plus 2 reps of CIMO and EUMETNET
ET on SVS for LRF	To be decided	1st quarter, 5 days	7 ET members and experts from CCl and CAS
ICT on DPFS	To be decided	2cnd quarter, 5 days	10 members and two rapporteurs
ET on Data Representation and Codes	Prague	April	6 members and 4 intl. orgs
ET on Warnings and Forecasts Exchange, Understanding and Use	Washington	April	6 ET members
Interprogramme task team on Future WMO Information Systems - IV	Washington ?	May	
ET on Migration to Table Driven Code Forms	To be decided	May	7 members and 4 intl. orgs
ET on the Improved MTN and GTS	To be decided	May or June, 4 days	
ICT on ISS	Geneva	June, 5 days	
ICT on Integrated Observing Systems	To be decided	3rd quarter	9 ICT members plus 2 reps of CCl and GCOS
ET on Integrated Data Management - II	UK ?	3rd quarter	
ICT on PWS	Buenos Aires	3rd quarter	7 members, expert from CCl plus two for capacity building
Steering Group on Radio-Frequency Coordination	Geneva	4th quarter	Tied to ITU-R CPM-2003
ET on observational data requirements and redesign of the GOS	to be decided	4th quarter	5 ET members plus 9 reps of other TCs and intl orgs
ET on Satellite Utilization and Products	to be decided	4th quarter	8 ET members plus 3 reps of RMTC and intl. orgs

Comments on the Sixth WMO Long-term Plan (6LTP)

Vision – *a clear and succinct statement which captures the essence of what WMO should be and why it exists*.

"The WMO – leading the world in cooperation in weather, water, climate and the related natural environment for the benefit of all nations."

Outcomes - *The results and/or impacts of what we want to achieve, for which WMO can play a significant role*.

1. Improved protection of life and property

- ~~To contribute, through the implementation of detection, prediction and warning systems, to safety of life and to~~ reduction of the social and economic impacts of natural disasters, e.g. tropical cyclones, floods, strong winds, droughts, forest fires, severe storms and pollution events.
- Increased awareness and preparedness of peoples and society to face ~~extremities of~~ severe weather phenomena.
- Improved safety of infrastructure ~~objects~~ such as buildings, roads, bridges, powerplants etc., ~~through informed use of meteorological and hydrological data.~~
- Reduced vulnerability of human life and property to weather and climate events.

2. Increased safety at sea and in the air

- ~~Underpin the~~Improved safety of travel by air ~~through the provision of warnings of enroute meteorological and environmental hazards, including turbulence, icing, volcanic ash and tropical cyclones.~~
- Enhanced safety of life and property at sea, for commercial shipping and other users (pleasure craft, sporting events, fisheries, industry) ~~and in ever harsher conditions, through the provision of higher quality, more detailed and more varied marine weather and ocean condition services.~~

3. Enhanced quality of life (both in terms of basic human needs such as food, water, shelter and in making the most of the weather in leisure, sports and every day life)

- Adequate and sustained food availability ~~through the provision of weather, hydrological and climatological (including seasonal) forecasts to plan agricultural activities.~~
- Improved environment in terms of good air quality ~~and clean water with minimal pollution~~.
- Increased weather-climate-environment awareness of peoples, governmental bodies and society.
- Better informed public on the importance of meteorology and how it can improve their daily lives.
- Reduction of health problems, including those associated with increasing UV-radiation and pollution.

- Improved assessment and management of water resources ~~through the application of hydrological forecasts, leading to more sustainable development,~~ and reduction in tension over shared resources.

- Maximizing social benefits through the contribution to peoples daily lives and socioeconomic activities.

4. Sustainable economic growth

- Contribute to economic development ~~by means of: a higher degree of protection of human lives and property against detrimental effects of meteorological/hydrological phenomena; better use of weather, climate and water related services in order to increase economic benefit.~~

~~- Maximize potential of natural resources to support sustainable development.~~

- ~~To assist in the form of weather inputs in planning and management of~~More efficient agricultural production and use of water resources ~~to sustain the growing human and cattle production.~~

- ~~Improvements in the way agri-business, industry, commerce and various service sectors (including energy, tourism, building design and urban planning), which have demonstrated sensitivity, learn to~~Weather sensitive sectors of the economy are better able to adapt to climate change ~~and respond more effectively when provided with appropriate information, including predictions.~~

- ~~Better economic performance and~~ Improved management of the natural environment ~~for the whole society as a result of proper application of meteorological information and forecasts.~~

5. Protection of the environment

- Better, reliable and timely advice to policy-and-decision-makers with regard to policies and course of action to be taken, on a national and international scale, to prevent adverse climate modification and damage to the natural environment.

- Greater understanding of the climate system at national and regional scales as well as at the global scale.

- Contribution to protecting aquatic ecosystems.

- Halting or even reversing the deteriorating trend in the quality of the atmosphere in relation to human habitation.

- Support to the formulation of national, regional as well as international Conventions and strategies such as the UNFCCC, UNCCD, Vienna Convention on the Protection of the Ozone Layer.

Strategies and associated goals

In order to contribute to the outcomes, the WMO and its Members have adopted the following strategies with associated goals for meeting the evolving global needs for expert advice and services related to weather, water, climate and the natural environment.

1. To deliver increasingly ~~relevant and appropriate~~accurate and reliable warnings of severe events related to weather, water, climate and the related natural environment throughout the world, and ensure they are able to reach ~~the right people~~their target audience (individuals, emergency services, decision-makers) in a timely and useful manner.

(a) Improve the accuracy and reliability of the analysis, forecasts and warnings of natural hazards such as ~~predictions of~~ tropical cyclones, floods, strong winds, droughts, forest fires, severe storms and pollution events. This should include improving seasonal and longer term predictions of changes in the timing, severity or frequency of such severe events, such as associated with El Nino and global warming (including information on the likely consequences of climate change at a regional level).

(b) ~~Establish~~ Enhance ~~appropriate~~ mechanisms and communication systems for delivering warnings, including considering how best to utilise the international capabilities, technological developments (e.g. Internet), links with media and the appropriate authorities responsible for action.

(c) ~~Establish appropriate~~Strengthen protocols for warnings, to avoid confusion of different warnings from different sources, including cooperation between the different sectors of the meteorological, hydrological, oceanographic and climatological communities to agree responsibilities.

(d) ~~Establish appropriate~~Improve communication with ~~the types of~~ organisations who need to receive and act upon the warnings, to ensure they understand what can be achieved and that their requirements are properly understood and that the type, format, timeliness and method of delivery of the warnings are appropriate.

(e) ~~Establish~~ Ensure effective mechanisms for regularly presenting information to governments, relevant organisations and the public as appropriate, advising on areas at increased risk of natural disasters and actions which could be taken to reduce the potential impacts of such disasters.

(f) ~~Consider all of the above goals from a global perspective~~Enhance effective international cooperation and collaboration, using the collective abilities of the different Members of WMO (including the different sectors of the meteorological, hydrological, oceanographic and climatological communities) and of other international organisations in order to achieve the best outcome.

2. To provide increasingly improved weather, water, climate and related environmental services to the public, governments and other interested parties throughout the world.

(a) ~~Assess the~~Review and update assessed requirements for the following services (which may have global or regional implications, including the potential need for aid or assistance) in different parts of the world, and the capabilities of the different Members of WMO regarding the provision of such services.

(i) ~~The provision of services to~~ aviation ~~to improve its safety and economics, including warnings of enroute meteorological and environmental hazards (turbulence, icing, volcanic ash and tropical cyclones).~~

(ii) ~~The provision of~~ marine weather and ocean condition services ~~to improve the safety and economics of marine activities.~~

(iii) ~~The provision of~~ weather, water and climate (including seasonal) forecasts ~~to plan agricultural activities to contribute to ensuring an adequate and sustained availability of food and fibre.~~

(iv) ~~The provision of services associated with health problems, including~~ air quality, water quality, UV-radiation and pollution.

(v) ~~The provision of~~ hydrological forecasts ~~to improve assessment and management of water resources, to increase sustainable development and reduce tension over shared resources.~~

(vi) ~~The provision of~~ dissemination of weather, water and climate information ~~to enable informed construction of infrastructure such as buildings, roads, bridges, powerplants and to aid urban design, to improve safety.~~

(vii) ~~The provision of weather, water and climate information to maximize the potential of natural resources (including new sources of energy), to support sustainable development and reduce impacts on the environment.~~

(b) Improve the provision of the services listed in (a) by:

~~(i) best possible benefit to cost, for government and other customers;~~
(i) Improved infrastructure and use of improved technology where appropriate by targeting and remedying identified weaknesses and deficiencies

(ii) ~~customer~~increased user-focus to meet the needs of the different sectors of society, including affordability, including establishing appropriate communication with the types of organisations who need to receive the services, to ensure they understand what can be achieved and that their requirements are properly understood and that the type, format, timeliness and method of delivery of the services are appropriate;

(iii) greater prediction accuracy and reliability where needed~~, with risk quantified;~~

(iv) ~~need for integrated~~enhanced integration of services, across natural sciences: take the fullest account of relevant physical and chemical parameters associated with the weather, the climate and hydrological conditions~~, including parameters outside the hydrological and meteorological fields~~ as appropriate to meet the customers needs.

(c) Consider (b) above from a global and multi-disciplinary perspective, using the collective abilities of the different Members of WMO (including the different sectors of the meteorological, hydrological, oceanographic and climatological communities) and of other international organisations in order to achieve an integrated global service system. MG COMMENT: The term "integrated global service system" has very serious implications that the MG does not think have been recognised or debated.

3. To be the authoritative scientific voice on weather, water, climate and related environment issues; including contributing to relevant international conventions, protocols, and other legal instruments, ensuring that relevant agreements are scientifically based, as well as inputting to scientifically-based policies of governments and briefing the media.
MG COMMENT – this whole section is poorly worded and structured and has implications to which the members of the MG were concerned. For example, (b)(i) might be read to imply that NMHSs should issue their forecasts as "WMO". It also does not appear to conform to the definition of "WMO" as defined in the WMO Convention.

(a) Define the types of issues which WMO should be the authoritative scientific voice on, and consider the roles of other organisations (such as UNEP and UNFCCC regarding climate change) and the possible establishment of joint arrangements.

(b) Establish WMO as the respected authority for these issues.

(i) Position WMO as the organization capable of acting as the authoritative voice with global leadership on weather, water, climate and related environmental matters.

(ii) Improve awareness of WMO.

(iii) Raise the profile of the organisation through better management of the media; be proactive in issuing press statements in a timely and media interesting manner on relevant issues.

(iv) Sell the objectives of the organisation to the Member States.

(v) Encourage and gain Member States commitment to implement these objectives.

(vi) Let the world know of the successes of the WMO programmes and the benefits.

(vii) Achieve international publicity and priority in the UN context for core areas of WMO's activities.

(viii) Respond authoritatively to the increasing demand of the communities for expert advice on meteorology, hydrology and related environmental issues of importance to countries.

(ix) Advertise to governments, relevant authorities, other international organisations, and the media, the role of WMO and the way in which WMO and its Members could be beneficial to them as a source of expert information and advice on matters related to weather, water, climate and related environmental issues.

(c) Develop and continually update an appropriate knowledge base of the types of issues defined in (a).

(d) Provide the information/advice in the most effective manner.

(i) Improve the mechanisms for preparing and issuing/delivering the advice/information and ensuring WMO is included in the development of international protocols and agreements related to weather, water, climate and related environmental issues; ensuring that the capabilities of Members of WMO are utilised to the best advantage.

(ii) Express the Organization's point of view to ~~all~~ key international inter-governmental or non-governmental organizations whose activities are i~~n any way~~ connected with those of WMO.

(iii) Participate actively in decision-making by such external bodies to ensure that hydrometeorological and climatic issues are adequately taken into account, including in the organization of such bodies' activities.

4. To inform and educate the public, governments and other interested parties about the socio-economic benefits of understanding the weather, water, climate and related environment

(a) Improve our knowledge of the benefits of meteorological, hydrological, oceanographic, climatological and related environmental services, in terms of outcomes which affect the users of such services, including carrying out cost-benefit studies for the various sectors.

(b) Inform governments and others of benefits, to encourage support for meteorological, hydrological, oceanographic, climatological and related activities and to enable better use of the available knowledge, information and forecasts.

(c) Demonstrate to the public the socio/economic quantitative value of the services of the NMHSs through case studies, what-if analyses, economic simulation models etc.

(d) Inform users of the benefits in terms of outputs/outcomes which affect the different sectors of society and the economy of a country.

(e) Promote education of the public through the media, and ~~youngsters~~ students through the elementary and high-school educational program, to increase awareness with respect to the weather-water-climate-environment system of our planet.

The following two strategies are associated with the application of improvements in the science and technology required to enhance the basic infrastructure and prediction services needed ~~developing the required knowledge, basic predictions and infrastructure in order to be able~~ to achieve the goals associated with strategies 1 to 4 above.

5. To understand the processes which affect the state of the atmosphere, the weather, water resources, the physical state of the oceans, climate change and related environmental states such as air quality and pollution levels; and to improve cooperation on the development of prediction systems. MG COMMENT – this section would most appropriately be reviewed by representatives of CAS

~~(a) Assess the requirements for predictions to meet the goals under strategies (1) and (2), including types of forecasts, space and time scales, accuracy and reliability.~~

~~(b) Improve the accuracy and reliability of the predictions required to meet the goals under strategies (1) and (2).~~

(c) Assess the requirements for the knowledge base, in terms of understanding the processes which affect the state of the atmosphere, the weather, water resources, the physical state of the oceans, climate change and related enviroenmental states, to meet the goals under strategy (3).

(d) Improve the understanding of the processes required for the knowledge base in strategy (2).

(e) Improve the collaboration and co-operation on a regional and global basis between centres which carry out research into the processes, and between those centres which produce predictions, in order to improve the understanding and the predictions and reduce unbeneficial duplication of effort.

(f) Improve linkages between the natural sciences; take the fullest account of relevant physical and chemical parameters associated with the weather, the climate and hydrological conditions, including parameters outside the hydrological and meteorological fields as appropriate.

~~(g) Ensure that the principle of free and unrestricted international exchange of basic forecast~~

~~products is maintained.~~

6. To observe, record and report on the weather, water resources, climate and the related natural environment, to use these data for the preparation of forecast and warning services and related information, and to maintain and enhance systems to exchange these data, products and information.

(a) Identify the data requirements for achieving the goals in (1) to (5)~~, including the potential need for an international network of new types of environmental data (e.g. air quality).~~

~~(b) Define optimum network(s) in terms of effectiveness and cost - type of observations, resolution, area of coverage (e.g. global or regional), telecommunications required to distribute the data, processing and storage of the data.~~

(c) ~~Establish an integrated~~Optimise global systems for observing, recording and reporting on the weather, water resources, climate and the related natural environment to meet the requirements in the most effective and efficient manner; including the standardization of techniques for observing ~~and exchanging~~ data.

(d) Improve co-operation between NMHSs and other appropriate organisations to implement the observing, processing, forecasting and communication systems, in order to improve the quality, robustness and cost effectiveness of these systems. This should include planning ~~networks~~ basic systems on a regional basis and establishing appropriate cost-sharing mechanisms to enable improvements in the system ~~(such as utilisation of new satellite distribution systems)~~.

(e) ~~Establish~~ Enhance the~~a~~ maintenance system for the ~~network~~ basic infrastructure – to assess problems and deficiencies and take remedial action~~s to deal with the problems.~~

(f) Keep up-to-date with new technological developments~~, such as the Internet and satellite observation and data distribution systems~~ and utilise them ~~to the maximum extent possible~~ where most appropriate.

~~(g) Ensure that appropriate structure and mechanisms are established within WMO to ensure that there are suitable links between the different bodies which are involved with defining the requirements, defining the optimum network(s), implementing the network (including observations, telecommunications, data storage etc.) and using the data.~~

(h) Ensure that the principle of free and unrestricted international exchange of ~~basic~~ data and products is maintained.

The following three strategies are concerned with how WMO and its Members aim to meet strategies 1 to 6 above. Each of the associated goals should therefore be considered in the context of how they can contribute to the goals associated with strategies 1 to 6.

7. To ~~encourage~~ ensure effective co-operation and collaboration between National Meteorological and Hydrological Services (NMHSs)

(a) ~~Establish appropriate~~Strengthen mechanisms and structures within WMO to facilitate increased collaboration and alliances between NMHSs. ~~Encourage and~~ facilitate regional cooperation~~, less dependency on national capabilities alone.~~ to supplement national capabilities.

(b) Promote exchange and sharing of information and other resources ~~to minimize unnecessary duplication of effort.~~ among Members.

(c) Support education and training for staff, especially in developing NMHSs to enable them to ~~develop a better apprehension of the complexity of the~~take advantage of developments in weather, climate, and environmental science ~~system~~, new technology, new management methods and ~~serving~~ new techniques for meeting user ~~customer~~ requirements.

(d) ~~Build global capabilities on collective strengths, recognizing that, for whatever reason, some have better capabilities than others.~~

~~(e) Facilitate regional and international cooperation and collaborative programmes between developed and developing nations.~~

(f) Facilitate and encourage ~~informal networking of~~collaboration between NMHSs on the basis of common interest projects to improve effectiveness and reduce overall costs (e.g. observing systems planned and implemented on a regional basis, cooperation in development of forecast models, pooling of staff resources).

8. To work effectively with international partners, other science-based organizations, academia and the private sector

(a) ~~Improve linkages between the natural sciences, (e.g. climate, biodiversity and desertification), and~~ encourage multi-disciplinary cooperation in meteorology, hydrology, oceanography and ~~other~~ related environmental fields.

(b) ~~Improve coordination between~~Maintain a high level of collaboration within the UN system and with ~~(and~~ other international~~)~~ organisations.~~, and identify whether there is a need for a more overarching way of dealing with environmental issues and what the roles of the different organisations should be (including areas for greater coordination). D~~Enhance and, where appropriate, develop joint inter-institutional programmes ~~(e.g. with FAO, ICAO, WHO) to produce mechanisms for taking into account~~to address the influence of weather, water resources and climate on the activities of interest to those organisations.

(c) Establish ~~appropriate~~ mechanisms ~~for~~ to increase ~~the ing~~ involvement of the wider meteorological community in the work of WMO ~~– globally, regionally and nationally.~~

(d) Promote better ~~integration among~~collaboration between NMHSs, the media and the private sector ~~for provision of~~to provide better meteorological services to the public, ~~building awareness among Members~~taking account of the need ~~to establish~~for effective and efficient services to distribute ~~special~~ official forecasts, bulletins and warnings.

(e) Increase ~~cooperation~~ communication with organizations such as the European Union, the IADB and the World Bank, to encourage funding for the global meteorological infrastructure.

9. ~~To be~~Maintain an effective, efficient and flexible ~~Organization~~ structure, able to respond rapidly to the changing needs of society and new opportunities provided by technological advances

~~(a) Improve effectiveness and efficiency of services through improved cooperation and collaboration between the different sectors of the relevant communities.~~

(b) Review and improve the WMO structure and working mechanisms to increase the effectiveness and flexibility to cope with changing circumstances, e.g. facilitating new types of cooperation between NMHSs and other sectors, including joint funding of infrastructure such as regional observation networks or telecommunication systems.

(c) Review the role of the WMO Secretariat, and the changing skills required to cope with the evolving needs of the Members, and ensure that the most capable and experienced staff from Members are employed within WMO to drive and coordinate the activities.

(d) Review the terms of reference and working mechanisms of relevant WMO bodies in order to better facilitate partnerships with other relevant intergovernmental and non-governmental organisations, academia and the private sector and pursue an active policy to include these entities in the work of WMO.