INTERNATIONAL CIVIL AVIATION ORGANISATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)
AFI OPMET MANAGEMENT TASK FORCE (AFI OPMET MTF)
THIRD MEETING (AFI OPMET MTF/3)
(Dakar, Senegal, 27 – 28 June 2011)

Agenda Item 3b: AMBEX implementation status report by Dakar RODB

IMPLEMENTATION STATUS OF THE DECISIONS AND RECOMMENDATIONS OF AFI OPMET MTF/2 AND APIRG/17 MEETINGS

(Presented by Dakar RODB)

SUMMARY

This paper describes the actions undertaken by ASECNA to implement the decisions, recommendations and conclusions of AFI OPMET MTF/2 and APIRG/17 meetings.

1. INTRODUCTION

1.1 The Task Force will recall that OPMET MTF/2 meeting in Johannesburg, South Africa (6-7 September 2010) calls for a number of Recommendations and Decisions on the AMBEX scheme to be implemented by AFI RODBs. The APIRG/17 meeting also calls for OPMET related Conclusions to be implemented by AFI RODBs.

1.2 This paper presents the AMBEX implementation status report at Dakar RODB including MTF/2 Recommendations 2/3, 2/7, 2/8, 2/15, Decisions 2/6, 2/10, 1/18, APIRG/17 Conclusions 17/74, 17/75, 17/77, 17/78 and other implementations.

2. DISCUSSIONS

2.1 Implementation of Recommendation 2/3 of the MTF/2 Meeting.

2.1.1 Recommendation 2/3 of the MTF/2 Meeting states that:

"*MTF/2, Recommendation 2/3: Schedule of the AFI OPMET Monitoring*

Dakar and Pretoria RODBs are recommended to:

a) Implement an automatic OPMET data monitoring scheme using procedures in Chapter 12 and Appendix F of the AMBEX Handbook on quarterly basis (March 31, June 30, August 31 and December 31 of each year).

b) Distribute the monitoring statistics to the Chairman of the Task Force and the Secretariat.

c) Perform regular 24 hours simultaneous monitoring starting at 00:00:00 UTC on the first Wednesday of every month.

d) Implement the above tasks starting on 01st January 2012."

2.1.2 In May 2011, Dakar RODB implemented procedures for quality control of OPMET according to Appendix F of Chapter 12 of the AMBEX Handbook. These compliance checks, availability and consistency are done on the basis of index calculation.

2.1.3 The results of these checks will be generated manually at the end of each quarter by an operator and transmitted over the AFTN to BCC from liability and automatically by E-mail to the President of the MTF team, the officials of BCC and the Secretariat. The headers of the messages corresponding to the various controls are:

Summary of AFI SIGMET Tests:

- Case of the AFI SIGMET Test with header SIGMET WS : AXSG31 GOOY YYGGgg
- Case of the AFI SIGMET Test with header VAA : AXSG32 GOOY YYGGgg
- Case of the AFI SIGMET Test with header TCA: AXSG33 GOOY YYGGgg
- Case of the AFI SIGMET Test with header SIGMET WC : AXSG34 GOOY YYGGgg
- Case of the AFI SIGMET Test with header SIGMET WV : AXSG35 GOOY YYGGgg

1) Case of results of the monitoring of scheduled OPMET data : AXSG36 GOOY YYGGgg
2) Case of results of the compliance index : AXSG37 GOOY YYGGgg
3) Case of results of the Availability index : AXSG38 GOOY YYGGgg
4) Case of results of the Regularity index: AXSG39 GOOY YYGGgg.

2.1.4 However, none of these indications informs about the deadline of reception of the messages. It's agreed to maintain the control of availability of the regular messages (METAR and TAF) and to determine acceptable ranges of different indices.

2.2 Implementation of Recommendation 2/7 of the MTF/2 Meeting.

2.2.1 Recommendation 2/7 of the MTF/2 Meeting states that:

"Recommendation 2.7 MTF/2: Direct AFTN Link between AFI ROBDs

a) Dakar and Pretoria RODBs Provider States shall take the required measures to provide direct AFTN connection between both RODBs to facilitate the implementation of back up procedures between them.

b) Back up procedures for the two RODBs shall be developed for users and supported by reliable telecommunications facilities. "

2.2.2. It is necessary to recall that:

1. The center of Dakar, which houses the RODB, has a satellite link with Johannesburg AFTN center at 9600 Kbps, working in asynchrone protocol on the CAFSAT network.
2. Johannesburg AFTN center is also linked with Brazzaville and Antananarivo at 2400 Kbps trough AFISNET network. In addition, ASECNA will proceed before the end of December 2011 to the implementation a TCP / IP connections between ASECNA's centers. However the extra ASECNA links will be maintained in asynchrone protocol whilst the upgrade is considered on a regional basis.
3. The Dakar RODB server is doubled and operates in normal mode / hot standby. The changeover is made without loss of data.

2.2.3. ASECNA proposes to implement the dedicated AFTN circuit between Dakar and Pretoria Centers using:

- ASECNA implemented and operate a satellite VSAT network named AFISNET to provide all the aeronautical and meteorological telecommunications services. The implementation of a AFTN circuit between Pretoria and Dakar RODB will require the installation of an AFISNET nodes at Pretoria RODB Center using satellite IS10-02@359°E. ASECNA and South Africa National meteorological Service will coordinate to dimension the Pretoria VSAT station;

- Continuation of the AFISNET satellite link from Johannesburg to Pretoria by an internal link between Pretoria and Johannesburg (lease of an additional circuit may be required).

2.2.4. Coordination should be established between ATNS and Pretoria RODB to continue the new AFTN link from Johannesburg to Pretoria RODB via a lease line through South Africa telecommunication operator or and other appropriate mean

2.2.5. Comparison of the two solutions:

Solutions	Advantages	Disadvantages	Comments
Implementation of an AFISNET VSAT node in Pretoria	Direct and reliable link and operated by and Pretoria RODB.	Acquisition cost	ASECNA/South Africa to share the bandwidth cost.
Continuation of the AFISNET satellite link from Johannesburg to Pretoria RODB	• Existing AFISNET nodes in Dakar and Johannesburg • Low initial cost.	• VSAT operated by ATNS • Lease line provide by external operator (availability) • Recurrent charges.	Use of AFISNET node implemented in Johannesburg.

2.2.6. From the above information the meeting may wish to formulate the following recommendation:

Recommendation 3/xx: Implementation of a AFTN Circuit between Dakar and Pretoria RODB

That, Dakar and Pretoria RODB expedite the implementation of the dedicated AFTN circuit between the two RODBs via an AFISNET node to be installed in Pretoria in coordination with ASECNA.

2.2.7. Each RODB (Dakar or Pretoria) is a backup for the other, since the instantaneous state of the data base between the two banks is almost identical. In case of failure of the temporary service Web RODB Dakar, Dakar BCC continues to play its role. In case of momentary blackout of downtown Dakar, Brazzaville BCC can relay AMBEX area bulletins from Dakar to Johannesburg via Pretoria. In both cases of unavailability, the RODB Pretoria can service Web AFI.

2.2.7. ASECNA has recently implemented a system of supervision of BCC message switches and NOC of its area to remotely monitor the operation of various links and nodes in the network, the routing tables and routing directories. This system also allows to remotely identify anomalies in routing messages. In the case of force majeure, it is also possible to remotely fix the dysfunctions in the programming and broadcasting messages from a particular center. In short, the ASECNA network becomes progressively transparent.

2.3 Implementation of Recommendation 2/8 of the MTF/2 Meeting.

2.3.1 Recommendation 2/8 of the MTF/2 Meeting states that:

"Recommendation 2.8 MTF/2: Improvement of the availability of OPMET from a number of AFI States

Efforts shall be made by the concerned States to improve the availability at Dakar RODB, of required OPMET from Accra, Conakry, Freetown, Kano, Kinshasa, Lagos and Luanda. "

2.3.2. The quality of data exchange is highly dependent on OPMET operation links between the NOC and BCC of attachment and respect of procedures for data transmission. However, we can note an improvement in the availability of TAF and METAR from Kinshasa, Luanda and Lagos. Efforts are still needed to reach the threshold of 97% minimal availability required by ICAO.

2.4 Implementation of Recommendation 2/15 of the MTF/2 Meeting.

2.4.1 Recommendation 2/15 of the MTF/2 Meeting states that:

"Recommendation 2.15 MTF/2: Implementation of Special AIREP by Dakar RODB

That, Dakar RODB implements all types of OPMET data described in the AMBEX Handbook including special AIREP (UA). "

2.4.2. The Dakar RODB has implemented all required data types including special AIREP. However, there is a very low availability of data from BCC AIREP area due to a poor ATS / MET / PILOTS coordination needed to improve the collection and dissemination of special AIREP.

2.5 Implementation of Decision 2/6 of the MTF/2 Meeting.

2.5.1 *"Decision 2.6 MTF/2: AMBEX Implementation Status report by AFI RODBs*

That, Dakar and Pretoria RODBs Managers submit AMBEX scheme implementation reports to the AFI OPMET MTF Meetings."

2.5.2. The catalogue of Bulletins received and transmitted by Dakar RODB, can be found in the website of the ASECNA Representative in Senegal: http://www.asecnarep.com.

2.6 Implementation of Decision 2/10 of the MTF/2 Meeting.

2.6.1 *"Decision 2.10 MTF/2: Internet access Address of the RODBs*

That, Dakar and Pretoria RODBs Managers publish the following Internet access address of the RODBs:

Dakar RODB: http://brdo.asecna.org/

Pretoria RODB: http://aviation.weathersa.co.za"

2.6.2. The Regional OPMET Data Bank (RODB) of Dakar:

a) The regional data bank is accessible via Internet at: http://brdo.asecna.org/.

b) The AFTN address of the Dakar RODB is: GOOYYZYZ.

c) The catalogue of Bulletins received and transmitted by Dakar RODB, can be found in the website of the ASECNA Representative in Senegal: http://www.asecnarep.com.

2.7 Implementation of Decision 2/18 of the MTF/2 Meeting.

2.7.1 Decision 2/18 of the MTF/2 Meeting states that:

"Decision 2.18 MTF/2: Awareness of MWOs to issue SIGMETs

AFI BCCs and RODBs shall provide guidance and support to MWOs which are unable to issue SIGMETs for one reason or another using information at their disposal such as weather satellite information and SPECIs."

2.7.2. The practical arrangements for the transfer of responsibilities from one circumstantial MWO to another within the ASECNA area are already defined. Regarding the MWO under non-ASECNA member states, ASECNA is willing to consider the feasibility of transferring responsibility for a WMO State that is no longer

able to perform its obligations for any reason to a MWO ASECNA state for a defined period, at the request of that state.

2.8 Implementation of Conclusion 17/74 of the APIRG/17 Meeting.

2.8.1 Conclusion 17/74 of the APIRG/17 Meeting states that:

"Conclusion 17/74 APIRG/17: SADIS Workstations evolutions

States shall ensure that their current workstations fulfill the software requirements outlined on the WAFSOPSG website and take corrective action, as necessary, with their workstation providers."

2.8.2. ASECNA has conducted in May 2011 a survey to update the SADIS 2G software of all its WMO states to take into account the advisory tests SIGMET format text, received from Toulouse or Johannesburg.

2.9 Implementation of Conclusion 17/75 of the APIRG/17 Meeting.

2.9.1 Conclusion 17/75 of the APIRG/17 Meeting states that:

"Conclusion 17/75 APIRG/17: OPMET exchange requirements and inter-regional OPMET gateway (IROG) functions."

a) The OPMET data type, OPMET bulletins and types of OPMET exchange at Appendix 3.5C, be implemented by Dakar and Pretoria Regional OPMET data banks (RODBs), AMBEX bulletin compiling centres (BCCs) and National OPMET Centres (NOCs) as the OPMET requirements in the AFI Region; and

b) The IROG functions and the requirements for the exchange of OPMET between the AFI Region and adjacent Regions in Appendices 3.5D and 3.5E to this report are implemented by Dakar and Pretoria RODBs as the requirements for the interregional OPMET exchange in the AFI Region."

2.9.2. All types of data and reports of OPMET implemented on the Dakar RODB are in accordance with Appendix 3.5 E Report of the Meeting APIRG/17. Unfortunately, the special AIREP is virtually absent on the network. There is an urgent need to improve ATS/MET/PILOTS coordination to improve the availability of AIREP special in the AFI Region."

2.10 Implementation of Conclusion 17/77 of the APIRG/17 Meeting.

2.10.1. Conclusion 17/77 of the APIRG/17 Meeting states that:

"Conclusion 17/77 APIRG/17: OPMET Exchange monitoring and management procedures at BCC and RODBs

That, the OPMET management and monitoring procedures given in appendices 3.5I and 3.5J to this report be implemented by the RODBs and the BCCs as the requirements for OPMET exchange monitoring and management procedures in the AFI region."

2.10.2. Control of procedures in Appendices 3.5i and 3.5J of APIRG/17 report have been implemented to Dakar RODB. During 2012, this will be extended to BCC Dakar, Brazzaville, Niamey and Antananarivo.

2.11 Implementation of Conclusion 17/78 of the APIRG/17 Meeting.

2.11.1 Conclusion 17/78 of the APIRG/17 Meeting states that:

"Conclusion 17/78 APIRG/17: Interface Control Document (ICD) for AFI OPMET Database Access procedures

That,

The procedures given in Appendix 3.5I to this report be implemented as the Regional Interface Control Document (ICD) access procedures for AFI OPMET database; and The ICD be published by the ICAO Regional Office(s). ”

2.11.2. The access procedures to database of Dakar RODB were given to the ICAO (WACAF) and listed in Appendix 3.5I on Report for APIRG / 17.

2.12 Others Implementations

2.12.1. Implementation of action recommended of report AFI Test SIGMET

“Action recommended 1/3: Displaying VAA and SIGMET Messages through the Dakar RODB Internet Access

That the Dakar RODB Provider State and ASECNA take the required measures to:

a) display VAA and SIGMET messages through the Internet Access of that RODB;

b) file automatically the SIGMET Test results using the Table in Attachment B to Appendix N of the APIRG/16 report (or Attachment 2 to Appendix J of SIGMET) Guide)”.

2.12.2. After the software update made to Dakar RODB in May 2011, consultation of the VAA and SPECI messages is now possible, METARs, TAFs and SIGMET can be consulted as well. Moreover, test results of AFI SIGMET are automatically saved following Appendix J SIGMET Guide (See Section 2.1.1. rec.2 / 3 of the MTF / 2 Meeting).

2.12.3. Implementation of action recommended 1/7 of report AFI Tests SIGMET – Phase 1 (Nov. 2008)

“Action recommended 1/7 AFI Tests SIGMET – Phase 1: Displaying the VAA Message

That, the MWOs provider States in the AFI Region take the required measures to display or print the incoming VAA message in the forecast room with visual and sound alarms”.

2.12.3.1. The SADIS 2G workstation software was updated in May 2011. The station can now receive and display the advisory of SIGMET WS, WC and WV with visual and audible alarms in MWO Dakar, Brazzaville, Niamey, N'djamena and Antananarivo. This is also the case for advisory of SIGMET called AVISIG (TT = WXAA39) "which are used exclusively in the ASECNA area to allow MET office to support the MWO in the identification of SIGMET phenomena.

3. ACTION BY THE MTF

3.1. The MTF is invited to:

a) note the information in this paper;
b) review Dakar RODB implementation report and decide on the above recommendations.

Appendix A: Summary of Dakar RODB Implementation Status

APIRG or MTF Conclusions, Decisions and Recommendation	Implementation Action undertaken by Dakar RODB	Comments
MTF/2, Recommendation 2/3: Schedule of the AFI OPMET Monitoring *Dakar and Pretoria RODBs are recommended to:* *a) Implement an automatic OPMET data monitoring scheme using procedures in Chapter 12 and Appendix F of the AMBEX Handbook on quarterly basis (March 31, June 30, August 31 and December 31 of each year).* *b) Distribute the monitoring statistics to the Chairman of the Task Force and the Secretariat.* *c) Perform regular 24 hours simultaneous monitoring starting at 00:00:00 UTC on the first Wednesday of every month.* *d) Implement the above tasks starting on 01st January 2012."*	1) **Monitoring of Scheduled OPMET data** • Computing the compliance index • Computing the regularity index • Computing the availability index 2) **Monitoring of non-scheduled OPMET data** • The monitoring results will be shown in a bulletin oriented format, a line per bulletin; **1) Distribution of the Monitoring Results** • The AFI SIGMET test is not a continuous activity. When implemented the related table in the AFI SIGMET Guide will be filled out by Dakar RODB and exchanged with MWOs. For example, the following recipients : FCBBPRVI, GOOYPRVI, DRRNPRVI, FTTJPRVI or FMMIPRVI ; • The same results will be sent by e-mail to some pre recorded addresses. For example: the President and members of MTF, the ICAO Ros/MET, etc..	

"Action recommended 1/7 AFI Tests SIGMET – Phase 1: Displaying the VAA Message *That, the MWOs provider States in the AFI Region take the required measures to display or print the incoming VAA message in the forecast room with visual and sound alarms".*	On the workstation SADIS 2G located in the aviation forecast room, a red indicator lights up and an audible alarm sound for incoming warning message. Both alarms only stop if the message is consulted. These are the following: **1) At Brazzaville MWO** – Upon receipt of an advisory on a volcanic eruption (FVCM20 FKKD YYGGgg) from Douala AMO; – Upon receipt of a volcanic ash advisory VAA (FVFR31 LFPW YYGGgg) from Toulouse VAAC; – Upon receipt of a WS SIGMET advisory (FQFR31 LFPW YYGGgg) from Toulouse; – Upon receipt of any WS SIGMET advisory (WXAA39 YYGGgg UNFCCC) from the following centers: Douala, Bangui, Libreville and Malabo. **2) At the CVM Dakar MWO** – Upon receipt of a VAAC advisory (FVFR31 LFPW YYGGgg) from Toulouse; – Upon receipt of a WS SIGMET advisory (FQFR31 LFPW YYGGgg) from Toulouse; – – Upon receipt of any WS SIGMET advisory (WXAA39 YYGGgg UNFCCC) from the following centers: Bamako, Nouakchott, Abidjan, Bissau	

	3) 3) At Antananarivo MWO - Upon receipt of a volcanic eruption advisory (FVIC20 FMCH YYGGgg) from Moroni AMO; - Upon receipt of a volcanic ash (FVFR31 LFPW YYGGgg) from Toulouse VAA; - Upon receipt of a tropical cyclone advisory (FKFR31 LFPW YYGGgg) from La réunion; - Upon receipt of a tropical cyclone advisory from Toulouse VAA (FVFR31 LFPW YYGGgg); - Upon receipt of an advisory opinion of WAS SIGMET (FQFR31 LFPW YYGGgg) from Toulouse; - Upon receipt of any WS SIGMET advisory (WXIC39 CCCC YYGGgg) from the following centers: Moroni. **4) At Niamey MWO** • Upon receipt of a VAA Advisory (FVFR31 LFPW YYGGgg) from Toulouse; • Upon receipt of a WS SIGMET advisory (FQFR31 LFPW YYGGgg) from Toulouse; • On receipt of any WS SIGMET advisory f (WXAA39 CCCC YYGGgg) from the following centers: Ouagadougou, Cotonou and Lomé. **4) 5) At Ndjamena MWO** • Upon receipt of a VAA advisory (FVFR31 LFPW YYGGgg) from Toulouse; • Upon receipt of a WS SIGMET advisory f (FQFR31 LFPW YYGGgg) from Toulouse; • - Upon receipt of any WS SIGMET advisory (WXAA39 CCCC YYGGgg) from the following centers: Bangui.	

NB: To ensure the reception of messages by the forecaster at the Aerodrome Meteorological Offices (AMO), Conventionally in ASECNA, the AMO AFTN is presented as follows: CCCCPRVI. Example if the Douala AMO wants to send a WS SIGMET advisory to Brazzaville MWO, the destination AFTN address will be: FCBBPRVI.