

WORLD METEOROLOGICAL ORGANIZATION

ICT-ISS 2002/Doc. 5(1)
(9.VIII.2002)

COMMISSION FOR BASIC SYSTEMS
OPAG ON INFORMATION SYSTEMS & SERVICES

ITEMs 5.1 & 5.2

IMPLEMENTATION-COORDINATION TEAM ON
INFORMATION SYSTEMS & SERVICES

ENGLISH only

GENEVA, 9-13 SEPTEMBER 2002

IMPROVED MTN AND GTS PLANS (incl. ET-IMTN report)

(Submitted by the Secretariat)

Summary and Purpose of Document

The document includes a summary of the progress of the Improved MTN project and proposals for recommended telecommunication techniques for an improved GTS, as developed by the Expert Team on the Improved MTN and GTS chaired by Peiliang Shi (China).

ACTION PROPOSED

The Implementation Co-ordination Team is invited to note and comment the information, and to review and endorse the ET-IMTN conclusions.

Discussion

1. The Expert Team on the improved MTN and GTS (ET-IMTN), chaired by Peiliang Shi (China), held two sessions, one (Geneva, June 2001) associated with an Implementation-Coordination Meeting on the MTN, and the second (Montreal, 27-31 May 2002) jointly with the ET-EUDCS. The ET-IMTN also conducted extensive consultations by correspondence.

Improved MTN project

2. The Executive Council, at its fifty-third session (June 2001), endorsed the principles and concepts of the improved MTN project, as agreed upon by CBS-XII. The improved MTN would be implemented through data-communication network services from a small number of providers. A first implementation phase would mix network services and point-to-point circuits; a second phase would provide the full MTN connectivity through the network services. The project facilitates a progressive implementation, which could be adapted to the needs and resources of the Members concerned and could respond to changing requirements.

3. The Improved MTN project was agreed to be the best solution taking into account MTN requirements, technical efficiency, cost-effectiveness, implementation feasibility and early benefits for the whole GTS; it was also expected to permit savings for most centres on recurrent costs in comparison with the current leased circuits, while enabling capacity upgrades.

4. The Executive Council, at its fifty-fourth session (June 2002), emphasized the importance of pursuing the development and upgrade of the regional and global components of the GTS in order to meet the increasing data exchange requirements. It noted that the Improved MTN project was making some progress, and it encouraged Members concerned to facilitate effective multilateral cooperation, with the assistance of the Secretariat as necessary, in particular with respect to the procurement, contractual and financial framework to foster its early implementation.

5. The ET-IMTN confirmed the suitability of the IMTN implementation plan for:

- I. The implementation of a "cloud" providing the interconnectivity between the RTH/WMCs Washington and Melbourne and the RTHs Tokyo, Bracknell, Brasilia and Buenos Aires, including RTH/WMC Moscow in a further step;
- II. The implementation of a "cloud" as an extension of the RA VI-RMDCN, providing the interconnectivity between the RTHs Bracknell, Toulouse, Offenbach, RTH/WMC Moscow and other adjacent RTHs, i.e. RTHs Nairobi, Dakar, Algiers, Cairo, Jeddah, New Delhi and Beijing. The inclusion of the Tokyo-Beijing and Tokyo-New Delhi circuits would also provide an effective interconnectivity between both "clouds".

6. With respect to "cloud I", the ET-IMTN consolidated the technical requirements, analysed the competitive quotations obtained from potential providers, and identified the best offers. It agreed that individual contractual and billing arrangements should be provided to each RTH, and that sharing between RTHs of the recurrent cost of respective links should be based on the inbound data-communication capacity. The ET-IMTN reached the conclusion that all required pre-conditions were met towards implementation of the part of "cloud I" interconnecting RTH/WMCs Washington and Melbourne and the RTHs Tokyo and Bracknell. The inclusion of RTHs Brasilia and Buenos Aires, and of RTH/WMC Moscow in a further step, should be further analysed. A letter from the Secretary-General was sent to the Members concerned to encourage them to proceed with the implementation of the relevant part of the IMTN project. The portion Washington, Melbourne, Tokyo and Bracknell is very likely to be implemented by the end of 2002.

7. With respect to "cloud II", the ET-IMTN consolidated the technical requirements and analysed the quotations and services provided by Equant Network Services Limited "Equant", which is the

contractor for the RA VI-RMDCN managed data-communication services, selected upon an International Invitation to Tender. In the framework of the WMO/ECMWF agreement on the RMDCN as part of the GTS, the ECMWF manages the RMDCN and monitors, on behalf of all participating centres, the quality of service and the contractor's adherence to the Service Level Agreements. RA-VI and the ECMWF Council agreed that the RMDCN could be extended, in particular by the addition of GTS connections between RA VI RTHs/NMCs and RTHs/NMCs in other Regions. These connections include inter-regional GTS circuits and circuits of the Improved MTN plan. The Equant master RMDCN contract was revised accordingly. The ECMWF Council also agreed upon the incurred additional management and monitoring workload for the ECMWF.

8. The ET-IMTN reached the conclusion that the extension of the RMDCN was the best opportunity for "cloud II" and would lead to significant savings for several MTN and inter-regional circuits, taking into account the adaptation of the CIRs to the actual throughput requirements. The importance of the network management services and the monitoring and control undertaken by the ECMWF was also emphasized. The ET-IMTN agreed that all required pre-conditions were met towards implementation by the end of this year of the part of "cloud II" comprising the MTN circuits Beijing-Offenbach, Nairobi-Offenbach and also including the inter-regional circuit Nairobi-Toulouse, and the MTN circuit Tokyo-Beijing. Consideration of the implementation of other circuits will be pursued in coordination with centres concerned, noting in particular that the Moscow-New Delhi and Tokyo-New Delhi MTN circuits could be planned for next year. A letter from the Secretary-General was also sent to all Members concerned to encourage them to proceed with the implementation of the relevant part of the IMTN project.

Telecommunication techniques and services for an improved GTS

9. The ET-IMTN reviewed the development of telecommunication techniques and services and their suitability for an improved GTS. It particularly noted Digital Audio Broadcasting (DAB) and Digital Video Broadcasting (DVB) techniques via satellite.

10. Digital audio broadcasting techniques (DAB standard) were developed with the aim of improving radio reception via terrestrial or satellite radiocommunications. DAB, as a digital transmission system, can transmit other data as well as audio. Satellite-based digital audio broadcast services, such as those provided by WorldSpace, also include also commercial "datacasting" services. Current services are covering Africa and Asia, and are planned for the Americas. DAB data casting services are recommended as a cost-effective solution in terms of recurrent and investment costs for meteorological data-distribution with moderate capacity (multiple 10kbit/s). They appear to be a valid solution for replacing RTH radiobroadcasts, taking account of the service area of coverage (satellite beams footprints), and the required access to the uplink sites.

11. Digital Video Broadcasting techniques (DVB-S) were developed with the aim of enabling digital video programmes reception via terrestrial or satellite radiocommunications. DVB, as a digital high-capacity transmission system, can transmit data files and supports standard procedures (IP, FTP). Several satellite-based telecommunication providers provide DVB services. The two satellite-based data-distribution systems of the RMTN of Region VI, RETIM and FAX-E, are being upgraded based on DVB transmission techniques. DVB-S services are recommended as a highly cost-effective solution in terms of recurrent and investment costs for meteorological data-distribution with large capacity (multiple 10Mbit/s).