



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP  
NINETEENTH MEETING (APIRG/19)  
(Dakar, Senegal, 28 to 31 October 2013)**

**Agenda Item 3.6: Aeronautical Meteorology (MET)**

**REVIEW OF THE REPORT OF THE ELEVENTH  
MEETING OF THE METEOROLOGY SUB-GROUP (MET/SG/11)**

*(Presented by Secretariat)*

**SUMMARY**

This paper presents the report of the Eleventh Meeting of the MET/SG. The Sub-Group reviewed action taken on various conclusions and decisions of the APIRG in the MET area. The meeting also discussed matters relating to the World Area Forecast System (WAFS), International Airways Volcano Watch (IAVW) and tropical cyclone programme in the AFI Region, the recommendations of the AFI OPMET Management Task Force Fourth and Fifth Meetings (MTF/4 and MTF/5), the list of deficiencies in the MET field, challenges facing AFI meteorological services, regional MET procedures and its future work programme.

Action by the APIRG/19 meeting is at **paragraph 3**.

**REFERENCE(S):**

- ✓ APIRG/18 Report
- ✓ MET/SG/11 Report
- ✓ WAFSOPSG/7 Report
- ✓ SADISOPSG/17 and 18 Reports
- ✓ AFI OPMET MTF/4 and MTF/5 Reports

**Related ICAO Strategic Objective(s): A and C**

**1. INTRODUCTION**

1.1 The Eleventh Meeting of the Meteorology Sub-Group (MET/SG/11) was held at the Nairobi Safari Club Hotel, Nairobi, Kenya, from 8 to 10 July 2013. The meeting was attended by seventeen (17) participants from ten (10) States and two (2) organizations.

## 2. DISCUSSION

### 2.1 Review of APIRG Conclusions and Decisions

2.1.1 The Sub-Group meeting made an in-depth review of draft Conclusions and Decisions formulated by previous MET/SG meetings and adopted by the APIRG. The meeting further reviewed and updated APIRG conclusions and decisions related to MET since APIRG/13 meeting as per APIRG/18 Decision 18/01. The Sub-Group noted actions taken and progress made so far on the implementation of the conclusions and decisions.

2.1.2 A number of previous APIRG conclusions and decisions related to MET already implemented, were deleted from the list and some removed from the list and transferred to the work programme or the AMBEX Handbook. The meeting therefore, formulated Decision 11/01 to submit the updated list of APIRG Decisions and Conclusions listed in **Appendix 3.6-A**.

### 2.2 WAFS, IAVW and Tropical Cyclone in the AFI Region

2.2.1 Under this agenda item, the Sub-Group reviewed the status of the implementation of the World Area Forecast System (WAFS), International Airways Volcano Watch (IAVW) and Tropical Cyclone programme in the AFI Region on the basis of the reports from the seventh meeting of WAFS Operations Group (WAFSOPSG/7), the eighteenth meeting of the Satellite Distribution System for information related to air navigation (SADIS) Operations Group (SADISOPSG/18) and the seventh meeting of the IAVW (IAVWOPSG/7). The Sub-Group was also presented with a management report on the TCAC La Reunion operational activities and was pleased to note the efforts being made by the centre to produce and disseminate tropical cyclone advisories in graphical format.

2.2.2 The Sub-Group noted that both WAFCs of London and Washington made available harmonized forecasts, in GRIB2 format, of cumulonimbus (CB) cloud, icing and turbulence and that currently, the data are made available via Secure SADIS FTP and WIFS. Regarding availability times of WAFS upper air forecasts in WMO GRIB Edition 1 and GRIB edition 2 code forms, the Sub group was pleased to note that, the WAFS Provider States were able to review the production and availability time of the WAFS GRIB1 data sets, essentially making the GRIB1 data sets available sooner than previously expected, but still delivering after WAFS GRIB2.

2.2.3 The Sub-Group was pleased to note that the WAFCs have produced a document titled Guidance on the Harmonized WAFS Grids for Cumulonimbus Cloud, Icing and Turbulence Forecasts - 11 September 2012, and that this document is available on the WAFSOPSG website: (<http://www.icao.int/safety/meteorology/WAFSOPSG/Pages/GuidanceMaterial.aspx>). The Sub-Group further noted that the WAFS Provider States had been invited to develop computer based (including voice over) initial training material for the WAFS gridded global forecasts for cumulonimbus cloud, icing and turbulence, and to make available on the WAFSOPSG website (WAFSOPSG Conclusion 7/13 refers). The availability of the training material will be notified by SADIS Administrative Message.

2.2.4 The MET/SG/11 meeting noted that the SADISOPSG/18 meeting had endorsed the extension of the provision of the satellite based service (SADIS 2G) until November 2019 (with a view to withdrawal thereafter – SADISOPSG Conclusion 18/16a), including a hardware refresh of the ground segment equipment to be undertaken late 2015/early 2016. This recommendation will be taken forward to the Conjoint ICAO Meteorological Divisional Meeting, tentatively planned for July 2014. The Sub-Group was pleased to further report that the SADISOPSG endorsed the increase of the Secure SADIS FTP bandwidth (between the SADIS Provider and the SADIS Provider's ISP) to 16Mbit/sec bursting to 24Mbit/sec (current bandwidth is 4Mbit/sec bursting to 8Mbits/sec) at no extra cost to the users and that this would be implemented by end August 2013.

2.5 The MET/SG noted that IAVWOPSG had agreed to develop an IAVW roadmap for the provision of information services in support of the aviation system block upgrade (ASBU) methodology taking advantage of a draft version of a concept of operations for the IAVW. To assist States during volcanic ash events and to support the implementation of Annex 3 provisions (Amendment 76 to become applicable on 14 November 2013), IAVWOPSG agreed to develop additional guidance material on the use of the volcano observatory notice for aviation (VONA) for inclusion in Doc 9766 *Handbook On The International Airways Volcano Watch* (IAVW).

2.2.6 The Sub-Group was pleased to note that Toulouse Volcanic Ash Advisory Centre (VAAC) serving the AFI region had made efforts to improve the modeling of volcanic pollutants and an establishment of a network of Light Detection and Ranging systems (LIDARs) on the French Metropolitan area in order to collect data on aerosols and volcanic ash, and the development of a 4-channel discrimination ash/water algorithm. The meeting further noted that between June 2011 and May 2013, the VAAC had issued 187 operational advisories in both text and graphical formats, and 11 VA advisory exercises were conducted between June 2011 and end of 2012. The meeting noted that plans for VAAC back-up were underway and that a back-up test was planned for 2013.

2.2.7 Regarding the operations of La Reunion Tropical Cyclone Advisory Centre (TAAC) serving the AFI region), the meeting noted that it was the first TCAC to produce and disseminate advisory advisories of cyclones in graphical form. The meeting was pleased to learn that La Reunion TCAC continually strives to improve the quality of its cyclone forecasts.

### **2.3 Review of the Recommendations of AFI OPMET Management Task Force Fourth and Fifth Meetings (MTF/4 and MTF/5)**

2.3.1 The AFI OPMET Management Task Force (AFI OPMET MTF or MTF) held its fourth meeting (MTF/4) in Pretoria, South Africa, from 9 to 10 September 2012 and its fifth meeting MTF/5 from 3 to 5 July 2013 in Nairobi, Kenya. The Sub-group was presented with the reports of the two meetings by the Secretariat of the MTF. In reviewing the list of recommendations, the Sub-group agreed that all MTF/4 and MTF/5 Decisions be regarded as the MTF's own decisions which would therefore need no further action from the MET/SG Meeting. In this regard, the MET/SG endorsed the MTF recommendations hence becoming two Draft Conclusions, one Draft Decision and six Decisions of the MET/SG meeting.

2.3.2 The Sub-group noted that some States were not implementing the AMBEX scheme appropriately. To address this issue, the MET/SG agreed that it was necessary to establish a list of OPMET Focal Points for the AFI region as well as adjacent Inter-Regional OPMET Gateways (IROGs). In this regard, the MET/SG noted that the Task Force formulated Decision 5/01 to establish OPMET focal points. The meeting further agreed that in order to increase the availability of required OPMET data in the AFI Regional OPMET Data Banks (RODBs) through a regular OPMET monitoring process as indicated in the AMBEX Handbook, a set of actions and measures should be developed. . In this regard, the Sub-group formulated the following draft conclusion:

**Draft Conclusion 19/xx: Procedure for AFI OPMET data monitoring**

**That,**

**a) Dakar and Pretoria RODBs:**

- 1) Conduct within their respective areas of responsibility, the monitoring of OPMET received from AFI Bulletin Compiling Centres (BCCs);**
- 2) Analyze the monitoring results and identify shortcomings and deficiencies;**
- 3) Develop and forward to the concerned BCCs on a quarterly basis, the monitoring results and the recommendations to be implemented;**

- 4) **Collaborate directly with the concerned States to assist removing the shortcomings which can be resolved quickly; and**
  - 5) **Issue on a semester basis, a report on the above four actions to be forwarded to ICAO Dakar and Nairobi regional Offices.**
- b) ICAO Dakar and Nairobi regional Offices:**
- 1) **distribute the reports through State Letters to AFI States with particular emphasis on the States concerned with the deficiencies; and**
  - 2) **Visit the concerned States during State missions to provide further advice and awareness.**

*Provision of tropical cyclone and volcanic ash Advisories for the AFI Region and of the corresponding SIGMET by Meteorological Watch Offices (MWOs) and Review of report on SIGMET Tests conducted in November 2012*

2.3.3 The Sub-group recalled that the MET Divisional Meeting (2002) formulated recommendation 1/12 b), “Implementation of SIGMET requirements”, which called, inter alia, for the relevant planning and implementation regional groups (PIRGs) to conduct periodic tests on the issuance and reception of SIGMET messages, especially those for volcanic ash.

2.3.4 In this regard, the meeting was informed through MTF/4 and MTF/5 reports that SIGMET Tests were conducted in November 2011 and 2012. The MET/SG meeting was further informed that in 2012, 22 MWOs (61%) in the AFI region, were still not issuing SIGMETs at the time of the tests. The MTF/5 meeting reported an increased level of participation by States in the tests and improvements relating to issuance, dissemination and formatting of SIGMETs. The MET/SG was informed that, in 2012, 37% of the MWOs had never issued SIGMET whereas the figure for 2011 was 51%, an improvement of 14%. The meeting noted this positive result could partly be attributed to the SIGMET training conducted in September 2012, just before the tests.

2.3.5 The MTF/5 reported that South Africa, following request from users, had proposed an amendment to the AFI Air Navigation Plan (Doc 7474) to enable willing States issue and distribute meteorological information (AIRMET, GAMET etc.) in support of low level flight operations in the AFI region. The MTF recalled that such information was not a requirement in the region as per the current AFI Air navigation plan. However, some States, including South Africa, have been issuing AIRMET information to users. The MTF meeting further recalled that initially MET information for low level flights were not a requirement in the AFI region due to the small number of flights below flight level 100 in the region. MTF/5 noted however, that this number had recently increased significantly in some States in the region. Therefore, the MTF formulated recommendation 5/03 on the implementation of meteorological information to support low level flight operations in the AFI Region. In reviewing the recommendation, the MET/SG agreed that it is not mature enough to warrant a draft Conclusion and consequently formed an Ad-hoc Group to investigate the issue and report back to the MET/SG on its 12th meeting. In this regard, the MET/SG formulated Decision 11/03 on the establishment of an ad-hoc group on the implementation of meteorological information for Low Level Flight.

*Review of regional guidance material on OPMET exchange – AFI Regional SIGMET Guide*

2.3.6 The meeting noted that the amended version of the AFI SIGMET Guide had been adopted through Decision 18/47 of the APIRG/18 meeting which also required inclusion of details on Table MET 3A and Table MET 3B. The MTF/4 meeting reported that in order to avoid the possible confusion on the use of the word “Standard”, it was of the view that the provisions in the guidance material be re-worded to exclude reference to the word “standard”. The MTF/4 therefore formulated Recommendation 4/04 to update the SIGMET Guide. As the required amendments were considered as editorials, the Sub-group agreed to adopt Decision 11/04 for the updating of AFI regional SIGMET Guide, and the Secretariat of the MET/SG was requested to publish the SIGMET Guide given in **Appendix 3.6.B** on the ICAO website before October 2013.

*Review of the current edition of the AFI meteorological bulletin exchange (AMBEX) Handbook*

2.3.7 The MET/SG was informed that reviews of OPMET bulletins, as monitored by the SADISOPSG, indicated that bulletins for AFI Region were not only different from those in the AFI routing tables but also from those monitored by IROG Toulouse. In this regard the Task Force was of the opinion that to improve the availability and exchange of OPMET data, monitoring should be done at different stages of the system (APIRG/18 Conclusion 18/45 refers). The Sub-Group therefore, formulated Decision 11/05 for the monitoring of OPMET bulletins in coordination with ROC Toulouse.

2.3.8 The MTF/4 reported that the monitoring activities by the two AFI OPMET Data monitoring centres revealed that in the AFI Region, the BCCs were not compiling bulletins as per AMBEX Handbook and further noted that this could be a contributing factor to the lack of AFI OPMET Bulletins in the region and other ICAO Regions. The MTF/5 also reported that some discrepancies exist in the content of the OPMET bulletins of the AMBEX scheme and the user needs expressed in the SADIS users Guide, as indicated below:

- Irregularities in the contents of bulletins transmitted by the National OPMET Centres (NOCs) to the BCCs;
- Non compilation by the BCC, of OPMET information received from NOCs (AOP and non AOP);
- Transmission of the individual bulletins from NOCs to RODBs, IROGs and to WAFCs; and
- Some required data are not included in the current AMBEX scheme.

2.3.9 The MTF/5 meeting further reported that the Core Team of Experts on AMBEX had provided a progress report for the process of updating the AMBEX Handbook which addressed the following main issues:

- change of the TAF filing time as indicated in appendix 10 (paragraph 2.1.2) Amendment 76 to Annex 3 to the Convention on International Civil Aviation;
- some improvements in the text and schema of the AMBEX Handbook to better clarify the scheme;
- describe the back-up procedures between the two RODBs;
- Possible change concerning the schema for some States belonging to another ICAO region; and
- Updating the AMBEX Handbook to include all required data as indicated in SADIS User Guide Annex 1 and AFI FASID Table MET 2A.

2.3.10 The MET/SG was of the opinion that important issues including urgent items, such as the amendment 76 to Annex 3 applicable from 15 November 2013, together with related MTF, MET/SG and APIRG Decisions and Conclusions, should be addressed in the updating of the AMBEX Handbook before APIRG/19 meeting.

2.3.11 The Sub-group was informed that Recommendation 6/11 of the 12th Air Navigation Conference (AN-Conf/12) called for Regional Air Navigation Plans (ANPs) to be aligned with those of respective Regional Supplementary Procedures. In this respect therefore, the current requirements for air navigation services and facilities of flight information regions (FIRs) Alger, Casablanca, Tunis and Canarias currently in the AFI ANP (Doc 7474) were proposed to be transferred to the European (EUR) ANP (Doc 7754), and FIRs Cairo, Khartoum and Tripoli to Middle East (MID) ANP (Doc. 9708).

2.3.12 In considering these issues, the MET/SG meeting agreed to add the above mentioned tasks to those of the Core team on AMBEX Handbook. In this regard, the meeting formulated Decision 11/06 calling for the AMBEX Handbook given in **Appendix 3.6.C** to be expeditiously finalized by the Core Team on the AMBEX Scheme taking into account the information in paragraphs 2.3.8 to 2.34.11 above, and distributed to AFI States by the Secretariat of the MET/SG as the AMBEX Handbook Amendment 3.

#### *AFI RODBs Implementation Status Report*

2.3.13 The MET/SG was pleased to learn that the implementation status reports of Dakar and Pretoria RODBs indicated that many actions had been taken to improve on the implementation of the AMBEX scheme in accordance with Decisions, and Conclusions of MTF, MET/SG and APIRG meetings. However, to standardize the structure of future such reports, the MTF/5 agreed to develop a template through its Decision 5/04.

#### *Finalization of the AFI OPMET Data Catalogue*

2.3.14 The MTF/5 meeting recalled that Conclusion 18/46 of APIRG/18 Meeting had called for the OPMET data catalogue to be expeditiously finalized and implemented by States in the AFI Region. The MTF/5 further recalled that Conclusion 17/59 of APIRG/17 meeting called for the implementation of the interface control document (ICD) for AFI OPMET database access procedures. The MTF/5 then reviewed the updated data catalogue given in **Appendix 3.6-D** to this paper, as proposed by the RODB Managers, and formulated the recommendation 5/05. The Sub-group concurred with the proposal and formulated Decision 11/07 calling for the MET/SG Secretariat to distribute to AFI States and to publish on the AFI website, the amended AFI Interface Control Document (ICD).

#### *Report of the Core team of Experts on RODB back up procedures*

2.3.15 The MTF/4 reported that recommendations 2/7 and 2/9 of the MTF/2 meeting, called for the establishment of a Core Team of experts to develop backup procedures for the two AFI RODBs (Dakar and Pretoria). The MTF/5 meeting further reported that the Core team had presented a set of procedures during MTF/4 meeting but it was however noted there was a need for further investigation. The meeting therefore formulated the Decision 4/13 to encourage the Core Team to improve on the backup procedures so far developed using existing backup procedures especially those from London and Washington WAFCs. In this regard, the Core Team agreed that the backup of the two AFI RODBs could be achieved by implementing measures as follows:

- a) Dakar and Pretoria RODBs implement and maintain an identical OPMET bulletins catalogue;
- b) Dakar and Pretoria RODBs implement the AFI Interface Control Document (ICD);
- c) The bulletin compiling centres (BCCs) disseminate OPMET data to both Dakar and Pretoria RODBs using appropriate AFTN addresses;
- d) Dakar and Pretoria RODBs conduct monitoring activities in order to ensure that the databanks contain required OPMET data at all times; and
- e) The MTF to include AFTN addresses of both RODBs in the AFI ICD.

2.3.16 The MTF/5 meeting had noted that the backup procedure between WAFCs could not be adopted by the two AFI RODBs as the methods; infrastructure and validation criteria used were different. The meeting further noted that the current backup practice between Brussels, Vienna and Toulouse was simple and required less resources. The MTF/5 meeting therefore agreed that the same could be adopted and implemented by both AFI RODBs. However, for such a practice to work in the AFI Region, the meeting noted that the measures listed above need to be first implemented, and therefore, formulated Recommendation 5/06. In this regard, the Sub-group formulated the following draft decision:

**Draft Decision 19/xx: Implementation of AFI RODB Back up Procedures**

**That,**

- a) **Dakar and Pretoria RODBs implement**
  - 1) **and maintain an identical OPMET bulletins catalogue;**
  - 2) **the AFI Interface Control Document (ICD);**
  - 3) **the same data validation criteria**
  - 4) **and conduct monitoring activities in order to ensure that the databanks contain required OPMET data at all times;**
- b) **The bulletin compiling centres (BCCs) disseminate OPMET data to both Dakar and Pretoria RODBs using appropriate AFTN addresses; and**
- e) **The MTF include AFTN addresses of both RODBs in the AFI ICD.**

*Review of OPMET Related FASID Tables*

2.3.17 The MTF/5 reported that the SADISOPSG/18 meeting held in Dakar, Senegal from 29 to 31 May 2013 recalled that the requirements by States and users for aerodrome routine meteorological reports (METAR), aerodrome special meteorological reports (SPECI) and aerodrome forecasts (TAF) to be broadcast on the SADIS were given in Annex 1 to the SADIS User Guide (SUG) also known as FASID MET Table 2A.

2.3.18 The MTF/5 meeting was also reminded that all AOP aerodromes are expected to issue METAR and SPECI, as a minimum in the AFI Region, while the requirements for TAF were subject to formal regional air navigation (RAN) agreement, which is reflected in Table, MET 1A of all the facilities and services implementation documents (FASID) of the regional air navigation plans.

*Future developments*

2.3.19 MET/SG meeting was informed by the MTF/5 of the developments on the aeronautical meteorological requirements with regard to the Global Air Traffic Management Operational Concept, and noted the important role the Regional Databank provider States would play in the envisaged digital data exchange environment. Considering that bilateral exchange of OPMET bulletin would be enabled as from November 2013 (amendment 76 to Annex 3 refers), the AFI Data bank provider States were encouraged to develop the necessary handling capacity. In this regard the Sub-Group formulated draft Conclusion 11/09 for the development of capabilities of handling OPMET information in digital format. The Sub-group therefore, endorsed the following draft conclusion:

**Draft Conclusion 19/xx: Development of Capabilities of Handling OPMET Information in Digital Format**

**That both Pretoria and Dakar RODBs Provider States be invited to:**

- a) **start developing capability of handling OPMET data in digital format as soon after November 2013 as possible;**
- b) **test the codes based on OPMET data in digital format (XML/GML) for METAR/SPECI, TAF and SIGMET with a view to fine tuning over the first year (2014); and**
- c) **take a leading role over the transition aspect to XML/GML and provide technical assistance as required to other AFI States in implementing OPMET data in digital format.**

2.3.20 In this regard, the MTF/5 meeting reported that all ICAO RODB managers including those of the AFI region (Dakar and Pretoria), were invited to participate in a meeting/workshop held in EUROCONTROL (Brussels, Belgium) on the preparation of migration from the representation of the OPMET (METAR, SPECI, TAF and SIGMET) data in the present alphanumeric format to the XML format.

2.3.21 A roadmap for the migration codes to the XML format for the period 2013 to 2019 was developed by the meeting held in Brussels, Belgium with the following stages:

- ✓ 2010 : endorsement of XML for OPMET by ANC;
- ✓ 2010 – 2012 : finalization of « code tables » for XML ;
- ✓ 2013 : enabling clauses to use XML in Annex 3 ;
- ✓ 2014 : endorsement of XML by the MET DIV Meeting ;
- ✓ 2016 – 2019: The long period of transition to accommodate developing countries;
- ✓ 2019: mandatory use of XML in Annex 3.

2.3.22 The MTF/5 meeting was pleased to note that ASECNA had developed an Action Plan for the implementation of the OPMET exchange in XML format. The meeting however, agreed that the AFI transition plan be developed after the MET Divisional meeting scheduled for July 2014.

#### *Terms of Reference and Future Work Programme of the MTF*

2.3.23 The MET/5 meeting reported that the MTF had updated its work programme through Recommendation 5/07. Following a review, the Sub-group endorsed the updated work programme and formulated Decision 11/10 accordingly.

#### *Any Other Business of the MTF Meetings*

2.3.24 The MTF/5 meeting reported that APIRG Decision 17/80 had set the frequency of MTF meetings to be on yearly basis while the venues should be on rotational basis between Dakar and Pretoria RODB host cities. Having evaluated the activities of the two RODBs during its 4th meeting, the Task Force considered that the RODBs were well established and running as expected and therefore it was no longer necessary to visit the RODBs in every MTF meeting. Therefore, through its Decision 4/17, the MTF decided to convene the annual meetings on a rotational basis at the ICAO Regional Offices Dakar and Nairobi. However, the MTF/5 reported that some Member States were of the opinion that it would be better if the venue was opened to enable any willing State to host the MTF activity.

2.3.25 The Sub-group meeting agreed that to allow for adequate preparation for the MET Divisional meeting



scheduled for July 2014, the sixth meeting of the sub group should be held in the fourth quarter of 2014. From the foregoing, the MTF/5 formulated Decision 5/08 to make the venue more flexible and to fix the next MTF/6 meeting in October or November 2014.

## **2.4 Air Navigation Deficiencies in the MET field**

2.4.1 The List of deficiencies in the MET field was reviewed and updated 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 remedial action from States concerned and inclusion of additional deficiencies identified since APIRG/18 Meeting.

2.4.2 The updated list deficiencies in the MET field adopted by the Sub-group is at **Appendix 3.6-E**

## **2.5 New Challenges facing AFI Meteorological Services: Future Developments with regards to OPMET information**

2.5.1 The Sub-group was briefed on the Global Air Traffic Management (ATM) operational concept and the MET information that will be tailored to meet the future ATM requirements, and on the Aviation System Block Upgrades (ASBU) methodology including modules related to meteorology. The plans for the introduction to the transition to table-driven data representation (XML/GML) for METAR/SPECI, TAF and SIGMET were also highlighted. The meeting reviewed the draft report on the preparation of the MET related regional air navigation implementation action plan, based on the ASBU methodology, as recommended by the PIRG-RASG Global Coordination meeting and the 12th Air Navigation Conference.

2.5.2 The meeting was informed that the Aviation System Block Upgrades (ASBU) methodology was a foundation of blocks originating from existing, near term implementation plans and access to benefits that already exist (NEXTGEN, SESAR and CARATS). It is aligned with ICAO Global ATM Operational Concept and its intent is to apply key capabilities and performance improvements across other regional and local environments. Aviation Block upgrades will allow structured approach to meet needs of individual aviation communities worldwide while considering associated business cases. They reflect recognition that all modules are not required in all airspaces.

2.5.3 The meeting was further informed that ASBU was a methodology to facilitate interoperability of different technologies, accommodate different procedures, cover all elements of Air Navigation systems (ATM, CNS, AGA, AIM and MET) and provide harmonization thus leading to seamlessness across regions. This would be achieved through progressive, cost effective and cooperative implementation of air navigation systems worldwide. The Block upgrades will allow the use of meteorological (MET) information in a net-centric ATM environment and satisfying the foreseen performance requirements for MET will have an impact on the information that needs to be made available and exchanged between information providers and users. The MET/SG noted that the meteorological support to tomorrow's ATM will be based on:

- ✓ Service delivery and benefits for airspace users by 2025;
- ✓ Network-based (net-centric) environment that is globally interoperable;
- ✓ Fusing MET information with aeronautical information and flight information.

2.5.4 The result of such support will be a transition of Meteorological (MET) products into MET information supporting collaborative, knowledge-based, decision making through free-flowing information exchange trajectory/performance based operations.

2.5.5 The meeting was informed that the outcome of the ICAO Global Planning and Implementation

Groups (PIRG) and Regional Aviation Safety Groups (RASG) coordination meeting held in March 2013 as well as Recommendation 6/1 of the 12th Air Navigation Conference (AN-Conf/12) required every PIRG to develop a Regional Air Navigation Implementation Action Plan, based on the ASBU methodology.

2.5.6 The Sub-Group was further informed that ASBU implementation would be realized through tailored regional work programmes based on specific operational needs. The work programme would be designed first by identifying the operational characteristics of the homogeneous air traffic management (ATM) areas, major traffic flows and major international aerodromes. Analysis of this operational data would identify performance improvement opportunities and ASBU modules would then be evaluated to identify those that would best deliver the needed operational improvements. Once operational analysis and resulting implementations have been completed, the next step calls for air navigation performance monitoring through an established measurement and reporting strategy. APIRG/19 meeting will therefore focus on the development of the Air Navigation Implementation Plan for the AFI region, using a structured approach as called for by the Global Air Navigation Plan.

2.5.7 To complete these tasks, the APIRG Secretary had urged all APIRG Sub-Groups including MET/SG to include this activity in their agenda in preparing for the APIRG/19 meeting. To this end, the MET/SG was requested to provide a report to be submitted to APIRG/19 for the preparation of the MET related AFI Regional Air Navigation Implementation Action Plan. As requested by the APIRG Secretary, the said report was structured as follows:

- 1) Introduction,
- 2) Analysis of the current situation,
- 3) Identification of regional priorities and targets,
- 4) Determination of implementation and benefit indicators/metrics; and
- 5) Identification of implementation challenges.
- 6) Alignment with the ASBU.

2.5.8 Based on the above-mentioned structure, the Secretariat prepared a draft report given in **Appendix 3.6-F** to this paper for review by the MET/SG. In considering the draft report, the meeting formulated Decision 11/11 calling for the MET/SG related report to be submitted to APIRG for consideration in developing the AFI Regional Implementation Action Plan in the MET area.

2.5.9 The MET/SG was informed that a significant number of runway excursions, due to the presence of water puddles on the runway, are experienced in a number of ASECNA International Airports. Pending a related AFI regional air navigation agreement, ASECNA had undertaken work on this issue in Lome (Togo), and made available its experience through an internal procedure to provide solution on this issue. In this regard, the possibility of including this information as supplementary information of METAR/SPECI to contribute in solving issues related to runway safety was discussed by the meeting. ASECNA then presented a detailed procedure developed by its MET Department to overcome this safety concern.

2.5.10 The meeting recalled that the observation and inclusion in the supplementary section of METAR/SPECI, of information related to the state of the runway, should be in accordance with regional air navigation agreement as per *Recommendation 4.8.1.5 of Annex 3, Appendix 3*. In this regard, and to contribute in resolving runway safety issues in the AFI region, the MET/SG formulated the following draft conclusion 11/12 calling for the inclusion of status of runway reports in METAR/SPECI issued in the AFI region. Therefore, the APIRG meeting may wish to adopt the following draft conclusion:

**Draft Conclusion 19/xx: Inclusion of State of Runway Reports in METAR/SPECI issued in the AFI region**

**That, the AFI Air Navigation Plan (Doc 7474) be amended to include in METAR/SPECI, the report on observations of the state of the runway in terms of depth of water deposit measurements on the runway as provided by the appropriate Airport Authority.**

## **2.6: Regional meteorological procedures**

2.6.1 The Sub-group reviewed the meteorological procedures in the AFI ANP/FASID as proposed by WAFSOPSG/7 meeting. The Sub-group was informed that it was necessary to address the elimination of references to the ISCS in lieu of the withdrawal of the international satellite communications system (ISCS) satellite broadcast by WAFSOPSG Washington on 1 July 2012. Therefore, the WAFSOPSG Secretariat was tasked to forward the WAFS-related regional procedures, to the ICAO Regional Offices concerned for the amendment of the regional ANPs to their prompt inclusion in the ANP/FASID.

2.6.2 The meeting further reviewed the meteorological procedures pertaining to in the AFI ANP/FASID as proposed by IAVWOPSG/7 meeting. The MET/SG was informed that, following a request from the IAVWOPSG/6 meeting, the IAVWOPSG Secretariat had processed a proposal for amendment to the concerned regional air navigation plans including AFI ANP, related to an amended area of responsibility for volcanic ash advisory centre (VAAC) Toulouse, consequential to the amended area of responsibility for VAAC Darwin.

2.6.3 In this regard, the Secretary of APIRG MET/SG proposed amendments in accordance with the established procedures for amendment of the Air Navigation Plan. The amendments from the WAFSOPSG and IAVWOPSG were consequently approved by the concerned States in May and September 2013 respectively.

## **2.7 Terms of reference, work programme and composition of the MET/SG**

2.7.1 The MET/SG noted the composition of the Sub-group and its terms of reference. The Sub-group recalled that the terms of reference reflected the overall tasks of the Sub-group and needed to be revised only when major changes are introduced to the MET/SG programme and that any change would have to be subjected to a draft decision to be endorsed by APIRG. In this respect, it was agreed that there was no need to amend the terms of reference at the meeting.

2.7.2 The MET/SG reviewed its work programme in line with the ICAO Business Plan. The review considered the work programme for 2013 to 2018 and the executive summaries for each recurrent task from previous Conclusions and Decisions of meetings since APIRG/13.

2.7.3 The Sub-Group, endorsed the changes proposed and formulated Draft Decision 11/13. In this regard, the MET/SG formulated the following draft decision:

### **Draft Decision 19/xx: Future work programme of the MET/SG**

**That, the updated work programme of the MET/SG given in Appendix 3.6G to this working paper, be endorsed.**

## **2.8 Any Other Business of the MET/SG/11 Meeting**

2.8.1 The MET/SG meeting recalled Conclusion 7/104 of APIRG/7 Meeting calling for AFI States to submit a formal application to the ICAO WACAF office, for enrollment to the CODEVMET project. The MET/SG Member from The Gambia, also Vice-Chairman of the MET/SG, briefed the Sub-group on the implementation of the said project. The ICAO WACAF Regional Officer, MET added that a Project Coordinator was recruited by the ICAO Technical Cooperation Bureau (TCB) to implement the project from 15 October 2012 based at its Headquarters in Banjul, The Gambia.

2.8.2 The meeting was informed that the Project Coordinator had already developed aeronautical meteorology (AeroMet) generic regulations/rules; procedures manual for AeroMet safety oversight and Quality Management System (QMS) implementation and surveillance; generic AeroMet Inspector/trainer's Handbook for the contributing States, and has also conducted basic and advanced training courses for Aeromet inspectors. The meeting was further informed that out of the current eleven Members of the CODEVMET Project, only four were effectively contributing and therefore benefiting from the project outputs. The meeting was reminded that the membership was open to all AFI States and that to benefit from the "Core Service", the contribution was 45,500 USD. The amount needed for the "Services on request" depended on the services/products required by the concerned State/Aeromet Service Provider. The project document was then distributed to all participants in the meeting. The MET/SG requested World Meteorological Organization (WMO) to assist in circulating the information to its member States in Africa.

2.8.3 The meeting was informed that, to demonstrate compliance with paragraph 2.2.3 of Annex 3 to the Convention on International Civil Aviation, WMO in conjunction with ICAO had informally considered and agreed that the following ISO 2001:2008 requirements could be taken as minima:

- 1) Availability of Quality Policy, Quality Manual and complete set of work instructions/process descriptions at all workplaces, and familiarity of staff with these documents;
- 2) Documented evidence of user consultation and feedback (publications, questionnaires, records of user meetings, actions stemming from these);
- 3) Evidence of corrective and preventive action processes; and
- 4) An internal audit plan, audit reports and documented follow-up decided by a Management Review meeting.

## **3. ACTION BY THE APIRG MEETING**

3.1 The meeting is invited to:

- a) note the information in this paper; and
- b) decide on the draft decisions and conclusions proposed to the group for consideration.

-END-