

Agenda Item 3: Review of relevant CNS matters, considering:

- a) AFS deficiencies and shortcomings**
- b) AMS deficiencies and shortcomings**
- c) Surveillance plans and radar implementation**

3.1 The meeting took knowledge that the aeronautical fixed (AFS) and mobile (AMS) communication services in the Subregion have certain limitations and that the non-implementation of some of the elements of the Air Navigation Plan prevents the provision of efficient air traffic control services. The AFS includes the aeronautical fixed telecommunication network (AFTN) and ATS speech circuits.

3.2 For the AFTN in the area in question, the meeting took note that it is necessary, according to the new Air Navigation Plan, to implement circuits, increase signalling speeds, apply data transfer codes (IA-5) and apply new communication protocols (X.25). With respect to ATS speech circuits, there is the need to increase their availability, to reduce access time for establishing said communications, and to implement circuits to eliminate non-recommended DID circuits.

3.3 Within mobile communications, the meeting took note that it is necessary to broaden the coverage of ground-air VHF communications for the FIRs in the Region in question, following the planning principles and the CAR/SAM AMS (R) plan specified in the ANP; change the air-air frequency; and implement and make efficient use of en-route aeronautical mobile service HF communication systems.

3.4 The Meeting was informed that the Georgetown AFTN message switching centre is composed of a teletype connected to the Port of Spain circuit. The circuit operates at a signalling speed of 75 bits/sec using an ITA-2 format. In order to increase the availability and effectiveness of the circuit and following the recommendations specified in the ANP FASID, it is recommended that the speed be increased to 2,400 bits/sec and the IA-5 format and the X.25 protocol used. It is also necessary to establish a message centre according to the capacity required by Guyana, to replace the limited functions of the teletype currently in use. It would be desirable for the new system to be able to handle AMHS message procedures and, at the same time, to exchange information using AFTN procedures. Therefore, the Meeting formulated the following conclusion:

Conclusion 1/14 - Improvements in the Guyana AFTN centre

That the Guyana Administration, in order to provide greater support to air traffic services, do its utmost to install a new message switching centre that allows for the exchange of information using AFTN and AMHS procedures, according to the capacity required and providing an AFTN circuit with Port of Spain with an operating capacity of 2,400 bit/sec, IA-5 format and the X.25 communication protocol.

3.5 The meeting was informed that for the Maiquetía – Port of Spain circuit, which is presently operating at 300 bits/sec, the speed must be raised to 2,400 bits/sec. In order to improve the effectiveness of these circuits, the IA-5 format should be used instead of the present ITA-2. Likewise, the X.25 communication protocol should be used in the Maiquetía – Port of Spain circuit. The implementation of REDDIG nodes in Maiquetía and Paramaribo will permit the introduction of the improvements these

require. The initial implementation of a 64 kbits/sec digital circuit between Maiquetía and Piarco would allow the necessary improvements to be made in the AFTN. The required speech services would be included in this circuit. The configuration of this circuit would be similar to that of the circuit installed between Maiquetía and San Juan, Puerto Rico. The connection between Maiquetía and Piarco must preferably be ground-based so that a REDDIG node, once implemented, can communicate efficiently with Piarco (without double hop as in the case of communications between Cayenne and Piarco). For that reason, the following Conclusion was formulated:

Conclusion 1/15 - Implementation of a Maiquetía - Piarco digital circuit

That the Administrations of Venezuela and Trinidad and Tobago take the necessary measures to improve the AFTN circuit between Maiquetía and Piarco, as specified in table CNS-1A, Volume II of the ANP. To that end, it is recommended that a 64-Kbit/sec ground digital circuit be installed to support ATS speech communication requirements between the two centres and permit interconnection between the REDDIG and the Eastern Caribbean digital network.

3.6 The meeting considered that the circuits implemented through the public switched network and with direct international access have availability problems; the time needed to establish calls often exceeds the maximum allowed. For that reason, the meeting considered that dedicated circuits should replace circuits of these kinds. The aforementioned problems would be overcome with the implementation of above Conclusion 1/15 and the REDDIG, since all the States of this Subregion will have nodes of this network, except for Trinidad and Tobago.

3.7 The meeting was informed that the design of the REDDIG South American digital network, in addition to resolving the problems of the existing and future aeronautical fixed and mobile communication services, offers a favourable cost-benefit ratio. This means that, once the network is in operation, the investment made for its implementation will be quickly recovered within its service life.

3.8 The meeting was reminded that all the SAM States have committed themselves to participate in the implementation of the network and the speed of implementation will depend upon the economic contributions of each of the participating States. It is, therefore, recommended that all the States in the Subregion that have not yet made their economic contribution to the RLA/98/019 project (Implementation of the SAM Digital Network (REDDIG)) do their utmost in this regard, thus enabling a quick resolution of the aforementioned problems. Consequently, the following conclusion was formulated:

Conclusion 1/16 - Economic contribution to the REDDIG

That the SAM States of the Subregion that have not yet made their economic contributions to the RLA /98/019 project do their utmost in this regard, so that the REDDIG may be implemented in its entirety and thus permit the required improvements in AFS services to be made for a safe and efficient air traffic control based on a favourable cost-benefit analysis.

3.9 The meeting considered that, for the growth of the ATM requirements, the implementation of the total number of VHF speech communication channels specified in Table CNS-2A, column 3 of the CAR/SAM Air Navigation Plan, Volume II – FASID was needed. At the same time, the meeting considered the importance to know the ground-air VHF coverage in each of the FIRs and whether these cover all en route flight levels. In view of the above, the meeting formulated the following conclusion:

Conclusion 1/17 - Implementation of VHF speech channels and coverage analysis

That Brazil, French Guiana, Guyana, Suriname, Trinidad and Tobago, and Venezuela do their utmost to implement the number of VHF speech communication channels specified in Table CNS-2A, column 3 of the CAR/SAM Air Navigation Plan, Volume II – FASID; moreover, when analysing the existing ground-air VHF coverage in the Eastern CAR/SAM Subregion, that they deal with any shortcomings and deficiencies that could arise.

3.10 The meeting was informed that the necessary frequencies of the ITU HF families, the HF network designators specified in Appendix S27 of Radio Communications, should be implemented at the aeronautical stations of the Subregion. In this connection, the recommendation is to install the corresponding HF en route frequency families for each aeronautical station to cover the sector involved and to provide for 24-hour HF coverage, as specified in Table 1 shown below. In this Table, column 1 shows the aeronautical station, column 2 the name of the HF families needed by the station, column 3 the number of family channels with the number of channels already implemented stated in parentheses, and column 4 the frequencies that have been installed.

TABLE 1

Aeronautical Station	HF Frequency Family	Number of Channels	Frequency (Khz)
Belem			
Manaus	SAM-2	6(4)	3479 5526 8855 10096
Cayenne	SAM-2 CAR-A SAT-2	6(1) 7(1) 5(1)	8855
Georgetown	CAR-A SAM-2	6(2)	8855 10096
Paramaribo	(SAM-2)	6(1)	8855 10096(Will be installed June 2001)
Piarco	CAR-A CAR-B SAM-2	7(3) 5(1) 6(2)	
Maiquetia	CAR-A SAM-2	7(4) 6(3)	5550 6577 8918 13297 5526 8855 10096

3.11 The Table reveals that there are stations that have a number of frequencies installed per family that cannot guarantee 24-hour coverage, making it necessary to install additional frequencies to resolve the problem. For that reason, the meeting formulated the following conclusion:

Conclusion 1/18 - Implementation of HF speech channels

That Brazil, French Guiana, Guyana, Suriname, Trinidad and Tobago, and Venezuela take appropriate measures to implement the number of HF channels required for the speech communications of en route mobile service, as specified in Table CNS - 2B of the CAR/SAM Air Navigation Plan, Volume II - FASID, so that each station can offer 24-hour coverage.

3.12 The meeting was informed of the current situation with respect to the installation of surveillance systems, with the aim that the States present at the meeting could update said information.

3.13 Likewise, States were reminded of the importance to urgently apply the ICAO procedures for the allocation of aircraft 24 bit addresses (Annex 10, volume III, Part I, Chapter 9). This was formulated through RAN CAR/SAM/3 Recommendation 11/6.

3.14 The Meeting was also informed of the current situation in the implementation of the radio navigation aid systems specified in the Air Navigation Plan, Volume II – FASI, with the aim that States update the information presented therein.

3.15 Finally, the Meeting took into consideration the importance of becoming aware of participating States' navaid flight tests national programmes. Given that the State delegates present at the meeting did not count with the information necessary for this, it was determined to establish a target date for the reception of this information at the ICAO NACC and SAM Offices. Therefore, the Meeting formulated the following conclusion:

Conclusion 1/19 - Information requirements

That Brazil, French Guiana, Guyana, Suriname, Trinidad & Tobago and Venezuela send to the respective Regional Offices and not later than 30 May 2001, the following updated information:

- a) Implementation plans for radar surveillance systems;
- b) 24 bits aircraft address allocation plans;
- c) Implementation plans for radioaids systems; and
- d) National programmes for the holding of navaid flight tests.

3.16 The Meeting considered that, due to the high costs of the radar systems (primary and secondary) and with the aim of facilitating the implementation of radar surveillance systems in a safe, efficient and cost/efficient manner, States should take into consideration, where possible, the establishment of bilateral and multilateral arrangements to share radar data with the ATS units of neighbouring States. Therefore, the Meeting formulated the following conclusion:

Conclusion 1/20 - Radar data sharing

That Brazil, French Guiana, Guyana, Suriname, Trinidad &Tobago and Venezuela, with the aim of facilitating the implementation of the radar surveillance services in a safe and cost/efficient manner, take into consideration the possibility of establishing bilateral or multilateral agreements to share, where possible, radar data between neighbouring States ATS centres and use a common radar format and communications protocol for the exchange of radar data.

3.17 The Meeting was informed that the AFTN message with maximum priority (SS) sent to the Rochambeau message switching centre could not be appropriately processed by that centre. The technicians, after having analyzed the problem, concluded that the messages unable to be processed did not comply with the procedures established in ICAO Annex 10, Volume II, Section 4.4.4, paragraphs 4.4.4.3 and 4.4.4.5, given that in the ITA-2 message format, the line feed signal was missing from the alarm priority line establishing high priority (SS) messages.

3.18 To identify whether this problem originated from a SAM switching centre, the Meeting considered the need to carry out trial high priority message remittances. The test will consist in the remittance of a high priority message from the Paramaribo switching center to the Rochambeau, French Guiana, message switching center. This message, before reaching French Guiana, will pass through the Maiquetia and Brasilia switching centers. The test will be held on **18 April 2001 at 15 hours UTC**, being it necessary to inform States involved beforehand, as well the SAM Regional Office, the name, telephone, fax, electronic mail of the person in charge of said test. With the aim of solving the problem, the Meeting formulated the following Conclusion:

Conclusion 1/21 - AFTN procedure in distress messages

That Brazil, French Guiana, Guyana, Suriname, Trinidad &Tobago and Venezuela, upon sending distress, alarm and urgent AFTN messages considered of maximum priority (SS), comply with specifications in Annex 10, Volume II, Sections 4.4.4.3 and 4.4.4.5 (lack of line feed signal after the priority alarm).