INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)

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

(Nairobi, Kenya, 8 to 10 July 2013)

Prepared by the Secretary of MET/SG

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PART 1 - HISTORY OF THE MEETING

1.1 Date and Venue of the Meeting

1.1.1 The Eleventh Meeting of the APIRG Meteorology Sub-group (MET/SG/11) was held from 8 to 10 July 2013 at the Nairobi Safari Club Hotel, Nairobi, Kenya.

1.2 Officers and Secretariat

1.2.1 The MET/SG/11 meeting was held back to back with the Fifth Meeting of the AFI OPMET Management Task Force (MTF/5). Mr. B. Sekwati, Deputy Regional Director, ICAO Eastern and Southern African (ESAF) Office, Nairobi, opened both meetings on behalf of the Regional Director, Mr. Meshesha Belayneh who had to attend to other urgent matters. He welcomed the participants, for the MTF/5 and the MET/SG/11 meetings. He expressed his appreciation to the participants and highlighted the tasks to be accomplished during the meeting.

1.2.2 Mr. Sekwati recalled that the Eighteenth Meeting of the AFI Planning and Implementation Regional Group (APIRG/18) held in Kampala, Uganda, in March 2012, reviewed the terms of reference and work programme of the MET/SG and emphasised on the objectives of the Eleventh Meeting which included among others, the status of implementation in the AFI Region of the International Airways Volcano Watch (IAVW) and World Area Forecast System (WAFS), in particular, the Satellite Distribution Systems relating to information for air navigation (SADIS) provided by the United Kingdom as an integral part of the ICAO aeronautical fixed service (AFS). The main challenge of the Eleventh Meeting was the preparation of the MET related regional air navigation implementation action plan, based on the ASBU as recommended by PIRG-RASG coordination meeting and the 12th Air Navigation Conference, he said.

1.2.3 He further stated that he was convinced that the MET/SG/11 meeting would develop and provide the next APIRG/19 meeting with substantial draft Decisions and Conclusions while keeping in mind, the main objective of improving aeronautical meteorological services in the region.

1.2.4 The MET/SG/11 meeting was chaired by Mrs. G.E. Khambule, Senior Manager, Aviation Weather Centre, South African Weather Service and one session was chaired by the Vice Chairperson Mr. Seedy Jobe, Aviation MET Coordinator of the GCAA, The Gambia. Mr. A. B. Okossi, Regional Officer, Aeronautical Meteorology of the ICAO Western and Central African Office, Dakar, Senegal served as the Secretary, assisted by Mr. Vitalis Ahago, Regional Officer, Aeronautical Meteorology, ICAO Eastern and Southern African Office, Nairobi, Kenya, and by Ms. Mildred Owiti, assistant to the RO/MET, ESAF.

1.3 Attendance

1.4.1 The meeting was attended by seventeen (17) participants from ten (10) States (**Botswana, Comoros**, **France, Gambia** (Vice-Chairman**), Kenya, Senegal, South Africa** (Chairperson)**, Tanzania, Uganda,** and **United Kingdom),** and two (2) organizations (**WMO** and **ASECNA**).

1.4.2 The list of participants is at **Appendix 1A**.

1.4 Working Languages

1.5.1 The discussions were conducted in English and French and the documentation was issued in both languages. The interpretation services were provided by four freelance interpreters.

1.5 Agenda

1.5.1 The following Agenda was adopted:

Agenda Item 1: **Election of Chairman and Vice-Chairman of the Sub-Group**

Agenda Item 2: **Review of APIRG Conclusions and Decisions**

Agenda Item 3: **WAFS and IAVW in the AFI Region**

Agenda Item 4: **Review of the Recommendations of the AFI OPMET Management Task Force 4th and 5th Meetings (MTF/4 and MTF/5)**

Agenda Item 5: **Deficiencies in the MET Field**

Agenda Item 6: **New Challenges facing AFI Meteorological Services: Future Developments with regards to OPMET information**

Agenda Item 7: **Regional meteorological procedures**

Agenda Item 8: **Terms of reference, work programme and composition of the MET/SG**

Agenda Item 9: **Any other business**

1.6 Draft Conclusions and Decisions

1.6.1 The MET/SG recorded its action in the form of draft conclusions, draft decisions, with the following significance.

1.6.2 Draft Conclusions

1.6.2.1 Draft Conclusions, when approved by the APIRG, deal with matters which in accordance with the APIRG Terms of Reference, merit the attention of States or on which further action will be initiated by ICAO in accordance with established procedures.

1.6.3 Draft Decisions

1.6.3.1 Draft Decisions, when approved by APIRG, deal with matters of concern only to the APIRG and its contributory bodies.

1.6.4 MET/SG Decisions

1.6.4.1 Decisions dealing with matters of concern only to the MET/SG.

PART II REPORT ON AGENDA ITEMS

AGENDA ITEM 1: Election of Chairman and Vice-Chairman of the Subgroup

1.1 In accordance with the relevant provisions contained in the APIRG Procedural Handbook, the Sub-group elected its Chairperson and Vice-Chairperson. Mrs G.E. Khambule, Senior Manager, Aviation Weather Services, South African Weather Service and Mr. Seedy Jobe, Aviation Meteorological Coordinator, the Gambia CAA, were elected Chairperson and Vice-Chairperson respectively.

AGENDA ITEM 2: Review of APIRG Conclusions and Decisions

2.1 The MET/SG reviewed and updated APIRG Conclusions and Decisions since APIRG/13 and streamlined them in line with APIRG18 Decision 18/01 which had expressed concern that the number of Conclusions and Decisions had become too large and hence, cumbersome to manage. The Sub-Group made an in-depth review of draft Conclusions and Decisions formulated by previous MET/SG meetings and adopted by the APIRG. The meeting noted actions taken and progress made so far on the implementation of the conclusions and decisions listed in **Appendix 2A.**

2.2 The MET/SG reviewed progress made on the implementation of these decisions and conclusions and noted the actions taken so far. In reviewing **Appendix 2A** to this report, the Sub-group agreed that:

- ✓ 23 Conclusions/Decisions implemented or obsolete, be deleted from the list;
- ✓ 5 Conclusions/Decisions be combined as three main Conclusions/Decisions; and
- ✓ 11 continuous tasks be removed from the list and transferred to the work programme or the AMBEX Handbook.

2.3 A total of 41 out of 52 Conclusions/Decisions were combined, deleted or transferred to the MET/SG work programme. In this regard, the meeting formulated the following draft Decision:

Decision 11/01: Review of Previous MET Related APIRG Conclusions and Decisions

That, the updated list of Decisions and Conclusions in Appendix 2A to this report, is adopted as the reviewed MET related APIRG Decisions and Conclusions.

AGENDA ITEM 3: WAFS and IAVW in the AFI Region

3.1 Status of implementation of WAFS and IAVW in the AFI Region.

3.1.1 The meeting recalled that the Satellite Distribution System for information relating to air navigation (SADIS) provided by the United Kingdom, as an integral part of the ICAO Aeronautical Fixed System (AFS), was fully operational and that the SADIS 2G broadcasts covers the AFI Region except Cape Verde Island which had access to Secure SADIS FTP only.

3.1.2 The Sub-group reviewed the new developments to the WAFS since the last meeting of the APIRG MET SG (MET SG/10) in 29 June to 1st July 2011, Dakar, Senegal. Since that meeting there has been one more meeting (WAFSOPSG/7). The executive report of the WAFSOPSG/7 is given in **Appendix 3A** to this report.

3.1.3 The Sub Group noted that both WAFCs of London and Washington made available harmonized forecasts, in GRIB2 format, of CB cloud, icing and turbulence and that currently, the data is made available via Secure SADIS FTP and WIFS (for backup purposes).

3.1.4 Regarding availability times of WFS upper air forecasts in WMO GRIB Edition 1 and GRIB edition 2 code forms, the Sub group noted that, the WAFC Providers were able to review the production and availability time of the WAFS GRIB1 data sets, essentially making the GRIB1 datasets available sooner than previously expected, but still delivering after WAFS GRIB2.

3.1.5 The Sub Group meeting noted that WAFS upper-air forecasts in the GRIB1 code form will cease to be generated as part of the WAFS portfolio of datasets as of applicability of Amendment 76 to ICAO Annex 3. Consequently, the last WAFS Upper Air Forecasts produced in GRIB1 code form will be those with observational data time of 1800 UTC 13 November 2013.

3.1.6 The Sub Group was pleased to note that the WAFCs have produced a guidance document (Guidance on the Harmonized WAFS Grids for Cumulonimbus Cloud, Icing and Turbulence Forecasts - 11 September 2012), and that it is available on the WAFSOPSG website: (http://www.icao.int/safety/meteorology/WAFSOPSG/Pages/GuidanceMaterial.aspx).

3.1.7 The Sub Group further noted that t the WAFC Provider States were invited to develop computer based (including voice over) initial training material for the WAFS gridded global forecasts for cumulonimbus clouds, icing and turbulence, and to make available on the WAFSOPSG website (WAFSOPSG Conclusion 7/13 refers). The SADIS Provider informed the meeting that the availability of the training material will be notified by SADIS Administrative Message (NOUK11 EGRR).

3.1.8 The SADISOPSG 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.

3.1.9 The Sub Group was pleased to note 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 will be implemented by end August 2013.

3.1.10 The Sub Group noted that the SADIS Provider expects to commence distribution of WAFC London GRIB2 forecasts of CB cloud, icing and turbulence via SADIS 2G accordingly. Such forecasts are already made available on Secure SADIS FTP, but changes will be made to the directory structure to remove references to 'TRIAL_FORECASTS'. This action was endorsed at the SADISOPSG/18 meeting. The executive report of the SADISOPSG/18 is given in **Appendix 3B** to this report.

3.2 *Review of the IAVWOPSG/6 and IAVWOPSG/7 meeting reports*

3.2.1 The IAVWOPSG/6 and IAVWOPSG/7 meetings were held at ICAO Regional Offices, Dakar and Lima in September 2011 and September 2012 respectively. The executive summaries of the reports of the two meetings are given in **Appendices 3C and 3D** to this report.

3.2.2 Concerning the development of guidance material related to the reporting of complex volcanic ash events (multiple layers and/or more than one eruption within a FIR) in SIGMET, the IAVWOPSG/6 meeting agreed to assess, inter alia, if the volcanic ash advisory/volcanic ash advisories in graphical format (VAA/VAG) could be used to replace the SIGMET for volcanic ash and the capability of the nine VAACs to provide global service in this regard.

3.2.3 Regarding the feasibility of replacing SIGMET for volcanic ash with VAA/VAG, the IAVWOPSG/7 meeting noted that the best way to address this issue would be in the development of a roadmap on how future information to aviation on volcanic hazards are to be provided in a collaborative way between VAACs and States in their area of responsibility, taking into consideration the requirement of integrating meteorological information into ATM.

3.2.4. To support quality management of the meteorological information to be supplied to users, the group agreed with the inclusion, by VAACs, of information on QMS implementation status in the VAAC Management Reports.

3.2.5 In view of the recent success of the three VAAC best practice seminars, assisted by the generous support of IATA, the group invited ICAO, in coordination with WMO, to consider the best practice seminars as a future mechanism for use by the IAVWOPSG for issues that need to be progressed urgently, particularly where the active involvement of VAAC managers is required.

3.2.6 The group 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.

3.2.7 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), the group agreed to develop additional guidance material on the use of the volcano observatory notice for aviation (VONA) for inclusion in Doc 9766.

3.3 Activities of the VAAC, Toulouse and TCAC, Reunion

3.3.1 The Sub-Group was presented with a management report on the VAAC Toulouse operational activities for the period June 2011 to May 2013 and was pleased to note the efforts by the centre to improve the modeling of volcanic pollutants.

3.3.2 Other operations of the VAAC included the creation of a network of LIDARs on the French Metropolitan area in order to collect data on aerosols such as volcanic ash, and the development of a 4 channel discrimination ash/water algorithm. Images based on this algorithm are made available at 15 minute intervals.

3.3.3 The Sub-Group was informed that, between June 2011 and May 2013, the VAAC issued 187 operational advisories in both text and graphical formats. The Sub-Group also learned that 11 VA advisory exercises were conducted between June 2011 and end of 2012. The meeting was further informed of significant eruptions that occurred within the area of coverage of the VAAC from 2011 to Mid-2013.

3.3.4 The meeting was informed that plans for VAAC back-up were underway and that a back-up test is planned for 2013.

3.3.5 Regarding the operations of the TCAC, Reunion, the meeting was informed that it was the first TCAC to produce and disseminate advisory advisories of cyclones in graphical form. The meeting was pleased

to learn that TCAC, Reunion continually strives to improve the quality of its cyclone forecasts.

AGENDA ITEM 4: Review of the Recommendations of AFI OPMET Management Task Force Fourth and Fifth Meetings (MTF/4 and MTF/5)

4.1 The Sub-group recalled that Conclusion 16/54 of APIRG/16 meeting called for the establishment of the AFI OPMET Management Task Force (AFI OPMET MTF or MTF). The Task Force 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. 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 which became two Draft Conclusions, one Draft Decision and six Decisions for the MET/SG meeting.

4.2 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 IROGs and that the Task Force, in its fifth meeting, 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 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 MTF/5 formulated Recommendation 5/02. To address this issue, the MET/SG adopted the above mentioned recommendation as a draft Conclusion to be submitted to APIRG for inclusion in the AMBEX Scheme.

Draft Conclusion 11/02: Procedure for AFI OPMET data monitoring

That,

a) Dakar and Pretoria RODBs:

1) Conduct within their respective areas of responsibilities, the monitoring of OPMET received from AFI 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 concerned States 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 MWOs and Review of report on SIGMET Tests conducted in November 2012

4.3 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.

4.4 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 informed that in 2012, 22 MWOs over 35 (61%) in the AFI region, were still not issuing SIGMETs at the time of the test. 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 have never issued SIGMET whereas the figure for 2011 was 51%, resulting in an improvement of 14%. This positive impact could partly be as a result of SIGMET training conducted recently (2012).

4.5 The MTF/5 reported that South Africa had proposed an amendment to the AFI Air Navigation Plan (Doc 7474) to enable willing States issue and distribute meteorological information in support of low level flight operations (AIRMET, GAMET, et..) in the AFI region. This was as a result of recurrent requests from users. The MTF recalled that such information was not a requirement in the region as per AFI Air navigation plan. However, some States, including South Africa, have consistently issued AIRMET information to users. The MTF meeting 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 has recently increased significantly in some States in the region. Therefore, the MTF formulated recommendation 5/03 for 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 meeting formulated the following Decision:

Decision 11/03: Establishment of an Ad-hoc Group on the Implementation of Meteorological Information for Low Level Flight

That,
the ad-hoc group composed of France, Kenya, South Africa (rapporteur), SADIS Provider (UK) and ASECNA:

a) is established and tasked to investigate on the issue through:
- ✓ **ICAO standards and recommended practices (SARPs) ;**
- ✓ **SADISOPSG Conclusions and Decisions ;**
- ✓ **EUR Air Navigation Plan and other relevant documentation ; and**

b) Provides a consolidated report to the MET/SG/12 meeting.

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

4.6 The meeting was informed that the amended version of the AFI SIGMET Guide has been adopted through Decision 18/47 of the APIRG/18 meeting which also required inclusion of explanations of Table MET 3A and Table MET 3B. The MTF/4 meeting reported that in order to avoid the possible confusion, 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 the following Decision.

Decision 11/04: Updating of AFI Regional SIGMET Guide

That, the Secretariat:

a) update Appendixes A and H to the AFI Regional SIGMET Guide to reflect the correct MWO names and location indicators for South Africa as follows:

1) **the MWO name as Johannesburg (FAJS);**

2) **FIRs names and location indicators served as Cape Town FIR (FACA), Johannesburg FIR (FAJA) and Johannesburg Oceanic FIR (FAJO);**

b) update the Regional SIGMET Guide to reflect the outcome of the global review being carried out by the METWSG;

c) revise the heading in Appendix F to the AFI Regional SIGMET guide with a view to replace the word "Standard" with the word "Procedures", and

d) publish the SIGMET Guide given in Appendix 4A to this report, on the ICAO website before October 2013.

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

4.7 The meeting was informed that reviews of bulletins, as monitored by the SADIS gateway, 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). In this regard the Sub-Group formulated the following decision:

Decision 11/05: Monitoring of OPMET bulletins in coordination with ROC Toulouse

That, the monitoring done by RODBs Pretoria and Dakar and ROC Toulouse be harmonized to ensure that the same bulletins headers, as described in the AMBEX Handbook, are monitored at all these facilities for comparison and continuous improvement.

4.8 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 contribute 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 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.

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

- ✓ change of the TAF filing time as indicated in appendix 10 (paragraph 2.1.2) Amendment 76 to ICAO Annex 3;
- ✓ 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.

4.10 The MET/SG was of the opinion that important issues including urgent items, 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 the AMBEX Handbook before APIRG/19 meeting.

4.11 The Sub-group was informed that Recommendation 6/11 of the 12th Air Navigation Conference (AN-Conf/12) called for ICAO to align the areas of applicability of the *Regional Air Navigation Plans* (ANPs) be aligned with those of the *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.

4.12 In considering these issues, the MET/SG meeting agreed to include the above mentioned tasks to that of the Core team on AMBEX Handbook. In this regard, the meeting formulated the following Decision:

Decision 11/06: Update of the AMBEX Handbook

That, the draft amendment to the AMBEX Handbook given in Appendix 4B to this report, be expeditiously finalized by the Core Team on the AMBEX Scheme taking into account the information in the above mentioned paragraphs 4.8 to 4.12, and be distributed to AFI States by the Secretariat as the AMBEX Handbook Amendment 3.

AFI RODBs Implementation Status Report

4.13 The MET/SG was pleased to be informed that the implementation status reports of Dakar and Pretoria RODBs indicated that many actions had been taken to improve the implementation of the AMBEX scheme in accordance with Decisions, and Conclusions of MTF, MET/SG and APIRG meetings. However, to improve the structure of the reports, the MTF/5 agreed to develop a template through its Decision 5/04, for reporting by the RODBs.

Finalization of the AFI OPMET Data Catalogue

4.14 The MTF/5 meeting recalled that Conclusion 18/46 of APIRG/18 Meeting 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 calls 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 4C** to this report , as proposed by the RODB Managers, and formulated the recommendation 5/05., The Sub-group concurred with the proposal and formulated the following Decision:

Decision 11/07: Finalization of the AFI OPMET Data Catalogue

That,

a) the finalized data catalogue given in the Appendix 4C to this report, be implemented by AFI RODBs; and

b) the Secretariat distribute to AFI States and publish on the AFI website, the amended AFI ICD

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

4.15 The MTF/4 reported that the MTF/2 meeting recommendations 2/7 and 2/9 called for the establishment of a Core Team of experts with a task to develop backup procedures for the two AFI RODBs (Dakar and Pretoria). The MTF/5 meeting reported that the Core team presented a set of procedures during MTF/4 meeting but there was a need for further investigation and therefore formulated the Decision 4/13 to encourage the Core Team to improve the backup procedures so far developed using contributions from existing backup procedures especially from London and Washington WAFCs. In this regard, the Core Team agreed that the backup of the two AFI RODBs can be achieved by implementing few 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.

4.16 The MTF/5 meeting had noted that the backup procedure between WAFCs could not be adopted for the backup of the two AFI RODBs as the methods, infrastructure and validation criteria (MET/SG Decision 10/05 refers) used were different. The meeting further noted that the current backup practice between Brussels, Vienna and Toulouse was simple and not resource intensive and the MTF/5 meeting agreed that the same could be implemented by both AFI RODBs. However, for such a practice to work in the AFI Region, the measures listed above are to be implemented first, and therefore, formulated Recommendation 5/06. In this regard, the MET/SG adopt the following draft Decision:

Draft Decision 11/08: Implementation of AFI RODB Back up Procedures

That,

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;

e) The MTF include AFTN addresses of both RODBs in the AFI ICD; and

f) Dakar and Pretoria RODBs implement the same data validation criteria.

Review of OPMET Related FASID Tables

4.17 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.

4.18 The MTF/5 meeting was also reminded that all AOP aerodromes 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

4.19 MET/SG meeting was informed by the MTF/5 of the developments on the aeronautical meteorological requirements for Global Air Traffic Management Operational Concept, and noted the important role the Regional Databank provider States will be playing in the digital data exchange environment. Considering that bilateral exchange of OPMET bulletin will 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 the following Draft Conclusion:

Draft Conclusion 11/09: 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.

4.20 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.

4.21 A roadmap for the migration codes to the XLM 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.

4.22 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

4.23 The MET/5 meeting reported that the MTF updated its work programme through Recommendation 5/07. After a review, the Sub-group endorsed the updated workprogramme and formulated the following Decision:

Decision 11/10 — Future work programme of the MTF

That, the updated work programme of the MTF as shown in Appendix 4D, is endorsed.

Any Other Business

4.24 The MTF/5 meeting reported that APIRG Decision 17/80 had set the frequency of MTF meetings on yearly basis while the venues 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 now 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 had pointed out that the venue should be opened to enable any willing State to host the MTF activity.

4.25 The Sub-group meeting agreed that to allow 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.

AGENDA ITEM 5: Air Navigation Deficiencies in the MET field

5.1 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.

5.2 The updated list deficiencies in the MET field adopted by the Sub-group is at **Appendix 5A**

AGENDA ITEM 6: New Challenges facing AFI Meteorological Services: Future Developments with regards to OPMET information

6.1 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 ATM requirements, and on the Aviation System Block Upgrades (ASBU) methodology and 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 (March 2013) and the 12th Air Navigation Conference (November 2012).

6.2 The meeting was informed that the Aviation System Block Upgrades (ASBU) methodology is 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.

6.3 The meeting was further informed that ASBU is a methodology to facilitate interoperability of different technologies, accommodate different procedures, cover all elements of AN systems (ATM, CNS, AGA, AIM and MET) and provide harmonization thus leading to seamlessness across regions. This is 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.

6.4 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.

6.5 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) requires every PIRG to develop a Regional Air Navigation Implementation Action Plan, based on the ASBU methodology.

6.6 The Sub-Group was further informed that ASBU implementation would be realized through tailored regional work programmes based on specific operational needs. This work programme will 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 will identify performance improvement opportunities and ASBU modules will then be evaluated to identify which of them 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.

6.7 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.

6.8 Based on the above-mentioned structure, the Secretariat prepared a draft report given in **Appendix 6A** to this report for review by the MET/SG. In considering the draft report , the meeting formulated the following Decision:

Decision 11/11: MET/SG Report for the Preparation of the MET related AFI Regional Air Navigation Implementation Action Plan

That, the information provided in Appendix 6A to this report, is adopted as the APIRG MET/SG report to be submitted to APIRG for consideration in developing the AFI Regional Implementation Action Plan in the MET area.

6.9 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 has undertaken work in this issue in Lome (Togo), and is making available its experience through an internal procedure in order to provide solution on this issue. In this regard, a 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 presented a detailed procedure developed by its MET Department to overcome this safety concern.

6.10 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 b 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:

Draft Conclusion 11/12: 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 water puddles measurements on the runway as provided by the appropriate Airport Authority.

AGENDA ITEM 7: Regional meteorological procedures

7.1 The Sub-group reviewed the meteorological procedures pertaining to in the AFI ANP/FASID as proposed by WAFSOPSG/7 meeting which was held at the ICAO regional Office in Lima, Peru from 17 to 21 September 2012. The Sub-group was informed that it was necessary to mainly address the elimination of references to the ISCS in lieu of the withdrawal of the international satellite communications system (ISCS) satellite broadcast by WAFC 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.

7.2 The meeting further reviewed the meteorological procedures pertaining to in the AFI ANP/FASID as proposed by IAVWOPSG/7 meeting which was held at the ICAO regional Office in Bangkok, Thailand from 18 to 22 March 2013. 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.

7.3 In this regard, the Secretary of APIRG MET/SG proposed amendment in accordance with the established procedures for amendment of the Air Navigation Plan. The amendment from the WAFSOPSG was consequently approved by the concerned States in May 2013 with the serial number WACAF 13/3-MET for the BASIC ANP, and in April 2013 with the serial number WACAF 13/2-MET for the FASID ANP. The amendment initiated by the IAVWOPSG meeting is being processed.

AGENDA ITEM 8: Terms of reference, work programme and composition of the MET/SG

8.1 The MET/SG noted the composition of the Sub-group and its terms of reference shown in **Appendix 8A** to this report. 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 conclusion 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.

8.2 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 APIRG Conclusions and Decisions.

8.3 The Sub-Group, endorsed the changes proposed and formulated the following decision:

Draft Decision 11/13 — Future work programme of the MET/SG

That, the updated work programme of the MET/SG given in Appendix 8B to this report, be endorsed.

AGENDA ITEM 9: Any Other Business

9.1 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 meeting briefed the Sub-group on the implementation of the said project started since last year. In this regard, the ICAO WACAF Regional Officer, MET indicated that a Project Coordinator was recruited by ICAO Technical Cooperation Bureau (TCB) to implement the project from 15 October 2012 at its Headquarters in Banjul, The Gambia the host State. The Project Coordinator has 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. From the current eleven Members of the CODEVMET Project, only four are effectively contributing and benefiting from the project outputs, he said. He further reiterated that the Membership is open to all AFI States and the contribution to benefit from the "Core Service" is 45.500 USD, the amount needed for the "Services on request" depends on the services/products required by the concerned State/Aeromet Service Provider. The project document was distributed to the participants and the meeting requested World Meteorological Organization (WMO) to assist in circulating this information in its Africa Members.

9.2 The meeting was informed that, to demonstrate compliance with paragraph 2.2.3 of ICAO Annex 3, WMO in conjunction with ICAO had informally considered and agreed that the following ISO 2001:2008 requirements could be taken as minima.. The said minimum considerations are the following:

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.

9.3 The meeting thanked WMO for the information provided regarding implementation of QMS.

9.4. There being no other business, the vice chairperson thanked all participants and closed the meeting at on 10 July 2013 at 1610 hours.