International Civil Aviation Organization

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
SIXTEENTH MEETING (APIRG/16)
(Kigali, Rwanda 19-23 November 2007)

Agenda Item 4 : AFI Regional Air Navigation Planning and Implementation Issues

4.4 : Meteorology – Review of the report of the Eighth Meeting of the Meteorology Sub-Group (MET/SG/8)

Review of the Report of the MET/SG/8 Meeting

(Presented by the Secretariat)

This paper presents the report of the Eighth Meeting of the MET/SG/8. The Sub-Group reviewed action taken on various conclusions and decisions of the APIRG. The meeting also discussed various matters including the WAFS in the AFI Region, the AFI Meteorological Bulletins Exchange (AMBEX) Scheme, and provision of tropical cyclone and volcanic ash advisories for the AFI Region, the list of deficiencies in the MET field and challenges facing AFI meteorological services.

1. Introduction

1.1 The Eighth Meeting of the Meteorology Sub-Group (MET/SG/8) was held at the ICAO Eastern and Southern African Office (ESAF) Nairobi, Kenya, located within the United Nations Office in Nairobi, Kenya, from 25 to 27 June 2007. The meeting was attended by 27 participants from 15 States and three international organizations. Ms. G.E. Khambule, Senior Manager, Aviation Weather Services, South African Weather Service and Mr. Zoa Etundi Englebert, Inspector No.2 Services, Cameroon Civil Aviation Authority, were elected Chairperson and Vice-Chairperson respectively.

2. Review of APIRG Conclusions and Decisions

2.1 The Sub-Group made an in-depth review of Conclusions and Decisions formulated by previous MET/SG meetings and which were adopted by the APIRG. It noted action taken and progress made so far on the implementation of these conclusions and decisions listed. (See APRIG/16-WP/3 and WP/4).

2.2 The meeting also noted the efforts made by States to implement the Decisions and Conclusions of the MET/SG adopted by the APIRG in particular by ASECNA Member States. However there was great concern that many States did not respond to the State letters from ICAO AFI Regional Offices on follow-up on the status of implementation of these conclusions and decisions and other matters of implementation of the AFI Air Navigation Plan. States were urged to respond promptly to ICAO State letters as this would facilitate good planning and decision making for the AFI Region.

Conclusion 16/…: Response by the States to ICAO Regional Offices State letters

That, States respond promptly to ICAO Regional Offices State letters soliciting information on the status of implementation of the relevant Decisions of the MET/SG and the MET related Conclusions and Decisions of APIRG and other implementation issues in the MET field.

3. WAFS in the AFI Region

3.1 Under this agenda item, the Sub-Group reviewed the implementation of the World Area Forecast System (WAFS) in the AFI Region on the basis of the reports from the WAFS Operations Group (WAFSOPSG) and the Satellite Distribution System (SADIS) Operations Group (SADISOPSG). The meeting also reviewed the detailed information provided by the World Area Forecast Centre (WAFC) London on the recent and forthcoming developments in the WAFS and SADIS.

3.2 In this regard, the meeting noted the draft amendment to WAFS regional procedures and to FASID Tables MET 5, MET 6 (**Appendix A**) and MET 7 in **Appendix B** to this paper and included the proposed Tables together with the regional procedures related to WAFS in the next amendment to AFI ANP/FASID.

3.3 Within the framework of the development of the WAFS, the Sub-Group noted the trial forecasts of icing, turbulence and convective clouds being generated routinely in GRIB2 code form at the WAFCs that should be evaluated by the users through a formal feedback mechanism. To encourage the appropriate use of these new forecasts in GRIB2 code form, it was considered desirable to convene regional training seminars.

Conclusion 16/…: Training seminar on the use of icing, turbulence and convective clouds forecasts in GRIB2 code form

That the WAFC London Provider State be invited, in coordination with ICAO and WMO, to provide training seminars on the use of icing, turbulence and convective clouds forecasts in GRIB2 code form, to AFI States;

Note. - It is suggested that a seminar be convened in 2009 to be conducted in French and that another seminar be organized in 2010 to be conducted in English.

3.4 The group agreed that the implementation of the SADIS second generation VSAT (SADIS 2G) should be included in the list of the status of implementation of SADIS in the amended FASID Table MET 7 accordingly as given in the **Appendix. B** to this working paper. In this regard, the MET/SG amended the FASID AFI MET 7 Table by formulating the following decision:

Draft Decision 16/…: Indication of the type of VSAT in the FASID Tables MET 7: Implementation of SADIS in the AFI Region

That, information related to the type of the VSAT station be included in the FASID Table MET 7 of the AFI plan as given in Appendix . XX to this report.

3.5 The meeting was informed by ASECNA on the implementation of SADIS Second Generation VSATs (SADIS 2G) and SADIS FTP together with the SADIS workstation software in its 17 Member States by December 2007. The Sub-Group noted with satisfaction efforts made by ASECNA in the implementation of the WAFS in the AFI Region.

3.6 The MET/SG noted that the SADIS FTP service was operationally launched in July 2005, which offers approved SADIS users with an alternative, high-quality internet based solution for receiving WAFS and OPMET data. The SADIS FTP service is an ICAO-approved distribution system and an integral part of the SADIS service, complementing, and providing backup for the SADIS 1G and 2G satellite services. To assist users intending to access this service, the meeting formulated the following conclusion:

Conclusion 16/…: SADIS FTP Accounts

That approved SADIS users in the AFI Region who have internet capabilities and do not have an active SADIS FTP account write to the SADIS Provider State to have an access account.

3.7 To improve the availability on SADIS, of ASHTAMs and NOTAMs related to volcanic ash (VA), the MET/SG formulated the following conclusion:

Conclusion 16/…: Availability on SADIS, of ASHTAM and NOTAM related to volcanic ash (VA)

That, in order to improve the availability on SADIS, of ASHTAMs and NOTAMs related to VA, the ICAO Regional Offices in the AFI Region remind States, of the requirement to transmit all ASHTAMs and NOTAMs related to VA to the AFTN address EGZZVANW.

3.8 The meeting reviewed the SADIS Strategic Assessment Tables as given at **Appendix C** with entries regarding the current and projected data volumes for the period 2007-2011. The meeting agreed on the proposed tables and formulated the following conclusion:

Conclusion 16/…: SADIS Strategic Assessment Tables

That, the AFI SADIS Strategic Assessment Tables, as given in Appendix . XX to this report, be adopted and forwarded to the SADISOPSG for planning the future SADIS bandwidth requirements.

4. OPMET Information Exchange Management

4.1 The meeting noted that the AMBEX scheme was introduced several years ago and has been operational ever since. The scheme is operating sufficiently well in certain AFI regions but telecommunications circuit performance and adherence by States to procedures is still a challenge in some areas. Initially, there were monitoring periods of data availability and quality. For several years now, there has been no regular monitoring. Other regions like EUR, ASIA/PAC and now MIDANPIRG have established OPMET information exchange management Groups. The Group agreed that there was merit to establish a similar Group in the AFI Region to ensure sustained availability of high quality OPMET information to users.

4.2 The meeting recalled that APIRG through Decision 12/66 and Conclusion 15/89, called for the establishment of OPMET databanks at Dakar, Senegal and Pretoria, South Africa. The databanks have been established and are operational. These OPMET databanks have the capacity to undertake systematic monitoring of the availability and regularity of OPMET data. The monitoring should be best conducted by the OPMET databanks. The AFI Region could benefit from monitoring procedures for the regular OPMET exchange (METAR and TAF) which have been developed in the EUR and ASIA/PAC Regions. These procedures include performance indicators (PIs) for compliance, availability and regularity of the scheduled, routine OPMET information (METAR (SA) and TAF (FT)).

4.3 With the aim of improving data availability and quality and to put in place objective monitoring procedures, the Sub-Group agreed to establish an AFI OPMET Management Task Force (AFI OPMET/M TF) with proposed terms of reference and work programme at **Appendix E**.

Conclusion 16/…: AFI OPMET Management Task Force (AFI OPMET/M TF)

That, an AFI OPMET Management Task Force with the terms of reference at the Appendix . XX be established.

4.4 The meeting agreed that since Regional OPMET Data Banks (RODBs) have been established it is important to reflect their role in the exchange of OPMET information in the AMBEX Handbook.

4.5 Equally important is the need to reflect how SIGMET information is exchanged in the region. It is recalled that SIGMET information is critical weather information for aircraft in flight and such it should be distributed to other ICAO regions and made available to Inter-regional OPMET Gateway (IROG), Toulouse, France.

4.6 The meeting agreed to amend the Handbook to reflect the responsibilities of the recently established RODBs and the SIGMET requirements. The Sub-group then formulated the following decision.

Draft Decision 16/…: Inclusion of Regional OPMET Data Banks and SIGMET requirements in the AMBEX Handbook

That, the operations of the AFI Regional OPMET Data Banks and SIGMET requirements be reflected in the AMBEX Handbook as per the text at Appendix.XX .

5. Provision of tropical cyclones and volcanic ash advisories for the AFI Region

5.1 The meeting discussed the issuance of volcanic ash advisories by Volcanic Ash Advisory Centre (VAAC), Toulouse and the SIGMETs to be issued by the associated meteorological watch offices (MWOs) and the need for routine volcanic ash tests. The Group recalled APIRG Conclusion 15/90 on the need to carry out such tests. The requirement for such tests is due to the fact that occurrence of volcanic ash events are irregular and operational personnel involved in procedures used in area control centers (ACCs), meteorological watch offices (MWOs), volcanic ash advisory centers (VAACs) may not be able to participate in real events for many years.

5.2 The meeting was informed that due to incomplete addresses to be used for the distribution of volcanic advisories in the AFI region and the addresses to be used by MWOs for the distribution of the related SIGMET, tests carried out in 2006 were not successful. The meeting felt that urgent action has to be taken to address the issue. The Group agreed that the ICAO Regional Offices in the AFI Region were better placed to undertake the task. The meeting emphasized the importance of training and urged that WMO in coordination with ICAO and VAAC Toulouse Provider State arrange for a training workshop on VA SIGMETs. The meeting then formulated the following conclusions:

Conclusion 16/…: Adoption of procedures for conducting SIGMET tests for the AFI Region

That:

1) the ICAO Regional Offices in the AFI Region:

a) assume the responsibility for the development of addressees related to the volcanic ash advisories (VAA) coming from the Volcanic Ash Advisory Centre (VAAC), Toulouse and intended for the AFI Region;

b) make available to Inter-Regional OPMET Gateway (IROG), Toulouse ,WMO Headers that would facilitate the establishment of reception tests for volcanic ash advisories (VAA) within reasonable time limits;

c) request those States maintaining meteorological watch offices (MWOs) in the AFI Region to implement WMO headings for volcanic ash SIGMET and transmitted by those MWOs and make them available to IROG Toulouse; and

2) the procedures at the Appendix . XX be adopted for use in SIGMETs tests in the AFI Region after action had been completed on items a) to c).

Conclusion 16/…: SIGMET Workshops

That WMO in coordination with ICAO and VAAC Toulouse Provider State conduct two training workshops on SIGMET during 2008; one in English and another in French for the AFI Region.

Note: The workshops would address all types of SIGMET, including those related to VA and TC.

6. Deficiencies in the MET field

6.1 The meeting reviewed and updated the list of deficiencies based on the uniform methodology approved by Council for identification, assessing, tracking and reporting of deficiencies of air navigation systems. The review also took into account the remedial action from States concerned and inclusion of additional deficiencies identified since APIRG/15 meeting. The updated list of deficiencies in the meteorology field is presented in WP/25 under Agenda Item 5.

7. New challenges facing AFI Meteorological Services

7.1 The meeting recalled that the AFI Planning and Implementation Regional Group (APIRG) at its fourteenth meeting under Conclusions 14/37 and 14/38 called for the need to implement cost recovery for aeronautical meteorological by States including the conduct of seminars by WMO in coordination with ICAO. WMO in coordination with ICAO has conducted a series of seminars in cost recovery for aeronautical meteorological services since 1999 in English and French. The Sub-Group expressed its appreciation to the support provided by ICAO and WMO to participants at these seminars.

7.2 The Sub-Group further noted that ASECNA States have been implementing air navigation charges for aeronautical meteorology for several years. However, implementation in some States has been low, rendering the provision of aeronautical meteorological services unsustainable. One area where most aeronautical meteorological services faced impediment is on the legal aspects of undertaking cost recovery without an appropriate legal instrument establishing the aeronautical meteorology entity or cost recovery. The meeting agreed that the situation is far from satisfactory. Following the discussions the Sub-Group then formulated the following conclusion.

Conclusion 16/…: Legal framework for Aeronautical Meteorological Services

That States in implementing cost recovery for aeronautical meteorological services in accordance with APIRG Conclusions 14/37 and 14/38 put in place a national legal framework for aeronautical meteorological services which include cost recovery arrangements.

7.3 The Sub-group recalled that quality assurance-related standards and recommended practices were first introduced in ICAO Annex 15, to the Convention on International Civil Aviation *Aeronautical Information Services* which became applicable on 6 November 1997. Amendment 72 to ICAO Annex 3 to the Chicago Convention – *Meteorological Service for International Air Navigation* became applicable on 1 November 2001. It introduced Recommended Practices concerning quality control and management of meteorological information supplied to users and in the training of meteorological personnel. The provisions recommend conformity with the ISO 9000 series of quality assurance standards. While the ISO 9000 series of quality assurance standards provides a basic framework for the development of a quality assurance programme, the details of such programme have to be formulated by each contracting State.

7.4 The meeting took note of the action taken by APIRG at its fourteenth meeting (APIRG/14) under conclusion 14/40 cognizance of the new requirements of Annex 3, requested the States in the AFI Region to give priority to the implementation of quality management systems (ISO 9000 series of standards).

7.5 The Sub-Group also noted with appreciation that WMO in collaboration with ICAO conducted a Special Implementation Project (SIP) workshop on quality management for aeronautical meteorological services in Nairobi in May 2006 in English. The workshop was well attended. The Sub-Group discussed the recommendations of the workshop and agreed that they will assist the States in their efforts to introduce quality management systems. The WMO representative made a presentation on the subject and it was appreciated by the participants. The Sub-Group then formulated the following conclusion.

Conclusion 16/…: Support to States to implement quality management systems (QMS)

That WMO in coordination with ICAO continue to assist States in implementing QMS in the form of:

1) Seminars on QMS for the Chief Executives of Meteorological Authorities (CEOs) as a priority and request them (CEOs) to report on status of implementation on QMS in their services on a regular basis;

2) Support for more detailed training for personnel who would act as a core group in the region (training of trainers);

3) Attachments of staff from the region to States that have already adopted QMS through VCP or otherwise; and

4) Financial resources for engaging consultancy services during the initial stages of implementation.

8. Review of Regional Meteorological Procedures in AFI ANP/FASID

8.1 A review of AFI ANP/FASID regional procedures was made as result of Amendment 74 to Annex 3 and the changes introduced by the third meeting of the World Area Forecast Operations

Group (WAFSOPSG/3) and the third meeting of the International Airways Volcano Watch Operations Group (IAVWOPSG/3). The Group endorsed all the amendments for implementation except for the introduction of the 30-hour TAF which the meeting felt would require an assessment on whether all aerodromes would be affected or a selected few. The Sub-Group agreed that input from IATA would be required. IATA was not able to attend the meeting. The Sub-Group agreed to form an Ad Hoc Working Group which worked by correspondence to address the issue and reported on their assessment on 30 September, 2007. The Secretariat then documented the results for APIRG/16. The Sub-Group then formulated the following conclusion and decision.

Conclusion 16/…: Regional Meteorological Procedures

That the Regional Meteorological Procedures given at Appendix . XX to the report replace the existing regional procedures of the AFI ANP/FASID (Doc 7474).

8.2 On the basis of the assessment of the Ad Hoc Working Group the following decision is formulated:

Draft Decision 16/…: Introduction of 30-hours TAF in the AFI Region

That International aerodromes in the AFI Region currently issuing 24-hour TAF, should issue 30-hour TAF from 5 November 2008.

8.3 The meeting recalled that the SADISOPSG had formulated conclusion 11/9 calling for the secretariat to consider developing a database-oriented version of global FASID Table MET 1A. The database is considered necessary in order to maintain the currency of the database-oriented Annex 1 to the *SADIS User Guide* which contained the requirements for TAF and which should be, by definition, be consistent with all FASID Table MET 1A. The Sub-Group agreed that in order to avoid redundancy and possible misleading information, it is proposed that FASID Table MET 1A should be replaced by simple link (i.e. a URL address) to global database under the heading FASID Table MET 1A. The meeting was also informed that in the long term this would be applicable to all regional ANPs. The Regional Offices will update the table on annual basis and in consultation with States users (IATA, IFALPA) and the MET/SG as appropriate.

8.4 The meeting also agreed that in order to simplify FASID Table MET 1A, column 6 ("area of coverage of charts") and column 7 ("AFTN routing areas"), should be deleted since they do not reflect a RAN Agreement. The Group then developed the following conclusion.

Conclusion 16/…: Review and updating of FASID Table MET 1A

That:

a) FASID Table MET 1A be replaced by single link (i.e. a URL address) to the global database to be developed by the Secretariat in line with SADISOPSG Conclusion 11/9; and

b) Columns 6 and 7 in FASID Table MET 1A (the database to be re-named "Forecasts (TAF and TREND) to be issued for international aerodromes") be deleted.

8.5 The Sub-Group discussed the usefulness of FASID Table MET 2B SIGMET requirements and these are not listed in Annex 1 to the SADIS User Guide. However, in accordance with Annex 3, Appendix 6, 1.2.2 SIGMET was required to be disseminated to meteorological watch offices (MWOs) and to the SADIS uplink station. The meeting agreed that if fully implemented, it could be postulated that all States receive the global set of SIGMET. The RAN agreement called for by Appendix 6, 1.2.2 is reflected in:

a) the Basic Operational Requirements and Planning Criteria (BORPC) covering the needs by ATS Units and;

b) the Regional MET provision calling for each MWO to arrange for the transmission to all aerodrome meteorological offices with its associated FIR of its own SIGMET and relevant SIGMET messages for other FIRs, as required for briefing and, where appropriate, for flight documentation.

8.6 Under the circumstances it was agreed that if the above are retained in the ICAO ANP for the AFI Region, there is no requirement for FASID Table MET 2B and should be deleted. The Sub-Group then formulated the following conclusion.

Conclusion 16/…: Deletion of FASID Table MET 2B

That FASID Table MET 2B be deleted from the ICAO AFI FASID since the requirements for SIGMET are covered in the ANP Basic (BORPC and regional meteorological procedures).

9. Terms of reference, Work programme and composition of the MET/SG

9.1 The meeting noted that the work programme has been subject to revision and consolidation in accordance with the ICAO Business Plan and to better reflect the work that is being undertaken by the MET/SG, and reviewed the terms of Reference, the Work Programme and composition of the MET/SG as given at **Appendix H** accordingly. The meeting then endorsed the changes proposed and formulate the following decision:

Decision 16/…: Future work programme of the MET/SG

That, the work programme of the MET/SG be updated as shown in Appendix XX to this report.

10. Any other business

10.1 The WMO Representative Mr. Sillayo informed the Meeting that the Fifteenth Congress when discussing regional issues on aeronautical meteorology advocated for the establishment of regional groups under the WMO who would collaborate and cooperate with ICAO Planning and Implementation Regional Groups (PIRGs). The Sub-Group welcomed this development and agreed that it would be beneficial for the development of aeronautical meteorology in the region. The Group then formulated the following decision:

Decision 16/…: Coordination between WMO Regional Association 1 (Africa) and APRIG on Aeronautical Meteorology

That, the Chairperson of the Meteorology Sub-Group liaise with the WMO Rapporteur for Aeronautical Meteorology Programme for Regional Association1(Africa) on matters of common interest when required.

11. ACTION BY APIRG

11.1 The meeting is invited to:

a) note the information in this paper; and

b) decide on the draft decisions and conclusions proposed for the group's consideration.

Appendix A-1

FASID TABLE MET 5 — REQUIREMENTS FOR WAFS PRODUCTS

EXPLANATION OF THE TABLE

Column

1. WAFS products required by the AFI States, to be provided by WAFC [London, Washington].

2. Area of coverage required for the WAFS forecasts, to be provided by WAFC London.

FORECAST REQUIRED	AREAS REQUIRED
1	2
~~SWH CHART (FL 250 - 630)~~	~~[A, B, B1, C, D, E, F, G, H, I, J, K, M]~~
~~SWM/SWH CHART (FL 100 - 450)~~	~~[NIL *or* ASIA SOUTH, EUR, MID, NAT]~~
SWH forecasts (FL 250-630) in the BUFR code form	GLOBAL
SWM forecasts (FL 100-250) in the BUFR code form	[NIL *or* ASIA SOUTH, EUR, MID, NAT]
Forecasts of upper-air wind, temperature and humidity, and of altitude of flight levels in the GRIB code form	GLOBAL

Note 1.— Combined SWM~~/SWH charts~~ forecasts are provided for limited geographical areas as determined by regional air navigation agreement. ~~The chart covers the SWH range only up to FL 450~~

Note 2.— .WAFCs will continue to issue forecasts of SIGWX in PNG chart form ~~until 30 November 2006.~~ for back-up purposes for fixed areas of coverage as specified in Annex 3

APPENDIX A-2

FASID TABLE MET 6 —
RESPONSIBILITIES OF THE WORLD AREA FORECAST CENTRES

EXPLANATION OF THE TABLE

Column

1 Name of the world area forecast centre (WAFC).

2 Area of coverage of significant weather (SIGWX) forecasts in the BUFR code form prepared or relayed by the WAFC in Column 1.

~~3 Area of coverage of the SIGWX forecasts in chart form prepared or relayed by the WAFC in Column 1.~~

4 Area of coverage of upper-air wind, temperature, altitude of flight levels and humidity forecasts in the GRIB code form issued by the WAFC in Column 1.

WAFC	Areas of coverage of		
	SIGWX forecasts		Forecasts of upper-air wind, temperature and humidity, and of altitude of flight levels
	In the BUFR code form	~~In chart form~~	In the GRIB code form
1	2	~~3~~	4
London	SWH (FL 250 - 630): global SWM (FL 100 - 250): ASIA SOUTH, EUR and MID	~~SWH (FL 250 - 630): B, C, D, E, G, H and K~~ ~~SWM/SWH (FL100-450): ASIA SOUTH, EUR and MID~~	Global
Washington	SWH (FL 250 - 630): global SWM (FL 100- 250): NAT	~~SWH: (FL 250 - 630) A, B1, F, H, J, I and M~~ ~~SWM/SWH (FL100 - 450): NAT~~	global

Note. — WAFCs continue to issue forecasts of SIGWX in PNG chart form until 30 November 2006. for back-up purposes for fixed areas of coverage as specified in Annex 3

Editorial Note.— Delete FASID Charts MET 4, 5 and 6.

APPENDIX B-1

FASID TABLE MET 7
AUTHORIZED USERS OF THE SADIS SATELLITE BROADCAST AND THE INTERNET-BASED WAFS FTP SERVICE IN THE AFI REGION

EXPLANATION OF THE TABLE

Column

1. Name of the State or territory.

2. User of the satellite broadcast. Abbreviations used:
CAA — civil aviation authority
NMS — national meteorological service
O — other than the civil aviation authority or the national meteorological service.

3. Location of VSAT: town and, where applicable, aerodrome to be indicated.

4. Indication whether the equipment is operational:
2w — two-way VSAT operational
1w — one-way VSAT operational
F — only Internet-based FTP service
[blank] — no.

[Satellite Distribution System for Information Relating to Air Navigation (SADIS) provided by the United Kingdom, United States			
State/Territory	User of satellite Broadcast	Location of VSAT	Equipment operational
1	2	3	4

Editorial Note.— The content of the FASID Table MET 7 is to be kept up-to-date by the PIRGs and regional offices concerned.

Appendix B-2

STATUS OF IMPLEMENTATION OF AFI FASID TABLE MET 7

(as of 30 September 2006)

Note. — Non-operational users are indicated in italics.
X = VSAT (SADIS 1G); or VSAT (SADIS 1G) and FTP service;
XX = VSAT(SADIS 2G); or VSAT (SADIS 2G) and FTP service;
F = FTP service only

ICAO Contracting State		*User*		*Location*	*Operational*
1	Benin	1	National Meteorological Service	Cotonou International Airport	X
2	Botswana	2	National Meteorological Service	Gaborone Airport	X
3	Burkina Faso	3	National Meteorological Service	Ouagadougou Airport	X
	Burundi		*National Meteorological Service*		
4	Cameroon	4	National Meteorological Service	Douala Airport	X
5	Central African Republic		National Meteorological Service	Bangui MPoko	XX
6	Chad	5	National Meteorological Service	N'Djamena Airport	XX
7	Congo	6	National Meteorological Service	Brazzaville Airport	X
8	Côte d'Ivoire	7	National Meteorological Service	Abidjan Airport	X
9	Democratic Republic of the Congo	8	National Meteorological Service	Kinshasa Airport	X
10	Equatorial Guinea	9	National Meteorological Service	Malabo Airport	X
	Eritrea		*National Meteorological Service*		
11	Ethiopia	10	National Meteorological Service	Addis Ababa Airport	X
12	Gabon	11	National Meteorological Service	Libreville Airport	X
13	Gambia	12	National Meteorological Service	Banjul Airport	X
14	Ghana	13	National Meteorological Service	Accra Airport	X
15	Guinea	14	National Meteorological Service	Conakry Airport	X
16	Kenya	15	National Meteorological Service	Nairobi Airport	X

ICAO Contracting State		*User*		*Location*	*Operational*
	Kenya	16	National Meteorological Service	Mombasa Airport	X
17	Madagascar	17	National Meteorological Service	Antananarivo/Ivato Airport	X
	Malawi		*National Meteorological Service*		
18	Mali		National Meteorological Service	Bamako	XX
19	Mauritania		National Meteorological Service	Nouakchott Airport	XX
20	Mozambique	18	National Meteorological Service	Maputo	X
21	Niger	19	National Meteorological Service	Niamey Airport	X
	Niger	20	National Meteorological Service	EAMAC Training School	X
22	Nigeria	21	National Meteorological Service	Lagos Muhammed Airport	X
23	Rwanda	22	National Meteorological Service	Kigali	X
	Sao Tome and Principe		*Instituto Nacional de Meteorologia*		
24	Senegal	23	National Meteorological Service	Dakar Airport	X
	Senegal	24	ASECNA	Headquarters, Dakar	X
	Sierra Leone		*National Meteorological Service*		
	South Africa	25	Weather Bureau	Pretoria	X
25	South Africa	26	Netsys	Pretoria	X
26	Swaziland	27	National Meteorological Service	Mbabane	X
27	Togo	28	National Meteorological Service -	ASECNA Lomé	X
28	Uganda	29	National Meteorological Service	Entebbe Airport	X
29	United Republic of Tanzania	30	National Meteorological Service	Dar Es Salaam	X
30	Zambia	31	National Meteorological Service	Lusaka	X
31	Zimbabwe	32	National Meteorological Service	Harare International Airport	X

Appendix C-1

SADIS STRATEGIC ASSESSMENT TABLES: CURRENT AND PROJECTED DATA VOLUMES 2007-2011.

SUMMARY

Note. – 1 octet = 1 byte = 1 character

Table 1. OPMET data volumes per day (in K bytes)

Region	*Current 2007*	*Projected 2008*	*Projected 2009*	*Projected 2010*	*Projected 2011*
AFI	**685**	**693**	**704**	**715**	**726**

Table 2. BUFR data volumes per day (in K bytes)

Region	*Current 2007*	*Projected 2008*	*Projected 2009*	*Projected 2010*	*Projected 2011*
AFI	**0**	**40**	**40**	**40**	**40**

Table 3. AIS data volumes per day (in K bytes)

Region	*Current 2007*	*Projected 2008*	*Projected 2009*	*Projected 2010*	*Projected 2011*
AFI	**0**	**20**	**20**	**20**	**20**

Appendix C-2

SADIS STRATEGIC ASSESSMENT TABLES CURRENT AND PROJECTED DATA VOLUMES 2007-2011

Note.— 1 octet = 1 byte = 1 character.

Table 1. AFI— OPMET data volumes

OPMET data	*Current 2007*	*Projected 2008*	*Projected 2009*	*Projected 2010*	*Projected 2011*
ALPHANUMERIC DATA					
Number of **FC bulletins** issued per day	138	145	150	155	160
Number of **FT bulletins** issued per day	294	300	310	320	330
Number of **SA bulletins** issued per day	1693	1700	1720	1740	1760
Number of **SP bulletins** issued per day	6	10	10	10	10
Number of **SIGMET bulletins** issued per day	10	10	10	10	10
BINARY DATA					
Number of other bulletins issued per day	0	0	0	0	0
TOTALS					
Total number of OPMET bulletins per day	2141	2165	2200	2235	2270
Average size of OPMET bulletin (bytes)	320	320	320	320	320
Total estimated OPMET data volume per day (in K bytes)	**685**	**693**	**704**	**715**	**726**

Note.— No provision is being made for the distribution of BUFR-coded OPMET data. Capacity for this data may need to be included depending on the issuance of this data in the region.

APPENDIC C-3

Table 2. AFI — BUFR data volumes

Graphical information in the BUFR code form	*Current 2007*	*Projected 2008*	*Projected 2009*	*Projected 2010*	*Projected 2011*
TOTALS Total number of BUFR messages per day	0	2	2	2	2
Average size of messages (bytes)	0	20000	20000	20000	20000
Total estimated volume of BUFR messages per day (in K bytes)	**0**	**40**	**40**	**40**	**40**

Note.— Provision is made for the distribution of BUFR-encoded VAG starting from the year 2007.

Table 3. AFI — AIS data volumes

AIS data	*Current 2007*	*Projected 2008*	*Projected 2009*	*Projected 2010*	*Projected 2011*
ALPHANUMERIC AIS DATA (NOTAM related to volcanic ash, ASHTAM) Number of ASHTAM bulletins issued per day	0	2	2	2	2
Number of NOTAM bulletins issued per day	0	2	2	2	2
TOTALS Total number of AIS bulletins per day	0	4	4	4	4
Average size of AIS bulletin (byte)	0	5000	5000	5000	5000
Total estimated volume of AIS data per day (in K bytes)	**0**	**20**	**20**	**20**	**20**

*Note. P*rovision is made for the distribution of ASHTAM and NOTAM related to volcanic ash.

Appendix D-1

AFI OPMET Management Task Force Terms of Reference

1. Terms of Reference

- Review the OPMET exchange scheme in the AFI Region and develop proposals for their optimization taking into account the requirements by the aviation users and the current trends for global OPMET exchange;

- Develop monitoring and management procedures related to AMBEX exchange and other exchange of OPMET information;

- Regularly update the regional guidance material related to OPMET exchange;

- Liaise with other groups dealing with communication and/or management aspects of the OPMET exchange in AFI and other ICAO Regions (ASIA/PAC OPMET/M TF, BMG EUR Region, CNS/MET SG MID Region, etc.).

2. **Word Programme**

The work to be addressed by the AFI OPMET Management Task Force includes:

a) to examine the existing and any new requirements for OPMET exchange in AFI and adjacent regions and assess the feasibility of satisfying these requirements, taking into account the availability of the data;

b) to keep under review the AMBEX scheme and other OPMET exchange schemes and prepare proposal for updating the optimizing of the schemes;

c) to review and update the procedures for interregional OPMET exchange and ensure the availability of the required AFI OPMET data for the AFS satellite broadcast (SADIS);

d) to keep under review and provide timely amendments of the regional guidance materials on the OPMET exchange; to ensure that guidance material covers procedures for the exchange of all required OPMET data types: SA, SP, FC, FT, WS, WC, WV, FK, FV, UA;

e) to conduct trials and develop procedures for monitoring and management of the OPMET exchange; to foster implementation of quality management of OPMET data by the AMBEX centres and the RODBs;

Appendix D-2

f) to prepare regional plan for the transition to BUFR coded OPMET information in coordination with the relevant APRIG contributing bodies.

3. **Composition**

(a) The Task Force is composed of experts from:

Algeria, Cameroon, Congo, Ethiopia, Egypt, Kenya, France, Madagascar, Morocco, Niger, Nigeria, Senegal, (Rapporteur) South Africa, UK and ASECNA.

(b) Representatives of IATA and WMO are invited to participate in the work of the Task Force.

Appendix E-1

AMBEX HANDBOOK

REGIONAL OPMET DATA BANKS (RODBs)

The AFI Regional OPMET Data Banks (RODBs) and the AFTN address to be used for direct access to the banks are shown below:

RODB	**AFTN Address**	**AMBEX Centres of Responsibility**
Dakar	GOOYYZYX	Alger/DAMM, Brazzaville/FCBB Casablanca/GMMC, Dakar/GOOO Niamey/DRNN
Pretoria	FAPRYMYX	Addis Ababa/HAAB, Antananarivo/FMMI, Cairo/HECA Johannesburg (FAPR)** , Nairobi/HKNA ** TCC located at South African Weather Service HQ.

Responsibilities:

1. Collect OPMET bulletins from AMBEX centres in the area of responsibility and store them in the data base.

2. Handle all types of OPMET bulletins.

3. Provide facilities for “request-reply” service to authorized users.

4. Maintain a catalogue of bulletins and introduce changes to the bulletins when necessary according to established procedures.

5. Quality control the incoming bulletings and inform AMBEX centres on any deficiencies.

6. Monitor the OPMET traffic by carrying on regular test on the availability and timeliness of the bulletins; report to the ICAO Regional Office on the results.

Appendix E-2

AMBEX HANDBOOK

EXCHANGE OF SIGMET AND ADVISORIES

1.1 SIGMET should be prepared by the meteorological watch offices (MWO) designated by the State's meteorological authority. The MWOs and their areas of responsibility are given in the FASID Table MET 1B of AFI ANP.

1.2 SIGMET should be distributed to the two RODBs, either directly or through the responsible AMBEX centre. The RODBs should make SIGMET messages available on request. In order to facilitate that, the originating MWOs, should use fixed WMO headings for their SIGMET bulletins as given in Appendix … (Attachment).

1.3 SIGMET messages should be distributed to other ICAO regions and made available for uplink through SADIS. This distribution should be carried out through the relevant Inter-regional OPMET Gateways (IROGs).

1.4 Detailed information on the format of the SIGMET messages is provided in the AFI Regional SIGMET Guide, Seventh edition, 2004 (under revision).

1.5 Tropical Cyclone Advisories (TCAs) and volcanic ash advisories (VAAs) should be issued by the designated tropical cyclone and volcanic ash advisory centres (TCAC and VAAC), as indicated in the FASID Table MET 3A and MET 3B.

1.6 The TCACs and VAACs should send the advisories to the RODBs. The RODBs should make TCAs and VAAs messages available as appropriate or on request. In order to facilitate that, the originating TCACs and VAACs should use fixed WMO headings for their TCA and VAA bulletins as given in Appendix …

1.7 VAA and TCA messages should be distributed to other ICAO regions and made available for uplink through SADIS. This distribution should be carried out either directly by the VAACs and TCACs or through the relevant Inter-regional OPMET Gateway (IROG) such Toulouse, France.

Appendix E-3

WMO HEADINGS FOR SIGMET BULLETINS USED BY AFI METEOROLOGICAL WATCH OFFICES (MWOs)

EXPLANATION OF THE TABLE

Col 1: State and name of the MWO

Col 2: ICAO location indicator of the MWO

Col 3: $T_1T_2A_1A_2$ii group of the WMO heading for the WS SIGMET bulletin

Col 4: $T_1T_2A_1A_2$ii group of the WMO heading for the WC SIGMET bulletin (tropical cyclone)

Col 5: $T_1T_2A_1A_2$ii group of the WMO heading for the WV SIGMET bulletin (volcanic ash)

Col 6: ICAO location indicator of the FIR/CTA served by the MWO

Col 7: Remarks

Appendix E-3(a)

WMO Headings for SIGMET Bulletins used by AFI Meteorological Watch Offices

MWO Location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
ALGERIA ALGER/Baraki	DAAL	WSAL31		WVAL31	DAAA	
ANGOLA LUANDA/4 de Fevereiro	FNLU	WSAN31		WVAN31	FNAN	
BOTSWANA GABORONE/Sir Seretse Khama	FBSK	WSBC31	WCBC31	WVBC31	FBGR	
BURUNDI BUJUMBURA/Bujumbura	HBBA	WSBI31		WVB131	HBBA	
CANARY ISLANDS (Spain) GRAN CANARIA/Gran Canary, Canary I	GCLP	WSCR31		WVCR31	GCCC	
CAPE VERDE SAL I/Amilcar Cabral	GVAC	WSCV31		WVCV31	GVSC	
CHAD N'DJAMENA/N'djamena	FTTJ	WSCD31		WVCD31	FTTT	
CONGO BRAZZAVILLE/Maya-Maya	FCBB	WSCG31	WCGG31	WVCG31	FCCC	
D.R. CONGO KINSHASA/N'Djili	FZAA	WSZR31	WCZR31	WVZR31	FZAA	
EGYPT CAIRO/Cairo International	HECA	WSEG31	WCEG31	WVEG31	HECC	
ETHIOPIA ADDIS ABABA/Bole Intl	HAAB	WSET31		WVET20	HAAA	
ERITREA ASMARA	HHAS	WSEI31		WVEI31	HHAA	
GHANA ACCRA/Kotoka Int'l	DGAA	WSGH31		WVGH31	DGAC	

MWO Location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
KENYA KENYA/Jomo Kenyatta Int'l	HKJK	WSKN31	WCKN31	WVKN31	HKNA	

MWO Location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
LIBERIA MONROVIA/Roberts Int'l	GLRB	WSLI31		WVSL31	GLRB	
LIBYAN ARAB JAMAHIRIYA TRIPOLI/Tripoli Int'l	HLLT	WSLY31		WVLY31	HLLL	

MWO Location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
MADAGASCAR ANTANANARIVO/Ivato	FMMI	WSMG31	WCMG20	WVMG20	FMMM	
MALAWI LILONGWE/Lilongwe Int'l	FWLI	WSMW31	WCMG31	WVLI31	FWLL	
MAURITIUS MAURITIUS/Sir Seewoosagur Ramgoolam Int'l	FIMP	WSMA31	WCMG20	WVMA31	FIMM	
MOROCCO CASABLANCA/Anfa	GMMC	WSMC31		WVMC31	GMMM	
MOZAMBIQUE MAPUTO/Maputo Int'l	FQMA	WSMZ31	WCMZ20	WVMZ31	FQBE	
NAMIBIA WINDHOEK/Hosea Kutako	FYWH	WSNM31		WVNM31	FYWH	
NIGER NIAMEY/Diori Hmani Int'l	DRRN	WSNR31		WVNR31	DRRR	
NIGERIA KANO/Mallam Aminu Kano Int'l	DNKN	WSNI31		WVNI31	DNKK	
RWANDA KIGALI/Gregoire Kayibanda	HRYR	WSRW31		WVRW31	HRYR	
SENEGAL Leopold Sedar Senghor	GOOY	WSSG31		WVSG31	GOOO	
SEYCHELLES MAYE/Seychelles Int'l	FSIA	WSSC31	WCSC20	WVSC31	FSSS	
SOMALIA MOGADISHU/Mogadishu	HCMM	WSSI31		WVSI31	HCSM	

MWO Location	ICAO location indicator	WMO SIGMET Headings	FIR/ACC served	Remarks

		WS	**WC**	**WV**	**ICAO location indicator**	
1	**2**	**3**	**4**	**5**	**6**	**7**
SOUTH AFRICA JOHANNESBURG/Johannesburg	FAJS	WSZA31	WCZA31	WVZA31	FACA FAJA FAJO	
SUDAN KHARTOUM/Khartoum	HSSS	WSSU31		WVSU31	HSSS	
TUNISIA TUNIS/Carthage	DTTA	WSTS31		WVTS31	DTTC	
UGANDA ENTEBBE/Entebbe Int'l	HUEN	WSUG31		WVUG31	HUEC	
UNITED REPUBLIC OF TANZANIA DAR-ES-SALAAM/Dar-es-Salaam	HTDA	WSTN31	WCTN31	WVTN31	HTDC	
ZAMBIA LUSAKA/Lusaka Int'l	FLLS	WSZB31		WVZB31	FLFI	
ZIMBABWE HARARE/Harare	FVHA	WSZW31	WCZW31	WVZW31	FVHA	

Appendix F-1

AFI SIGMET TEST PROCEDURES

1. Introduction

1.1 The MET Divisional Meeting (2002) formulated recommendation 1/12, *Implementation of SIGMET requirements,* which call, *inter alia,* for the relevant planning and implementation regional groups (PIRGs) to conduct periodic tests of the issuance and reception of SIGMET messages, especially those for volcanic ash.

1.2 Concerns by the users for the timely reception of SIGMET information has prompted the need to improve awareness on the critical and important nature of SIGMETs. In order to maintain the International Airways Volcano Watch (IAVW) and TC watch systems ready-for-action, regular exercises involving the advisory centres and the MWOs under their areas of responsibility should be performed.

2. Purpose and Scope

2.1 The purpose of the tests is to check the awareness of the participating MWOs of the ICAO requirements for the issuance of VA and TC SIGMET, and the adequacy of the existing telecommunication procedures for dissemination of the advisories and SIGMETs. Based on the results of the tests, the States will be provided with advice aimed at improving their practices and procedures.

2.2 The tests will involve issuance of test advisories by the VAACs and TCACs in the region, which will be disseminated to the corresponding MWOs and the Regional OPMET Data Banks (RODBs). The MWOs will have to issue a test SIGMET on receipt of a test advisory from the responsible VAAC or TCAC, and disseminate it according to the distribution list used for normal (non-test) SIGMETs.

2.3 The RODBs will record the reception of the test SIGMETs and the corresponding time and will provide a summary table to the VAAC or TCAC with a copy to the Regional Office.

2.4 A consolidated summary report will be prepared by the ICAO Secretariat and reported to the MET/SG and APIRG. The report will include recommendations for improvement of the SIGMET exchange and availability.

3. SIGMET test procedures

3.1 Participating units:

3.1.1 Tropical Cyclone Advisory Centre (TCAC

La Réunion

3.1.2 Volcanic Ash Advisory Centre (VAAC)

Toulouse

3.1.3 Regional OPMET Data Bank (RODB)

Dakar
Pretoria

3.1.4 Meteorological Watch Office (MWO)

All MWOs listed in FASID Table MET 3A and MET 3B of the AFI FASID, under the responsibility of Toulouse, VAAC and La Réunion, TCAC.

Note: The participation of MWOs of States, which do not belong to AFI region, should be coordinated through the relevant ICAO Regional Office.

3.2 **Test date and time**

3.2.1 ICAO Regional Office will set a date and time after consultation with the VAAC, TCAC and RODB. The information about the agreed date and time will be sent to all States concerned.

3.3 Test messages

3.3.1 Each VAAC and TCAC prepares a simple TEST message in the form of VA or TC advisory. The format of the TEST message should follow the standard formats given in Annex 3, however, with clear indication that it does not contain information for a real event.

3.3.2 The MWOs, upon receipt of the TEST VA/TC advisory, should prepare a TEST SIGMET for volcanic ash or tropical cyclone, respectively, and send it to the RODBs, VAAC and TCAC as appropriate. The WMO heading and the first line of the SIGMET should be valid ones, while the body of the message should contain an explanatory text on the tests. The AFTN addresses of the RODBs and the Inter-regional OPMET Gateway (IROG) to which the test SIGMETs should be sent are as follows:

Dakar	:	GOOYZYX
Pretoria	:	FAPRYMYX
Toulouse	:	LFZZMAFI

3.3. The format of Test messages for VA advisory and VA SIGMET, and for TC advisory and TC SIGMET are at the **Attachment A**.

3.3.4 To avoid over-writing of a valid SIGMET, the test SIGMET on VA should not be sent if there is a valid SIGMET on VA for responsible area of the WMO. In the same manner, the test SIGMET on TC should not be sent if there is a valid SIGMET on TC.

3.4 Processing of the test messages and results

3.4.1 The RODBs will be requested to file all incoming TEST advisories and SIGMETs and perform an analysis of the availability, timeliness of arrival and the correctness of the headers. A table, as shown in **Attachment B**, should be prepared by each RODB and sent to the VAAC or TCAC with a copy to the Regional Office.

Appendix F-3

3.4.2 ICAO Secretariat should prepare the final report of the test and present it to the next MET/SG meeting.

Attachment:

A. Format of the Test messages
B. Sample Table to be used by RODBs

APPENDIX F-4

Format of the test messages

1. Format of test SIGMET for Volcanic Ash

WVJP31 RJAA 010210
RJTG SIGMET 1 VALID 010210/O10310 RJAA – THIS IS A TEST SIGMET, PLEASE DISREGARD, TEST advisory No. xx received at YYGGggZ=

2. Format of test SIGMET for Tropical Cyclone

WCJP31 RJAA 010210
RJTG SIGMET 5 VALID 010210/010310 RJAA- THIS IS A TEST SIGMET, PLEASE DISREGARD, TEST advisory No. xx received at YYGGggZ=

Note: Actual SIGMET number to be used.

3. AFI Volcanic ash test procedure

Format of the test VAA

a) The format for the TEST VAA that will be provided by the Toulouse VAAC can be seen below. DD is the day of the month, *HH* the hour of issuance.

FVAF01 LFPW ***DDHH****00*
VOLCANIC ASH ADVISORY
ISSUED: 200506***DD/HH***00Z
VAAC: TOULOUSE
VOLCANO: FICTITIOUS
LOCATION: NIL
AREA : NIL
SUMMIT ELEVATION : NIL
ADVISORY NUMBER : 2005/01
INFORMATION SOURCE: NIL
AVIATION COLOUR CODE: NIL
ERUPTION DETAILS : NIL
OBS ASH DATE/TIME : NIL
OBS ASH CL: NIL
FCST ASH CL+6H:NIL
FCST ASH CL+12H:NIL
FCST ASH CL+18H:NIL
NEXT ADVISORY: NO FURTHER ADVISORIES

REMARKS:

THIS IS A VAA TEST MESSAGE APPLICABLE TO THE WHOLE OF ICAO AFI REGION. EACH METEOROLOGICAL WATCH OFFICE, AREA CONTROL CENTRE AND FLIGHT INFORMATION CENTRE SERVING FLIGHT INFORMATION REGIONS WITHIN THE AFI REGION RECEIVING THIS MESSAGE SHOULD ISSUE AN

ADMINISTATIVE MESSAGE USING THE WMO HEADER NOAF33 LFPW AND SEND IT TO THE AFTN ADDRESS LFZZMAFI TO ACKNOWLEDGE THE RECEPTION OF THIS VAA MESSAGE.

b) Format of the administrative message to acknowledge the reception

i) The meteorological watch offices, area control centres and flight information centres serving flight information regions that will receive the VAA will issue an administrative message to acknowledge the reception of the VAA. The format of this message is provided below. ***DD*** is the day of the month.

ii) The message described below has to be sent by AFTN to the IROG Toulouse Address by usisng its AFTN address LFZZMAFI.

iii) ***aftn_address***, in the first line after the WMO heading, should be replaced by the AFTN address of the recipient.

iv) ***description***, in the first line after the WMO heading, should be replaced by the name of the organization which has received the VAA.

v) ***HHMMmm*** is the reception hour of the VAA bulletin, if the VAA has been received.

NOAF33 LFPW DD1300
From: ***aftn_address, description***
To: LFZZMAFI

ACK RECEPTION TEST VAA FROM VAAC TOULOUSE AT ***HHMMmm=***

Appendix F-6

SAMPLE TABLE TO BE USED BY REGIONAL OPMET DATA BANKS (RODBS) FOR ANALYSIS OF RESULTS

i). AFI SIGMET TEST Summary (Reception time at RODBs)

Name of RODB : Dakar and Pretoria

Date of test : …… YYGGgg ……...

ii) VAA Header Received time (UTC)

TTAAii CCCC YYGGgg Dakar Pretoria

iii) TCA **Header** **Received time (UTC)**
TTAAii CCCC YYGGgg Dakar or Pretoria

SIGMET Header Received time (UTC)

TTAA ii CCCC YYGGgg Dakar or Pretori**a**

Appendix G-1

DRAFT REGIONAL PROVISIONS IN THE ANP/FASID
BASIC ANP

World area forecast system (WAFS)
(FASID Tables MET 5, MET 6 and MET 7)

1 FASID Table MET 5 sets out requirements for WAFS forecasts to be provided by WAFC [WAFSOPSG Conclusion 1/2]

2. FASID Table MET 6 sets out the responsibilities of WAFCs London and Washington for the production of WAFS forecasts. For back-up purposes, each WAFC should have the capability to produce WAFS forecasts for all the required areas of coverage. [WAFSOPSG Conclusion 1/2]

3. WAFS products should be disseminated by WAFC [London, Washington] using the [satellite distribution system for information relating to air navigation (SADIS), international satellite communications system (ISCS1, ISCS2)] covering the reception area shown in FASID Chart CNS [4]. [WAFSOPSG Conclusion 2/2]

4. Each State should make the necessary arrangements to receive and make full operational use of WAFS products disseminated by WAFC ŧsatellite broadcast in the ŧlocation of the operational VSATs. [WAFSOPSG Conclusion 1/2]. WAFSOPSG/3-WP/3

Appendix G-2

FASID

World area forecast system (WAFS)
(FASID Tables MET 5, MET 6 and MET 7

1. FASID Table MET 5 sets out the Region~~[s]~~ requirements for WAFS forecasts, to be provided by WAFC

2. FASID Table MET 6 sets out the responsibilities of WAFCs London and Washington for the production of WAFS forecasts.

3. FASID Table MET 7 lists the authorized users of the SADIS satellite broadcast in the AFI Region and location of the operational VSATs. The table is included in the FASID for information purposes and kept up-to-date by the Regional Offices concerned.

Appendix H-1

Terms of Reference
of the Meteorology Sub-Group (MET/SG)

1. Terms of Reference

a. To keep under review, the adequacy of meteorological facilities and services to meet new technological developments in the air navigation field and make proposals as appropriate for implementation by States to APIRG.

b. To identify, State by State, those specific deficiencies and shortcomings that constitute major obstacle to the provision of efficient and reliable meteorological facilities and services to meet the requirements of air navigation in the AFI Region and recommend specific measures to eliminate them.

Appendix H-2

2. Future Work Programme for 2007 – 2012

Global Plan Initiatives

	Task	Source	Recent Progress Next milestone and its deadline	Final Result (completion)
1	~~Establish and~~ Maintain detailed lists, State by State of the specific deficiencies of facilities for the provision of atmospheric measurements pertaining to surface wind, pressure, visibility/runway visual range, cloud base, temperature and dew point temperature considered critical for flight safety.	APIRG/13 Con. 13/96	• State by state MET deficiencies have been established and included in APIRG/15 Report • Surveys are in progress to update the deficiencies	Deficiencies on MET parameters measurements established and compiled
2	Monitor the exchange of OPMET information through the AMBEX scheme in the AFI Region and between the AFI and ASIA/PACIFIC and EUR Regions	APIRG/8 Con. 8/43 c)	• Continuing task • Next monitoring April 2008	Exchange of OPMET information through AMBEX and SADIS, improved
3	Plan for the introduction of efficient inter-regional OPMET exchanges in coordination with the COM Sub-group as required *Note: See MET/SG/8 Decision 8/16 establishing AFI Management Task Force to be engaged in this activity.*	AFI/7	The AFI OPMET/M Task force has been established to undertake this task	Efficient inter-regional OPMET exchanges
4	Monitor the degree of implementation of very small aperture terminals (VSATs) for the reception of WAFS products	AFI/7 Rec. 14/12	• A large number of AFI States have implemented SADIS 1G VSATs • Implementation of SADIS 2G and SADIS FTP is in progress	Information on the implementation of SADIS VSAT and FTP established and compiled
5	~~Monitor the quality of WAFS high and low level significant weather charts in the AFI Region, provide feed back to WAFC, London as appropriate~~	APIRG/12 Con. 12/34	• Task completed at the end of the migration plan toward the deletion of RAFCs (2002).	Improvement of the quality of WAFS high and medium level significant weather charts in the AFI Region
6	Monitor the implementation of regional procedures for the issuance of volcanic ash and tropical cyclone advisories and SIGMETs.	AFI/7 Rec. 7/3 and 7/4	•Continuing task •Survey is in progress	Improvement of the implementation of regional procedures for the issuance of volcanic ash and tropical cyclone advisories and

	Task	Source	Recent Progress Next milestone and its deadline	Final Result (completion)
				SIGMET.
7	~~Review on a continuing basis the contents of Tables MET 1A and 1B and Tables MET 2A and MET 2B to ensure their validity in light of operational requirements and develop proposals to update them if necessary.~~ See MET/SG/8 Conclusions 8/17 and 8/18	AFI/7	•FASID Table MET 1A has been updated and will be maintained •FASID Table MET 2B will be deleted	Improvement of OPMET exchange
8	Review the meteorological procedures in the introductory text to Part VI B Meteorology of the Basic AFI Regional Plan/FASID, as well as Meteorological related issues in other sections of the Plan and relevant regional supplementary Meteorology procedures (SUPPs) in the Doc 7030, in the light of procedures employed in other regions and develop amendment proposals as appropriate, coordinating where necessary with other APIRG Sub-Groups.	APIRG/12	•Amendments made since APIRG/15 in the plan Continuing task	Maintain up to date procedures to improve safety and efficiency of air navigation.
9	~~Monitor developments in the CNS/ATM Systems with regard to meteorological requirements in the AFI Region and in coordination with AFI ATM Sub-Group~~.	APIRG/14 Con. 14/43	•Disolution of the Task Force on CNS/ATM and transferred to ATM Sub-Group	Task transferred to ATM Sub-Group need to keep track on developments and provide inputs as required.
10	Develop guidelines for the use of GRIB and BUFR codes in the AFI Region.	APIRG/15 Con. 15/81	•Recent task	guidelines for the use of GRIB and BUFR codes Developed in the AFI Region.
11	Monitor the implementation in the AFI region of quality management system for the MET field.	APIRG/14 Con. 14/40	•Recent task •Two seminars in Dakar (French) and Nairobi (English)	AFI region quality management system for the MET field is implemented
12	Monitor training and qualification of aeronautical MET personnel	APIRG/15 Dec. 15/94	•Recent task •Survey in progress	Improvement of the qualifications of aeronautical MET personnel and information on training and qualification of aeronautical MET personnel established and compiled
12	Information related to the type of the VSAT station to be included in the FASID Table MET 7 of the AFI plan and maintained.	MET/SG/8 Dec. 8/3	•Inclusion to be completed before July 2008 •Continuing maintenance	FASID Table MET 7 completed and maintained

	Task	Source	Recent Progress Next milestone and its deadline	Final Result (completion)
13	Replace the existing regional procedures of the AFI ANP/FASID (Doc 7474) by the new Regional Meteorological Procedures as per MET/SG/8 Conclusion 8/15.	MET/SG/8 Con. 8/15	• Replacement to be completed before July 2008	the AFI ANP/FASID (Doc 7474) improved
14	Implementation of the 30-hours TAF in the AFI Region	MET/SG/8 Dec. 8/16	• Recommendation should be available to the Secretariat by 30 September 2007.	30-hours TAF implemented in the AFI region

3. **Composition**

Algeria, Burkina Faso, Cameroon, Congo, Côte d=Ivoire, Egypt, Eritrea, Ethiopia, France, Gabon, The Gambia, Ghana, Guinea, Kenya, Madagascar, Malawi, Morocco, Niger, Nigeria, Senegal, South Africa, Spain, Tunisia, United Kingdom, United Republic of Tanzania, Zambia, ASECNA, IATA, IFALPA and WMO.