WP04

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Western and Central African Office

Workshop on the mitigation of loss of Operational messages (Flight Plans, NOTAMs & OPMETs)

(Dakar, 12 – 14 May 2014)

Agenda item 2: Overview of the status of implementation and Performance of the AFI Aeronautical fixed Service (AFS)-AFTN

Requirements for the performance of the Aeronautical Fixed Telecommunication Network (AFTN)

(Presented by the Secretariat)

SUMMARY
This working paper presents an overview on the requirements for the performance of the Aeronautical Fixed Telecommunication Network (**AFTN**) circuits, which support the operational messages (Flight Plans, NOTAMs and OPMETs), identifies deficiencies in order to seek for remedial actions;
Action by the meeting is at paragraph 3.
Annex 10- Aeronautical Telecommunications (Volumes 1, 2 and 3) **Annex 11-** Air Traffic Services **Doc 8259** - Manual on the Planning and Engineering of the Aeronautical Fixed Telecommunication Network **Doc 9702** - Report of the Seventh Africa-Indian-Ocean Regional Air Navigation AFI / RAN /7 Meeting Report on the AFI Sp AFI / RAN /8 Meeting **APIRG** - Meeting Reports *Note: References can be downloaded from **www.icao.int/wacaf**.*
Related **ICAO Strategic Objectives**: **A**: ***Safety; B: Air Navigation Capacity and Efficiency*** Related **ICAO ASBU Performance Improvement Areas and Block0 Modules**: **PIA1 (*B0-FICE*); PIA2 (*B0-DATM, B0-AMET*) PIA3 (*B0-FRTO, B0-NOPS, B0-ASEP, B0-OPFL, B0-SNET*);**

1. Introduction

1.1 This paper presents an overview on the global and regional requirements for the performance of AFTN circuits in the AFI Region.

1.2 The performance requirements for the operation of AFTN are essential to the continuous and homogenous provision of ATM.

2 Discussion

2.1 The requirements for AFTN communications performance are contained in ICAO Annex 10 Volume 1, 2 & 3. **Attachment F** to Volume 1of Annex 10 provides guidance material concerning availability and reliability of radiocommunications and navigation aids

Global requirements for AFTN

2.2 General requirements for the international aeronautical Telecommunication are provided in Annex 10 Volume 2, Chapter 2. The requirements are related to:

- **Telecommunication — Access**
- **Hours of service**
- **Supervision**
- **Control and mitigation of superfluous transmissions and or Interference**

2.3 Relevant procedures for the international aeronautical telecommunication are provided in Annex 10 Volume 2, Chapter 3 and address the following:

- **Extensions of service and closing down of stations**
- **Acceptance, transmission and delivery of messages**
- **Time system (*Universal Co-ordinated Time (UTC) shall be used by all stations in the aeronautical telecommunication service*)**
- **Record of communications**

2.4 Standards and Recommended Practices (SARPs) on Aeronautical Fixed Telecommunication Network are detailed in Annex 10 Volume 2, Chapter 4 and address the following:

- **Categories of messages (*distress messages; urgency messages; flight safety messages; meteorological messages; flight regularity messages; aeronautical information services (AIS) messages; aeronautical administrative messages; service messages*).**
- **Order of priority of messages** (***1: SS; 2: DD FF; 3: GG KK***)
- **Routing of messages**
- **Continuity of message traffic**
- **Failure of communications**
- **Long-term retention of AFTN traffic records** (*Copies of all messages, in their entirety, transmitted by an AFTN origin station shall be retained for a period of at* ***least 30 days****; AFTN destination stations shall retain, for a period of* ***at least 30 days****, a record containing the information necessary to identify all messages received and the action taken thereon*)
- **Short-term retention of AFTN traffic records (*Except as provided in 4.4.1.7.2, AFTN***

Communication centres shall retain, for a period of at least one hour, a copy of all messages, in their entirety, retransmitted or relayed by that communication centre)

- **Test procedures on AFTN channels**
- **Messages Format and Addressing**

AFI Regional Requirements for AFTN

2.5 The AFI Aeronautical Fixed Telecommunication Network plan is detailed in FASID Table CNS 1A as per Recommendation 9/7 of the 7th AFI/Ran Meeting held in Abuja, Nigeria on May 1997. AFI/RAN/è also recommended that States should take the appropriate measures to achieve and maintain the availability of 97% or more of the AFTN circuits (Rec. 9/3).

2.6 States were invited to take positive measures to ensure systems reliability and provide adequate management and supervision of facilities to eliminate systems failure and to ensure the message integrity, data integration and timely delivery of messages (Rec.9/5)

AFS personnel training and liaison visits by communication personnel were also addressed by AFI RAN/7 (Rec. 12/26 & 7/13).

AFI AFTN Performance

2.7 Significant improvements have been noted, notably with the implementation of aeronautical satellite telecommunications networks.

Despite these improvements, the ***minimum availability specification of 97%*** stated in the AFI Air Navigation Plan (**AFI/7 Recommendation 9/3**) is not met by a number of AFTN circuits. This adversely affects flight coordination between ATS units as well as AIS, OPMET and SAR messages, which in turn has negative impact on air transport operations safety and efficiency.

2.8 The non- availability of AFTN circuits is one of most concern in particular with regard to the missing Flight Plans, NOTAMs and OPMETs encountered in the AFI Region. The safe operation of interconnected automated ATM systems requires a high level of availability of Flight Plans.

The poor availability of AFTN encountered results from the obsolescence of some VSAT technologies.

However States and ANSPs have planned to modernize the VSAT networks.

2.9 Various forms have been developed in order to collect the performance of AFTN. Unfortunately the Regional Offices (ESAF and WACAF) are not regularly provided with all the information. These difficulties encountered by the secretariat to receive AFTN availability data are barriers which require ANSPs to accelerate the automation of the collection of AFTN availability data as called upon by APIRG 17 held in Ouagadougou on July 2010:

CONCLUSION 17/14: AFTN MONTHLY STATISTICAL DATA

That, States which have not done so, follow up on and implement Recommendation 9/4 of AFI/7 (Performance of AFTN Circuits) and Decision 16/12 of APIRG/16 (Follow up of the performances of the aeronautical fixed service) by forwarding to the Regional Offices the AFTN Monthly Statistics (missing flight plans status, transit time statistics).

CONCLUSION 17/15: DEVELOPMENT OF AN AFTN DATABASE

That:

a) States provide AFTN centers with statistics software for the automation of AFTN data collection; and

b) ICAO develops a secured data base to facilitate web-based electronic compilation of AFTN statistical data collection and monitoring.

3. Action by the meeting

3.1 The meeting is invited to:

a) Take note of the information provided in this working paper;

b) Review the performance of the AFTN circuits in particular the availability of Flights plans, NOTAMs and OPMETs

c) Encourage states and organization to fill forward to the regional offices the Performance Data Collection Forms as, presented at Appendix to this working Paper

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