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REGIONAL ASSOCIATION II

ITEM 3.3

IMPLEMENTATION COORDINATION
MEETING ON THE GTS IN RA II

MOSCOW, 8- 10 SEPTEMBER 2003

ENGLISH only

RMTN development planning
(Submitted by the Secretariat)

Summary and purpose of document

This document provides information on recommendations or guidelines for the further development, strengthening and upgrade of the GTS in Region II, including MTN, inter-regional links and regional links, that were adopted by previous meetings, including CBS-XII (Geneva, 2000), CBS-Ext.02 (Cairns, 2002), XII-RA II (Seoul, 2000), the Implementation Co-ordination Meeting on the GTS in Region II (Southern part) (RA II-ICM-GTS, New Delhi, January 2002) and the Training seminar on information and communication technology for the GTS (Bangkok, September 2002).

ACTION PROPOSED

The meeting is invited to note the information when considering the planning of future improvements for the organisation and design of the Regional Meteorological Telecommunication Network in Region II.

RMTN development planning

Main Telecommunication Network (MTN)

1. The Improved MTN (IMTN), as agreed by CBS-XII (Geneva, 2000), 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 facilitated a progressive implementation, which could be adapted to the needs and resources of the Members concerned and could respond to changing requirements. The IMTN 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. CBS-Ext.02 endorsed the IMTN project consisting in two parts:

- (a) The implementation of a "cloud I" providing the interconnectivity between RTH/WMCs Washington and Melbourne and RTHs Tokyo, Bracknell, Brasilia and Buenos Aires, including RTH/WMC Moscow in a further step;
- (b) The implementation of a "cloud II" as an extension of the Region VI RMDCN, providing the interconnectivity between 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".

Note: RTHs Tokyo and Bracknell and WMC/RTH Moscow, connected to the two "clouds" would ensure the effective interconnection between the two "clouds".

2. With respect to "cloud I", the portion interconnecting RTH/WMCs Washington, Melbourne and RTH Tokyo has been implemented in January 2003.

3. With respect to "cloud II", CBS-Ext.02 endorsed that the extension of the Region VI RMDCN managed data-communication services provided by Equant Network Services Limited, was the best opportunity for "cloud II" and that it would lead to significant savings for several MTN and interregional circuits, taking into account the adaptation of the committed information rates (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 MTN circuit Beijing-Offenbach has been upgraded in March 2003. Centres concerned are pursuing consideration of the upgrade of other MTN circuits, in particular with respect to Tokyo-Beijing, Tokyo-New Delhi and Moscow-New Delhi. CBS-Ext.02 noted that the MTN circuit Cairo-New Delhi was still implemented as a 100 baud telegraphic circuit and was not capable of meeting the MTN requirements; It was pleased to learn that an upgrade of the circuit was planned for 2003, including in the framework of the IMTN project. The meeting is invited to review the IMTN implementation planning relevant to Region II.

Connections between RTHs

4. The Implementation Co-ordination Meeting on the GTS in Region II (Southern part) (RA II-ICM-GTS) (New Delhi, January 2002) recommended that, in the framework of the upgrade of the GTS circuits linking RTHs Tokyo, Bangkok and New Delhi via Frame Relay services and the resulting improvement in cost-effectiveness, the Bangkok-New Delhi connection be also upgraded and re-included into the RMTN. It recommended that the additional circuit Beijing-New Delhi, operating at 9.6 kbit/s be included in the RMTN plan as a circuit interconnecting two major RTHs in the Region and ensuring a higher reliability and capacity of the whole RMTN. It also recommended that the circuit Bangkok-Singapore be endorsed as an inter-regional circuit, noting the plans of RTH Bangkok to upgrade both inter-regional circuits Bangkok-Kuala Lumpur and Bangkok-Singapore to Frame Relay, 16 kbit/s (CIR).

5. The RTHs in Region II were invited to develop plans to upgrade the circuits interconnecting RTHs to allow the transmission of data at a minimum speed of 64 Kbits/s using TCP/IP procedures. In particular, RTH focal points for the IRMTN were invited to investigate the feasibility of the use of managed data communication networks/frame relay services (including technical, administrative and financial aspects).

Connections of NMCs to the GTS

6. XII-RA II (Seoul, 2000) endorsed the concept of an Improved RMTN using modern cost-effective data-communication network services. Considering that cost-effective data network services such as Frame Relay and IP-VPN (Internet Protocol - Virtual Private Network) services were available in parts of the Region and that the administrative mechanisms for implementation would not be developed shortly, XII-RA II agreed upon a practical step-by-step approach for the implementation. In view of the geographical extension of the Region, the RA II-ICM-GTS agreed that the design of the Improved RMTN could be based on the implementation of several networks grouping RTHs and NMCs as appropriate. The further development of the Improved RMTN is addressed in more details in another document.

7. With respect to implementation planning, the RA II-ICM-GTS particularly emphasized the following recommendations:

- Each RTH should survey the technical status, capabilities and opportunities of its associated NMCs, as well as the data-communication network services that are commercially available and cost-effective in their respective zone;
- RTHs should assist their associated NMCs in developing implementation plans, including target implementation dates; this plans should include the migration to TCP/IP, which is a key factor for enabling the use of cost-effective systems and communications;
- As an initial step, current circuits should be upgraded as soon as possible using data-communication services that are considerably more cost-effective than conventional leased circuits, such as Frame Relay services. In this regard, the training seminar noted that the circuit New Delhi-Tokyo was upgraded to a 64Kbit/s TCP/IP circuit in August 2002.
- Financial assistance is expected to be required for a number of NMCs for the implementation of the Improved RMTN. In addition to the development of individual VCP projects on the basis of the NMC/RTH plans mentioned above, the Secretariat was invited to establish a co-ordinated co-operation project for the implementation of the IRMTN in Region II. This project would facilitate the management and a focused use of funds contributed by donors.

Use of the Internet

8. The implementation and capacity of the Internet is uneven, but there are rapid developments and changes that the meteorological community should take up as an opportunity for progress. The current Internet could not generally guarantee the quality of service (reliability and committed information rate) for the operational real-time exchange, and the GTS would continue to be dedicated to the exchange of real-time and critical data and products. The Internet is however playing an increasingly important role for the exchange of less time-critical information, for the supply of data and products to other users as well as for the active participation of NMHSs in WMO and related co-ordination activities.

9. In some cases, the Internet may be the only telecommunication means that is available and affordable for providing a connection of an NMC with the GTS. To efficiently support GTS and WWW operations, all RTHs should implement a full access (E-mail and WEB) to the Internet, including the operation of a server for facilitating the exchange of relevant information with other WWW centres, and in particular with its associated NMCs. RTHs should be capable of capturing meteorological data from e-mail with a view to its insertion into the GTS, in accordance with the recommended practices adopted by CBS-Ext.02. This procedure should also be used as a back-up means for the collection of data from the NMCs associated to an RTH. NMCs should as well implement an Internet access and develop Internet functionality, as an integrated component of the upgrade of WWW systems. Adequate security measures should be taken, along the guidelines developed by CBS to ensure an efficient use in a secure data -communication environment.

10. RTHs in Region II were invited to develop plans to implement a Virtual Private Network (VPN) via the Internet. A guidance document on the most appropriate practices and implementation option(s) for VPNs between GTS centres was endorsed by CBS-Ext.02. The RTHs were invited to report to the WMO Secretariat on their own implementation to share the experience gained. The training seminar recommended that RTHs Bangkok, Beijing, New Delhi and Tokyo be invited to carry out a VPN pilot project for Region II and that RTH New Delhi be invited to ensure the co-ordination of the pilot project. The RTHs in Region II should develop plans for their connection to the VPN and the connection of their associated NMCs in co-ordination with them, as soon as the pilot project would be successfully implemented. The VPN should in particular be used:

- By the NMCs not connected to the GTS to transmit observational data to their associated RTHs;
- By the NMCs to receive data and products from the RTHs in complement to the GTS point-to-point circuits, in particular by those NMCs not yet connected to the GTS or connected at low speed.
- By the RTHs as a back-up means for the exchange of data.

11. RTHs were invited to provide information on the procedures to access their Internet servers and the list of data and products available to the Secretariat. The Secretariat includes the information in the WMO server (<http://www.wmo.ch/web/ddbs/ftpsvr.html>).
