INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)

REPORT OF THE TWELTH MEETING OF THE METEOROLOGY SUB-GROUP (MET/SG/12)

(Dakar, Senegal, 1 to 5 December 2014)

Prepared by the Secretary of MET/SG

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PART 1 - HISTORY OF THE MEETING

DATE AND VENUE OF THE MEETING

1.1 The Twelfth meeting of the APIRG Meteorology Sub-group (MET/SG/12) was held from 1 to 5 December 2014, at the ICAO Western and Central African (WACAF) Regional Office located at Leopold Sedar Senghor International Airport, Dakar, Senegal.

LANGUAGE AND DOCUMENTATION

2.1 The discussions were conducted in English and French languages, and the meeting documentation was issued in both languages. Translation and simultaneous interpretation services were also provided.

OFFICERS AND SECRETARIAT

3.1 The MET/SG/12 meeting was chaired by Mrs. G.E. Khambule, Senior Manager, Aviation Weather Centre, South African Weather Service.

3.2 Mr. A. B. Okossi, Regional Officer, Aeronautical Meteorology of the ICAO Western and Central African (WACAF) Regional Office, Dakar, Senegal served as the Secretary, assisted by Mr. Vitalis Ahago, Regional Officer, Aeronautical Meteorology, ICAO Eastern and Southern African (ESAF) Regional Office, Nairobi, Kenya, and Mrs. Adja Rokhaya, GUEYE-DIA, assistant to the RO/MET, WACAF.

ATTENDANCE

4.1 The meeting was attended by forty-four (44) participants from seventeen (17) States/Organizations (**Capo Verde, Cameroon, Chad, Congo, Côte d'Ivoire, Gabon, Gambia, Ghana, Kenya, Madagascar, Niger, Senegal, South Africa, Uganda**, **ASECNA, IFALPA, UK**). The UK participated through Skype.

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

OPENING OF THE MEETING

5.1 The meeting was opened by the Director of the National Meteorological Department, Mrs Aida Diongue Niang on behalf of the Director General of the National Agency for Civil Aviation and Meteorology (ANACIM),Senegal.

5.2 She welcomed the participants to Senegal, the land of Teranga, and expressed the joy of Senegal in hosting such important aeronautical meteorology (MET) meeting. She recalled major challenges faced by the AFI Region in the implementation of MET service for International air navigation within the framework of the Global Air Navigation Plan (GANP) and related working methods aligned to the Aviation System Block Upgrades (ASBU) methodology.

5.3 Mrs Aida Diongue Niang took the opportunity to recall the significant contributions by Senegal in the field of aeronautical Meteorology, especially in the establishment of one of the two Regional OPMET Data Banks (RODB) of the AFI region in Dakar. She also confirmed the commitment by her Government in supporting initiatives by ICAO and other international organizations based in Senegal. In conclusion, she wished participants fruitful deliberations and enjoyable stay in Senegal.

5.4 Mr. Gaoussou Konaté, Deputy regional Director, ICAO Western and Central African (WACAF) Office, on behalf of the Regional Director, Mr. Mam Sait Jallow, who had to attend other urgent matters, welcomed all participants to the 12th meeting of the Sub-group. He expressed special gratitude to the Director of the MET Department, Senegal, for accepting to officiate in the opening of the meeting despite her heavy work programme. In welcoming participants to the meeting, he expressed his appreciation for their attendance and highlighted the major tasks to be accomplished during the meeting.

5.5 Mr. Gaoussou recalled that the Nineteenth Meeting of the AFI Planning and Implementation Regional Group (APIRG/19) held in Dakar, Senegal, from 28 to 31 October 2013, reviewed the terms of reference and work programme of the MET/SG. He emphasised on the objectives of the Twelfth-Meeting which included, among others, the outcome of APIRG Extraordinary (APIRG/EO) Meeting (Lusaka, Zambia, 2014), the outcome of the 2014 Meteorology Divisional Meeting (Montréal, Canada, July 2014), the Status of implementation of the work programmes of the APIRG MET Sub-group (MET/SG), AFI OPMET Management Task Force (AFI MTF) and ATM-MET/TF as assigned by APIRG, and the New Structure of the AFI regional Air Navigation Plan (AFI ANP) and development of draft material for endorsement by APIRG. He indicated that he remained convinced that the Sub-group would provide APIRG/20 meeting with substantial input including draft Decisions and Conclusions while keeping in mind, the main objective of improving meteorological services in the region.

5.6 Finally, Mr. Gaoussou invited the meeting to take time out and enjoy the pleasant and beautiful city of Dakar, the capital city of the Country of Teranga. He wished participants great success in the deliberations.

5.7 On behalf of the Director General of the Agency for Air Navigation Safety in Africa and Madagascar (ASECNA), Mr Amadou Ousmane Guitteye, Mrs. OBAME-EDOU Claire-Josette, Director of Operations, ASECNA also welcomed the participants to the twelfth meeting of the APIRG Meteorological Sub-group.

5.8 She highlighted major decisions taken by the world aviation community during the 12th Air Navigation Conference in 2012 and those by the Meteorology Divisional Meeting (MET/14) in July 2014 in Montreal. The decisions included those on how aeronautical meteorology would support the delivery of operational improvements aligned with the Aviation system block upgrade (ASBU) methodology to make international air navigation both safe and more efficient. She indicated that the outcome of both the nineteenth APIRG held in Dakar in October 2013 and the extraordinary meeting held in July 2014 in Lusaka, Zambia, would enable the AFI region to establish regional aspects of the Global air navigation planning. In view of the fact that aeronautical meteorology is a major component of this planning, she underscored the paramount importance of the MET Sub Group meeting for the Region.

5.9 In addition, as part of its Plan of Services and Equipment, Mrs OBAME-EDOU informed participants that ASECNA had listed a number of urgent actions to be taken to implement regional performance objectives for aeronautical meteorology in accordance with ASBU Module B0-AMET. These included on-going studies for the acquisition of storm and wind shear detection equipment; renewal of some equipment to improve the quality of aerodrome meteorological observations; acquisition of a forecaster support system for very short-term weather forecasting; capacity building of the MET training centres, she said. In addition, she was pleased to apprise the meeting of the effective implementation of the quality management system (QMS) for MET service delivery in all the 17 ASECNA Member States.

AGENDA

6.1 The following Agenda was adopted:

Agenda Item 1: Adoption of the Agenda

Agenda Item 2: Election of Chairman and Vice-Chairman of the Sub-Group

Agenda Item 3: Review of the outcome of APIRG Extraordinary Meeting (Lusaka, Zambia, 10-11 July 2014)

Agenda Item 4: Review of the Outcome of the 2014 Meteorology Divisional Meeting (Montréal, Canada, 7 – 18 July 2014)

Agenda Item 5: Status of implementation of the work programmes of the APIRG MET Sub-group (MET/SG), AFI OPMET Management Task Force (AFI MTF) and ATM-MET/TF as assigned by APIRG

Agenda Item 6: Linkage of remaining tasks of the MET/SG with Aviation System Block Upgrades (ASBU) Modules B0 and Regional Performance objectives for MET

Agenda Item 7: Identification and development of Projects based on ASBU B0 and Regional Performance objectives

Agenda Item 8: Review of the New Structure of the AFI regional Air Navigation Plan (AFI ANP) and development of draft material for endorsement by APIRG

Agenda Item 9: Any other business

Draft Conclusions and Decisions

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

7.2 Draft Conclusions

7.2.1 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.

7.3 Draft Decisions

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

7.4 Decisions

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

PART II - REPORT ON AGENDA ITEMS

AGENDA ITEM 1: Adoption of the Agenda

1.1 The meeting reviewed and adopted the Agenda as indicated in paragraph 6 of the history of the meeting

AGENDA ITEM 2: Election of Chairman and Vice-Chairman of the Subgroup

2.1 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 3: Review of the outcome of APIRG Extraordinary Meeting (Lusaka, Zambia, 10-11 July 2014)

3.1 The MET/SG meeting recalled that the 19th AFI Planning and Implementation Regional Group (APIRG/19) meeting held in Dakar, Senegal, formulated decision 19/48 which, amongst others, requesting APIRG Secretariat to develop a revised structure of the APIRG which would take into account best practices/benchmarking, the need for synergies between similar and complementary activities and establishing regional targets and priorities.

3.2 The MET/SG meeting noted that the APIRG extraordinary (APIRG/EO) meeting was held in Lusaka, Zambia from 10 to 11, 2014 with the objective of reviewing proposals developed by the Secretariat for the structural transformations of APIRG to improve effectiveness of regional implementation projects which, in turn, are based on the Aviation System Block Upgrades (ASBU) methodology.

3.3 The MET/SG meeting further noted that the APIRG/EO meeting adopted the proposal that the structure of APIRG be reorganized into four subsidiary bodies based on the four Performance Improvement Areas (PIAs) of the ASBU methodology. Having adopted a project management approach, APIRG/EO agreed that there would be no "standing" structural bodies below the sub-groups. However, 'Projects' would be identified by the Sub-Groups and be executed by 'Teams' of experts and champions reporting to the Sub-Groups. The MET/SG meeting further noted that APIRG/EO adopted Decision EO/01 reproduced hereunder:

"*DECISION EO/01: REORGANIZATION OF APIRG:-*

That:

a) the new organizational structure of APIRG comprising:
   1) one Projects Coordination Committee (APCC)
   2) one Airspace and Aerodrome Operations Sub-Group (AAO/SG),
   3) one Infrastructure and Information Management Sub-Group (IIM/SG), and
   4) one Traffic Forecasting Group (TFG),
   as described in Appendices B, C, D, E, and F to this report, is adopted and will become effective following the next APIRG meeting.;

b) the preliminary terms of reference of the APCC provided at Appendix D to this report are to be reviewed and finalized at the next APIRG meeting; and

c) projects be identified from ASBU modules and regional performance objectives adopted by APIRG, to be carried out by teams of experts provided by States and concerned international organizations."

3.4 The Sub-group noted that the APIRG/EO meeting had set plan to transit it from its current form to the new structure and working methods, taking into consideration the need for continuity in its functions. In this regards, APIRG/EO adopted Decision EO/03 on the transition to new APIRG organization, reproduced below:

***"**DECISION EO/03: TRANSITION TO NEW APIRG ORGANIZATION*

That the Secretariat and APIRG contributory bodies:

a) continue to implement the work programmes as previously endorsed by the Group; and,

*b) carry out necessary action to facilitate the operationalization of the new organizational structure and working methods of the APIRG, including reformulation of existing activities that continue to have relevance, into the projects management formats, to be presented for endorsement by the next meeting of the Group**."***

AGENDA ITEM 4: Review of the Outcome of the 2014 Meteorology Divisional Meeting (Montréal, Canada, 7 – 18 July 2014)

4.1 The Meteorology (MET) Divisional Meeting of 2014 (MET/14), was conjointly held with the 15th Session of the World Meteorological Organization (WMO) Commission for Aeronautical Meteorology (CAeM) at the Headquarters of the International Civil Aviation Organization (ICAO) in Montreal, 7 to 18 July 2014. The MET/14 was attended by 308 participants from 95 States and 7 international organizations (the Agency for Air Navigation Safety in Africa and Madagascar (ASECNA), the Civil Air Navigation Services Organisation (CANSO), the European Union (EU), the European Organisation for the Safety of Air Navigation (EUROCONTROL), the International Air Transport Association (IATA), the International Federation of Air Line Pilots' Associations (IFALPA), and the WMO).

4.2 In this regard, the MET/SG meeting was informed that the MET/14 meeting:

a) was apprised of the fourth edition of ICAO's Global Air Navigation Plan (GANP) (Doc 9750) endorsed by the 38th Session of the ICAO Assembly in 2013. The edition includes the aviation system block upgrade (ASBU) methodology intended to develop a set of air traffic management (ATM) solutions or upgrades, taking advantage of existing equipage, establishing a transition plan, and enabling global interoperability;

b) recommended the updating of the GANP and ASBU methodology to reflect interdependencies with other modules including those related to the system wide management (SWIM) and including a B2-AMET module in the Block 2 timeframe;

c) agreed to develop, in support of ASBU methodology, the world area forecast system (WAFS) during the 2013 to 2028 timeframe focused around a set of principles including the implementation of improved turbulence and icing algorithms and other forecast improvements, the use of forecast ensembles and the integration of WAFS information into the SWIM environment;

d) recommended that an appropriate ICAO expert group be tasked to further develop the aeronautical fixed service (AFS) satellite distribution system for information relating to air navigation (SADIS), and the Secure SADIS FTP and WAFS Internet File Service (WIFS) Internet-based services in a manner consistent with the GANP to ensure that their operation continue to meet user expectations;

e) recommended, in deciding that SADIS 2G should not be extended beyond 2019, that an appropriate expert group should undertake formal testing of the exchange of global OPMET information and WAFS forecasts on the ATS message handling system (AMHS);

f) tasked an appropriate expert group to further develop SADIS Secure SADIS FTP; this would insure user expectations are met even after the termination of SADIS 2G service;

g) agreed that, for IAVW to evolve in line with the GANP, an appropriate ICAO group, in coordination with WMO, be tasked to develop necessary requirements;

h) agreed for ICAO to work towards developing initial provision for information concerning space weather for inclusion in Amendment 78 to Annex 3;

i) recommended that, to further develop provisions consistent with the evolving GANP in the context of the dissemination of information on the release of radioactive material into the atmosphere, an appropriate ICAO expert group, in close coordination with WMO, be tasked;

j) agreed that, in view of the long-standing SIGMET implementation deficiencies in some States, there was an urgent need for the establishment of regional hazardous weather advisory centres (RHWACs) which will assist meteorological watch offices (MWOs) with the issuance of SIGMET information for select hazardous meteorological conditions; consequently, the MET/14 recommended that a regional hazardous weather advisory framework be implemented expeditiously and requested that an appropriate ICAO expert

group, in close coordination with WMO, be tasked to develop a regional advisory system for selected en-route hazardous meteorological conditions especially in those States where notable SIGMET-related deficiencies persist;

k) recommended to ICAO, in close coordination with WMO, be tasked to include meteorological service for terminal area and other relevant operational requirements in Block 1 and subsequent blocks of the ASBU methodology, to highlight potential related impacts on air traffic flow in consideration of air traffic control and ATM;

l) recommended that, to support the implementation by 2028 of module B3-AMET of the ASBU methodology, an appropriate ICAO expert group be tasked, in close coordination with WMO, to undertake advanced planning, in the 2015 to 2020 timeframe, of the technological requirements and aeronautical meteorological service capabilities needed;

m) recommended the development of provisions for aeronautical meteorological information services in the context of collaborative decision making (CDM) and common situational awareness, to support transition to a more collaborative operating environment and increased automation; additionally, it was recommended that ICAO and WMO should ensure that human factors considerations remain integral to aeronautical meteorological service provision during the transition;

n) recommended that, to support trajectory based operations (TBO), an appropriate ICAO expert group (or groups), in close coordination with WMO, finalize a draft concept of operations and roadmap concerning aeronautical meteorological information integration for TBO and establish further ATM requirements and aeronautical meteorological service capabilities,;

o) recommended that ICAO, through an appropriate expert group and in close coordination with WMO, develop provisions to enable the inclusion of aeronautical meteorological information in the future SWIM environment consistent with the GANP based on given milestones and guided by an appropriate roadmap, to support the integration of meteorological information into a future SWIM environment, and to allow the ATM system to develop alongside the expectations of the GANP;

p) recommended that ICAO, through an appropriate expert group and in close coordination with WMO, to include consideration of a number of issues including the identification and recognition of approved data sources, cost recovery and the scalability of data requirements, to ensure that the meteorology-related developments within the SWIM environment are fully aligned with the mandates of both ICAO and WMO;

q) recommended that ICAO and WMO undertake a thorough review of the Working Arrangements between ICAO and WMO (*Working Arrangements between the International Civil Aviation Organization and the World Meteorological Organization* (Doc 7475), in order to ensure that they appropriately reflect the respective mandates, governance structures and modes of operation of the two organizations;

r) recommended that ICAO, in coordination with WMO, further clarifies the notion of meteorological authority, through appropriate amendments to ICAO provisions and supporting guidance material. in order to clarify the use of the terms “Contracting State” and “Meteorological Authority” in certain provisions of Annex 3/Technical Regulations [C.3.1] and in related guidance material;

s) recommended ICAO to urge States to ensure that the personnel performing safety oversight functions of the aeronautical meteorological service are adequately qualified and competent, thus meeting the requirements of Annex 19, and to develop appropriate guidance material to assist States with regard to the oversight of aeronautical meteorological service provision; in this regard, the MET/SG meeting formulated the following draft conclusion.

Draft Conclusion 12/01: Qualification of personnel performing safety oversight functions of the aeronautical meteorological service

That, in accordance with recommendation 4/3 of the MET/4 meeting and to the related ICAO State Letter, personnel performing safety oversight functions of the aeronautical meteorological service in the AFI region, is adequately qualified and competent as stipulated in Annex 19 to the Chicago convention.

t) recommended that ICAO and WMO undertake a review and, as necessary, update guidance material on the costs recovery of aeronautical meteorological service provision, to strengthen guidance on cost recovery, particularly in those States with complex airspace arrangements;

u) tasked WMO, in coordination with ICAO, to undertake steps through the implementation of a competency framework based on quality management system principles and supported by relevant training material, to ensure that the competency and underpinning training of aeronautical meteorological personnel is sufficient to adapt to new working practices;

v) recommended that ICAO, in close coordination with WMO, consider the development of provisions concerning the required level of English language proficiency of aeronautical meteorological personnel, to mitigate the risk of critical misunderstandings caused by language problems that may, have flight safety implications downstream;

w) recommended that ICAO and WMO remind States/Members of their obligations in respect of the provision and use of aeronautical meteorological information for aeronautical purposes only, taking into account existing ICAO provisions and WMO Resolution 40, and appreciating that the cost for the provision of aeronautical meteorological service was entirely recoverable from aviation;

x) formulated a draft Amendment 77 to Annex 3/Technical Regulations [C.3.1] and consequential amendments to Annex 11, PANS-ABC and PANS-ATM, taking into account the discussions under Agenda Items 1 to 5; and

y) recommended that ICAO, in coordination with WMO, undertake a restructuring of Annex 3/ Technical Regulations [C3.1] and the development of a *Procedures for Air Navigation Services — Meteorology* (PANS-MET, Doc xxxx); this restructure would be done as part of Amendment 78 to Annex 3, in view of the need for a clear distinction between functional and performance requirements and the elaboration of those requirements through technical specifications.

4.3 To allow a greater involvement of the AFI region in the activities of future expert groups proposed by the MET/14, the MET/SG meeting formulated the following draft Conclusion:

Draft Conclusion 12/02 Participation in the activities of the future Expert Group on the implementation of MET related SWIM Activities

That, AFI States be encouraged to participate in the activities of the future Expert Group on the implementation of the system wide information management (SWIM) in the MET field.

AGENDA ITEM 5: Status of implementation of the work programmes of the APIRG MET Sub-group (MET/SG), AFI OPMET Management Task Force (AFI MTF) and ATM-MET/TF as assigned by APIRG

5.1 The MET/SG meeting recalled that Decision EO/03 of APIRG Extraordinary meeting (APIRG/EO) called for the APIRG contributory bodies including the MET/SG to "*continue to implement the work programmes as previously endorsed by APIRG; and carry out necessary action to facilitate the operationalization of the new organizational structure and working methods of the APIRG, including reformulation of existing activities that continue to have relevance, into the projects management formats, to be presented for endorsement by the next meeting of the Group*." In this regard, the Sub-group reviewed the status of implementation of the work programmes of the MET/SG and associated Task Forces including:

- ✓ the status of implementation of the AFI OPMET Management Task Force **(**MTF) work Programme,
- ✓ the status of implementation of the tasks and Terms of reference of the Air Traffic Management and Meteorology Task Force (ATM/MET/TF);
- ✓ Summary of recent and forthcoming developments to the WAFS and SADIS;
- ✓ air navigation deficiencies in the MET field;
- ✓ the status of implementation of APIRG/19 Decisions and Conclusions related to MET; and
- ✓ the status of implementation of the Meteorological Sub-Group (MET/SG) work programme.

Review of the status of implementation of the MTF work programme

5.2 In reviewing the status of implementation of the AFI OPMET Management Task Force (MTF) work programme, the MET/SG recalled that the MTF was established by the APIRG/16 meeting through Decision 16/54. The meeting further recalled that the work programme of the MTF was updated by the MET/SG/11 meeting through Decision 11/10.

5.3 The MET/SG further recalled that the MTF held its fifth meeting (MTF/5) in Nairobi from 4 to 5 July 2013 and formulated four decisions provided in the final report of the MTF/5. The report is available at the ICAO website at http://www.icao.int/ESAF/Pages/APIRG-SG-AFI-OPMET-5th(APIRG).aspx. The MET/SG reviewed and updated the status of implementation of the MTF/5 Decisions listed in **Appendix 5A** to this report.

5.4 Based on the status of implementation of the MTF/5 Decisions, the MET/SG reviewed and updated the status of implementation of the MTF work programme given in **Appendix 5B** to this report, to be considered in updating the MET/SG work programme. In this regard, the MET/SG formulated the following Decision:

Decision 12/03: Status of Implementation of the MTF Work Programme

That, the information given in Appendix 5B to this report, is endorsed as the Status of Implementation of the work programme of the AFI OPMET Management Task Force (MTF) to be considered in updating the MET/SG work programme.

Review of the status of implementation of the tasks and TORs of the ATM/MET/TF

5.5 The MET/SG recalled that Conclusion 18/13 of APIRG/18 meeting established the AFI Air Traffic Management and Meteorology Task Force (AFI ATM/MET/TF) with initial TORs and work programme. The MET/SG noted that the AFI ATM/MET/TF held its first meeting in Nairobi, Kenya, from 10 to 11 June 2013 and submitted an amendment of its TORs and work programme to the MET and ATM/AIM/SAR Sub-groups. The MET/SG was informed that the amendment proposal submitted by ATM/AIM/SAR SG to APIRG was endorsed by APIRG through Conclusion 19/20 of the APIRG/19 meeting.

5.6 The MET/SG meeting noted that during the first meeting of the ATM/MET/TF (June 2013, Nairobi), four decisions were formulated, the final report of which is available at the following ICAO website http://www.icao.int/WACAF/Pages/AFI-PLANNING-AND-IMPLEMENTATION-REGIONAL-GROUP-(APIRG).aspx. The MET/SG meeting reviewed and updated the status of implementation of the ATM/MET/TF/1 Decisions listed in **Appendix 5A** to this report.

5.7 On the basis of the said status of implementation of the ATM/MET/TF/1 Decisions, the MET/SG reviewed and updated the status of implementation of the ATM/MET/TF work programme given in **Appendix 5C** to this report. **T**he MET/SG therefore, formulated the following Decision:

Decision 12/04: Status of Implementation of the ATM/MET/TF Work Programme

That, the information given in Appendix 5C to this report, is endorsed as the Status of Implementation of the work programme of the AFI Air Traffic Management and Meteorology Task Force (AFI ATM/MET/TF) to be considered in updating the MET/SG work programme.

Summary of recent and forthcoming developments to the SADIS

5.8 The SADIS Provider State (UK), presented the MET/SG meeting with developments to the SADIS since the MET/SG/11 meeting (8-10 July 2013, Nairobi, Kenya). The Sub-group noted that the Satellite Distribution System Operations Group (SADISOPSG) held its 19th meeting from 27 to 29 May 2014 the report of which is available at the SADISOPSG website: http://www.icao.int/safety/meteorology/sadisopsg/Pages/default.aspx.

5.9 The MET/SG noted that the Meteorological Divisional Meeting in July 2014 (MET/14) recommended that the SADIS 2G service be extended beyond 2015, but not beyond November 2019. The MET/SG further noted that, following a later development, the satellite currently used for SADIS 2G would be replaced in 2016 and would therefore not be capable of providing the current downlink parameters (frequency) used by SADIS 2G beyond July 2016. As such, the SADIS community would be required to decide if resources should be focused on migration of existing SADIS 2G users to Secure SADIS FTP by that date; or if work should be undertaken to migrate to new satellite downlink frequencies. The MET/SG meeting was informed that the ICAO regional offices in Dakar and Nairobi had forwarded SADIS Memo 97 (http://www.icao.int/safety/meteorology/sadisopsg/Memos/Memo-97.pdf), related to this matter, to AFI SADISOPSG Members (Côte d'Ivoire, Kenya, Senegal, South Africa and ASECNA) on 17 November 2014. The MET/SG reviewed the Memo and its attachments, and suggested to the AFI SADISOPSG Member States to respond to the above mentioned Memo before 5 December 2014.

5.10 The MET/SG noted that following the removal of WAFS Upper Air Forecasts in WMO GRIB Edition 1 code form from the WAFS portfolio, this dataset ceased to be made available via SADIS with effect from 14th November 2013. The MET/SG agreed that any user who is still unable to obtain and/or visualize WAFS Upper Air Forecasts in WMO GRIB Edition 2 code form, should contact the provider of their SADIS Workstation/Software as per Conclusion 18/40 of APIRG/18 meeting.

5.11 The MET/SG meeting further noted that WAFS Upper Air Forecasts for cumulonimbus (CB) cloud, icing and turbulence commenced distribution over SADIS 2G on 14th November 2013. In this regard, the MET/SG suggested that SADIS Users should contact their SADIS Workstation software

providers to ensure that the data can be accessed in accordance with Conclusion 18/40, item b) of APIRG/18 meeting.

5.12 The Sub-group meeting was made aware that WAFS Upper Air Forecasts for cumulonimbus (CB) cloud, icing and turbulence were made available in folders that no longer indicated that they were trial products, effective from 14th November 2013. The MET/SG noted that effective from 12 March 2014, both WAFCs were able to bring forward the availability of the GRIB2 cumulonimbus, icing and turbulence data, and that was routinely available by T+4:35 on Secure SADIS FTP, and by T+5:00 on SADIS 2G.

5.13 The MET/SG further noted that WAFS Upper Air data for FL410 was made available on SADIS 2G and Secure SADIS FTP as from 14th November 2013. In this regard, the Sub-group urged SADIS Users to contact their SADIS Workstation software providers to ensure that the data was accessible.

5.14 The Sub-group noted that in accordance with WAFSOPSG/8 Conclusion 8/7, the SADISOPSG had endorsed a proposal by the SADIS Provider to implement additional files/folders to provide traditional alphanumeric OPMET data at one (1) minute intervals, to be implemented with effect from 29 October 2014.

5.15 The MET/SG meeting noted that the current SADIS Gateway infrastructure (known as CoreMet) was almost obsolete and a mid-life upgrade project was being implemented to ensure its continued resilience and availability, as well as introducing greater capability. In this regard, the SADISOPSG/19 meeting endorsed the costs attributable to SADIS amounting to GBP 187,110.27 capitalized over a period of 5 years.

5.16 The Sub-group noted with appreciation that access to Internet based services (Secure SADIS FTP/WIFS) was implemented by the WAFC provider States. In this regard, the MET/SG meeting encouraged SADIS Users in the AFI region to apply for WIFS accounts for the backup/contingency in the rare event of a failure of SADIS. Details were available on the SADISOPSG Website http://www.icao.int/safety/meteorology/sadisopsg/SADIS%20User%20Guide/Obtaining%20access%20to%20WIFS%20as%20a%20backup%20to%20SADIS%20FTP.pdf. To encourage SADIS Users in the AFI region to establish and regularly test their backup accounts, the meeting agreed to take action on this regard.

Summary of recent and forthcoming developments to the WAFS

5.17 The WAFC London Provider State (UK) presented the MET/SG meeting with developments to the WAFS since the MET/SG/11 meeting (8-10 July 2013, Nairobi, Kenya). The Sub-group noted that the World Area Forecast Operations Group (WAFSOPSG) held its 8th meeting from 2 to 5 September 2013 the report of which is available through the following link:
http://www.icao.int/safety/meteorology/WAFSOPSG/Pages/default.aspx

5.18 The MET/SG noted that the WAFCs had produced a training module regarding the use of WAFS gridded CB, icing and turbulence forecasts. This guidance was provided via the internet with an English language voiceover. In addition, ICAO had provided PDF versions of the training module with the text translated into the following languages: Arabic, Chinese, English, French, Russian and Spanish. The training module and the related PDFs are supplemental to the existing guidance material 'Guidance on the Harmonized WAFS Grids for Cumulonimbus Cloud, Icing and Turbulence Forecasts' which is available at: http://www.icao.int/safety/meteorology/WAFSOPSG/Pages/GuidanceMaterial.aspx.

5.19 In this regard, the MET/SG meeting noted with appreciation that, in response to Conclusion 16/49 of APIRG 16 meeting, a training workshop on this guidance, was provided by ICAO regional office, Dakar, with advice from the WAFC London, to French speaking AFI States from 21 to 23 April 2014, in Niamey, under the kind invitation of the Republic of Niger.

5.20 The MET/SG meeting noted that WAFC London had made available (from 8th July 2014) verification data for WAFS GRIB2 CAT and CB. The information can be obtained from the "WAFC London Performance Indicators" webpage: http://www.metoffice.gov.uk/aviation/responsibilities/icao. The meeting was advised that the verification data should be used in conjunction with the guidance material mentioned above. The MET/SG meeting encouraged AFI States to obtain verification of WAFS data. The meeting then, agreed to take action on this regard.

5.21 The MET/SG meeting noted that WAFC Provider would continue to issue SIGWX forecasts in BUFR format using BUFR Edition 3and that there were no current plans to migrate to BUFR Edition 4.

5.22 With regard to the recent and forthcoming developments to the SADIS and WAFS summarized above, the MET/SG meeting formulated the following draft Conclusion:

Draft Conclusion 12/05: Action by AFI States to prepare for recent SADIS and WAFS developments

That,

a) AFI States are encouraged to regularly obtained information on the verification of WAFC London GRIB2 CAT and CB forecast data;

b) SADIS Users in the AFI region,

1) To contact their SADIS Workstation software provider to seek information regarding future updates and to take advantage of the enhancements including the provision of traditional alphanumeric OPMET data at 1 minute intervals

2) are encouraged to establish and regularly test backup accounts with the alternative provider to be used in the event that their normal service in accordance with the AFI ANP, is not available.

Air navigation deficiencies in the MET field

5.23 The MET/SG meeting recalled that the list of deficiencies in the MET field had been reviewed and updated based on the uniform methodology approved by the ICAO Council for identification, assessing, tracking and reporting of deficiencies of air navigation systems. In analysing the updated list of deficiencies in the MET field, the MET/SG meeting observed the following:

a) The deficiencies in the MET field, were identified in only 24 States visited;

b) Lack of certified **QMS** in 23 States/24 (Angola, Burundi, Cape Verde, Chad, Cameroon, Congo, Djibouti, Gambia, Ghana, Guinea, Guinea Bissau, Lesotho, Liberia, Mauritania, Niger, DRC, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Togo and Zambia);

c) Lack of use of quality WAFS products (no **SADIS** station) in 5 States/24 (Djibouti, Liberia, Nigeria (Kano), Sao Tome and Principe and Sierra Leone;

d) Lack of issuance of aerodrome forecasts (**TAF**) in 3 States/24 (Angola, Burundi and Sao Tomé and Principe;

e) Lack of issuance of aerodrome warnings (**AD WRND**) in 4 States/24 (Djibouti (Djibouti), Guinea (Conakry), DRC (Kinshasa) and Sao Tome and Principe (Sao Tome);

f) Lack of issuance of wind shear warnings and alerts (**WS WRND**) while experienced by aircrafts in 4 States/24 (Djibouti (Djibouti), Guinea (Conakry), DRC (Kinshasa) and Sao Tome and Principe (Sao Tome).

5.24 The meeting was apprised on developments with regard to implementation of QMS for MET service (QMS/MET) and was pleased to note that aerodromes of 17 ASECNA Member States under the

Agency's responsibility including that of the States listed under item b) above had been certified. Regarding issuance of TAF, Dakar RODB informed the meeting that TAF were being received from the States listed under item d) above. The MET/SG meeting then agreed that ASECNA and the concerned States should confirm the QMS certification and issuance of TAF respectively through letters to ICAO to enable updating the list of deficiencies accordingly.

5.25 In addition, the Sub-group meeting noted the following MET deficiencies collected from other sources:

a) Lack of issuance of **SIGMET:** 6 MWOs/28 have never issued any SIGMET during AFI SIGMET Tests: (Angola (Luanda), Ethiopia (Addis Ababa), Namibia (Windhoek), Tanzania (Dar Es Salaam), Zambia (Lusaka) and Zimbabwe (Harare) – *Source: 2013 SIGMET TEST report*);

b) AFI Meteorological Bulletins Exchange (**AMBEX**) scheme not fully implemented (Availability of AFI METAR and TAF at Dakar RODB during 3ird quarter of 2014): TAF – 79,51% (ESAF – 76,13% and WACAF – 82,88%), METAR – 51,66% (ESAF -48,05% and WACAF – 55,27%); *source: DAKAR RODB OPMET monitoring on 30 September 2014*);

c) **ATIS** not implemented: 0/17 (Angola, Cameroon, Congo, Côte d'Ivoire, Gabon, Ghana, Guinea, Kenya, Madagascar, Nigeria, Uganda, Senegal, Tanzania, Zambia and Zimbabwe); *Source: AFI ANP Table AOP/1)*

d) Lack of implementation of **HF VOLMET**: 0/2 (Congo and Madagascar). *Source: AFI ANP Table ATS/2.*

5.26 Regarding item b) above, the meeting agreed that statistics on availability of OPMET data should be presented using the following thresholds: above 97% , between 50% and 97% and below 50%. The meeting noted that Dakar RODB does not make distinction in the statistics between the exchange of amended TAF and regular TAF and also between AOP aerodromes and non-AOP aerodromes.. The MET/SG meeting then suggested that RODB Dakar corrects its software accordingly.

5.27 The MET/SG agreed that all remaining AFI States should be visited to update the list of air navigation deficiencies in the MET field, and that the States with such deficiencies should endeavor to get them removed through establishing corrective action plans. The MET/SG then formulated the following Draft Conclusion:

Draft Conclusion 12/06: Action Plan to remove air navigation deficiencies in the MET field

That,

a) ICAO Regional Offices in Dakar and Nairobi, update the air navigation deficiencies in the MET field in the remaining non-visited AFI States; and

b) Concerned AFI States endeavour to establish and implement an action plan aims at removing air navigation deficiencies in the MET field.

Status of implementation of APIRG/19 Decisions and Conclusions related to MET

5.28 The MET/SG meeting recalled that its updated work programme was endorsed by the APIRG/19 meeting through Decision 19/46. The meeting further recalled that the MET/SG/11 formulated decisions which were provided in the final report available through the following link http://www.icao.int/WACAF/Pages/METEOROLOGY-SUB-GROUP-TENTH-MEETING-(MET-SG-11).aspx. The MET/SG further recalled that APIRG/19 formulated MET related four (4) Conclusions and two (2) Decisions. The MET/SG meeting reviewed the status of implementation of the MET related APIRG/19 Conclusions and Decisions, MTF/5, ATM/MET/TF/1 and MET/SG/11 Decisions listed in **Appendixes 5A** to this report.

5.29 In reviewing **Appendix 5A,** the MET/SG recalled that APIRG/19 meeting agreed that the AFI transition plan for table-driven data representation (XML/GML) should be developed after the MET Divisional meeting scheduled for July 2014. The meeting noted that the MET/14 proposed a global transition plan for table-driven data representation (XML/GML) for METAR/SPECI, TAF and SIGMET as given in **Appendix 5D** to this report. The MET/SG further recalled that Conclusion 19/44 of APIRG/19 called for the development of capabilities of handling OPMET information in digital format by inviting Dakar and Pretoria RODBs to:

"a) start developing capability of handling OPMET data in digital format as soon as possible, after November 2013;

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."

5.30 In this regard, the MET/SG agreed to submit to APIRG/20, the proposed transition plan for the table-driven data representation (XML/GML) in the AFI region given at **Appendix 5E** to this report. The Sub-group consequently formulated the following draft Conclusion:

Draft Conclusion 12/07: Transition Plan for handling OPMET Information in Digital Format in the AFI region

That, the information given in Appendix 5E to this report, is endorsed as the Transition Plan for handling OPMET Information in Digital Format in the AFI region.

5.31 For a better understanding and involvement of AFI States in the implementation of the transition plan, the MET/SG meeting agreed that AFI States would need to develop capability of handling OPMET data in digital format. In this regard, the meeting agreed that it would be desirable to conduct training for the personnel of the AMBEX units in the region, thus the MET/SG formulated the following draft conclusion:

Draft Conclusion 12/08: Training Seminars to develop capability building for handling OPMET data in digital format in the AFI region

That the WMO, in coordination with ICAO, assist AFI States in implementing OPMET Information exchange in Digital format by conducting regional training seminars and workshops in view of:

a) increasing awareness of users of the AFI Meteorological Bulletin Exchange (AMBEX) units, in the exchange of OPMET data in digital format; and

b) **expediting the implementation of the AFI Transition Plan for handling OPMET Information in Digital Format.**

5.32 The MET/SG recalled that Decisions 11/04 and 11/06 of the MET/SG/11 meeting, called for the updating of the AFI regional SIGMET Guide and AMBEX Handbook, respectively by the Secretariat.

5.33 The meeting noted that based on a template of regional SIGMET Guide developed by the former MET Section at ICAO HQ, the Secretariat developed a new edition of the AFI regional SIGMET Guide given in **Appendix 5F** to this report. The meeting reviewed and updated the new edition. The AMBEX Handbook given in **Appendix 5G** was also amended by the Secretariat as called for by Decision 11/06 of MET/SG/11. In addition, the MET/SG noted that during the AMBEX implementation training workshop conducted in Dakar, from 18 to 20 Marc 2014, the workshop suggested to add the communications main flow chart and the AFI routing Tables to the AMBEX Handbook. Furthermore, the

MET/SG meeting was presented with a proposal to include OPMET bulletins exchange programs of the National OPMET Centres (NOC) in the AMBEX Handbook.

5.34 In this regard, the MET/SG meeting reviewed and agreed to submit to the APIRG/20 meeting both the draft amendments of the AFI SIGMET Guide and the AMBEX Handbook presented in **Appendixes 5F and 5G** to this report respectively. The meeting then formulated the following draft decision:

Draft Decision 12/09: Updating the AFI regional SIGMET Guide and AMBEX Handbook

That, the documents given at:

a) Appendix 5F to this report, is endorsed as the 10th edition of the AFI regional SIGMET Guide; and

b) Appendix 5G to this report, is endorsed as the updated AMBEX Handbook, 7th Edition – Amendment 4.

Status of implementation of the MET/SG work programme

5.35 Based on the reviewed air navigation deficiencies in the MET field mentioned above, the summary of recent and forthcoming developments to the WAFS and SADIS, the status of implementation of the Decisions/Conclusions and work programmes of the MET/SG, MTF and ATM/MET/TF, the MET/SG prepared a status of implementation of the work programme of the MET/SG given in **Appendix 5H** to this report. In this regard, the MET/SG formulated the following draft Decision:

Draft Decision 12/10: Status of Implementation of the MET/SG Work Programme

That, the information given in Appendix 5H to this report, is endorsed as the Status of Implementation of the Work Programme of the AFI Meteorological Sub-Group (MET/SG) to be considered in the work programme of the new APIRG Infrastructure and Information Management Sub-group (IIM/SG).

AGENDA ITEM 6: Linkage of remaining tasks of the MET/SG with Aviation System Block Upgrades (ASBU) Modules B0 and Regional Performance objectives for MET

6.1 The MET/SG meeting noted that APIRG/19 meeting adopted the Air Navigation System Implementation Action Plan for the Africa and Indian-ocean (AFI) region, which establishes the prioritization of Aviation System Block Upgrades (ASBU) Block0 Modules, proposes the Air Navigation Report Forms (ANRFs) and defines the performance-based planning framework for the AFI region.

Categorization of ASBU Block-0 Modules for the AFI Region

6.2 The Sub-group meeting further noted that the Global Air Navigation Plan (Doc 9750, GANP) was developed to assist States and regional planning and implementation groups in identifying the most appropriate operational improvements to achieve near- and medium-term benefits on the basis of current and foreseen aircraft capabilities and ATM infrastructure and that the Global Air Traffic Management Operational Concept (Doc 9854) provided the overall vision of a performance based ATM system.

6.3 The MET/SG recalled that ASBU blocks are defined in the 4th edition of the GANP (Doc 9750) as follows:
Block0: modules available from 2013 to 2018,
Block1: modules to be available from 2018 to 2023,
Block2: modules to be available from 2023 to 2028, and
Block3: from 2028.

6.4 The Sub-group noted that modules related to MET are in the Performance Improvement Area 2, "*Globally Interoperable Systems and Data - Through Globally Interoperable System Wide Information Management"* and are defined as follows:

- ✓ **B0-AMET**: Improved Meteorological Information Module: Meteorological information supporting enhanced operational efficiency and safety;
- ✓ **B1-AMET:** Enhanced Operational Decisions through Integrated Meteorological Information; and
- ✓ **B3-AMET:** Enhanced Operational Decisions through Integrated Meteorological Information.

6.5 The MET/SG meeting was informed that the module categorization developed by APIRG/19 in the AFI Air Navigation System Implementation Action Plan, aims at ranking each module in terms of implementation priority. On the basis of operational requirements and taking into benefits associated, AFI region has chosen all 18 Block-0 Modules for implementation. The categories of 18 Block 0 modules are defined by APIRG/19 in **Appendix 6A** to this report as follows:

a) **Essential (E)** category: These are the ASBU modules that provide substantial contribution towards global interoperability, safety or regularity. The five (5) Modules for all States of AFI region are FICE, DATM; ACAS, FRTO and APTA

b) **Desirable (D)** category: These are the ASBU modules that, because of their strong business and/or safety case, are recommended for implementation almost everywhere. The eight (8) Modules for all States of AFI region are ACDM, NOPS, ASUR, SNET**, AMET,** TBO, CDO, and CCO

c) **Specific (S)** category: These are the ASBU modules that are recommended for implementation to address a particular operational environment in specific countries of AFI region (for example South Africa). The (3) Modules are OPFL, ASEP and WAKE.

d) **Optional (O)** category: These are the ASBU modules that address particular operational requirements in specific countries of AFI region and provide additional benefits that may not be common everywhere. The two (2) Modules are SURF and RSEQ.

Prioritization of ASBU Block-0 Modules for the AFI Region

6.6 The MET/SG meeting noted that APIRG/19 meeting defined two (2) module priorities which allocation is based on the following criteria.

- ✓ **Priority-1**: immediate implementation;
- ✓ **Priority-2**: recommended implementation.

6.7 Although AFI region has categorized all 18 Block-0 modules for its implementation, only 9 Modules will have priority-1 as it covers most of the AFI States. Remaining Modules are priority-2 and applies to only specific State (s) of AFI region. The list of Block-0 modules is provided in **Appendix 6B** to this report, with the allocated priority for implementation within the AFI Region.

Air Navigation Report Forms

6.8 The meeting noted that the Air Navigation Report Form (ANRF), a revised version of the Performance Framework Form (PFF), is a customized tool for ASBU modules which is recommended for application for setting planning targets, monitoring implementation, identifying challenges, measuring implementation/performance and reporting.

6.9 The MET/SG meeting further noted that the expectations/benefits to the ATM community are referred to eleven (11) Key Performance Areas (KPAs):- access/equity; capacity; cost effectiveness; efficiency; environment; flexibility; global interoperability; participation of ATM community; predictability; safety; and security. The meeting noted that out of these 11 KPAs, for the present, only five have been selected for reporting through ANRF, which are Access & Equity, Capacity, Efficiency, Environment and Safety.

6.10 The Sub-group meeting was informed that KPAs applicable to respective ASBU modules have been identified by marking Y (Yes) or N (No) against them. The Sub-group reviewed the proposed ANRF related to B0-AMET in the AFI Air Navigation System Implementation Action Plan, as indicated in **Appendix 6C** to this report, based on ASBU module B0-AMET elements (GANP, Doc 9750) and on the remaining tasks of the MET/SG. In this regard, the MET/SG formulated the following draft conclusion:

Draft Conclusion 12/11: AFI Air Navigation Report Form (ANRF) for B0-AMET Module

That, the information given in Appendix 6C to this report, is endorsed as the updated Air Navigation Report Form (ANRF) for ASBU B0-AMET module in the AFI region.

Performance-based Planning Framework in the AFI Region

6.11 The MET/SG meeting noted that APIRG/19 aligned the performance-based approach for regional and national air navigation planning in the AFI Region adopted by the Special Regional Air Navigation Meeting (Durban, South Africa, November 2008), with the GANP (Doc 9750).

6.12 The MET/SG meeting further noted that several other ICAO documents were available to support the planning process including the Manual on Air Traffic Management System Requirements (Doc 9882) which converted the overall vision of the operational concept into material specifying the functional evolution of ATM,

and the Manual on Global Performance of the Air Navigation System (Doc 9883) which provided a broad overview of the tasks that needed to be undertaken to transition to such a system.

6.13 The Sub-group meeting also noted that the APIRG uses the performance framework forms (PFFs) developed by the ICAO Special AFI RAN of 2008 as amended from time to time through the regional planning process, to identify individual parties responsible for achieving the performance objectives as well as to establish timeframes for implementation. As indicated in the AFI Air Navigation System Implementation Action Plan, these PFFs need to be reviewed and aligned with the ICAO ASBU Block-0 modules. Therefore, based on the elements of the AFI ASBU B0-AMET ANRF in Appendix 6C, the MET/SG proposed an amendment to the AFI PFFs as given in **Appendix 6D** to this report. In this regard, the meeting formulated the following draft conclusion:

Draft Conclusion 12/12: AFI Performance Framework Form (PFFs) for B0-AMET Module

That, the Performance Framework Forms (PFFs) given in Appendix 6D to this report, are endorsed as the PFFs for ASBU B0-AMET module in the AFI region.

Relationship between MET related AFI PFFs and ASBU B0-AMET

6.14 The Sub-group meeting noted that ASBU module Block0-AMET (B0-AMET) is defined in the GANP (Doc 9750) to be a Global, regional and local meteorological information provided by world area forecast centres, volcanic ash advisory centres, tropical cyclone advisory centres, aerodrome meteorological offices and meteorological watch offices in support of:

- ✓ flexible airspace management;
- ✓ improved situational awareness and collaborative decision-making; and
- ✓ dynamically optimized flight trajectory planning.

6.15 The MET/SG further noted that aeronautical meteorology (MET) is a thread running through ASBU performance improvement area titled "Globally Interoperable Systems and Data" and that, through future system-wide information management (SWIM), MET information would be a key enabler to the realization of a globally harmonized, interoperable air traffic management system. Therefore, Recommendation 1/1 of MET/14 approved by ICAO Air Navigation Commission (ANC), called for updating the GANP and ASBU methodology to reflect ASBU MET module dependencies on other modules. The Sub-group further noted that MET/14 provided a list of non-MET specific ASBU modules (*Appendix B to MET/14-IP/1*) given in **Appendix 6E-1**, where aeronautical MET service will be of relevance.

6.16 Based on the information given in **Appendix 6E-1** above and the updated PFFs given in **Appendix 6D** to this report, the MET/SG meeting suggested to update Appendix C of the Air Navigation System Implementation Action Plan proposed by APIRG/19 meeting, given in **Appendix E** to this paper. In this regard, the Sub-group formulated the following draft decision:

Draft Decision 12/13: Relationship between ASBU B0-AMET and MET related Performance Framework Form (PFFs) in the AFI Region

That, the updated Table given in Appendix 6E to this paper, is endorsed as the relationship between ASBU B0-AMET and MET related Performance Framework Form (PFFs) in the AFI region.

6.17 The meeting was presented with the status of implementation of the BO-AMET module by ASECNA and proposed actions for further implementation. Following the review of the report, MET/SG meeting formulated the following Decision:

Draft Decision 12/14: Implementation Status of Module B0-AMET in ASECNA Member States

That the meeting:

a) congratulates ASECNA for ongoing actions in the implementation of the ASBU module B0-AMET; and

b) encourages the Agency in its efforts in implementing AFI air navigation system implementation Action Plan.

AGENDA ITEM 7: Identification and development of Projects based on ASBU B0-AMET and Regional Performance objectives.

Review and Update of the MET related Tasks of the IIM/SG

7.1 The MET/SG meeting recalled that the APIRG/EO meeting established transitional arrangements to give effect to the new APIRG organizational structure and working methods as well as implantation of the existing regional objectives under the new methodology.

7.2 Based on the remaining tasks of the MET/SG work program, the ASBU B0-AMET elements and the AFI regional performance objectives in the MET field given respectively in **Appendixes 5H, 6C and 6D** to this report, the Sub-group reviewed and adopted the draft amendment of the MET related Tasks of IIM/SG given at **Appendix 7A** to this report. In this regard, the group formulated the following draft Decision:

Draft Decision 12/15: Updating the MET related Tasks of the IIM/SG

That, the updated information given in Appendix 7A to this report, is endorsed as the MET related Tasks of the Infrastructure and Information Management Sub-Group (IIM/SG).

Identification and development of MET related APIRG Projects

7.3 The following two Performance Framework Forms (PFF) for the ASBU module B0-AMET, were identified by the MET/SG meeting, to be included in the MET projects management formats of the IIM/SG:

a) **AFI B0-AMET PFF-1**: the implementation of SIGMET and QMS in the AFI region; and

b) **AFI B0-AMET PFF-2**: the implementation of terminal area warnings and forecasts, provision of WAFS forecasts and optimization of OPMET data exchanges in the AFI region.

7.4 Based on the above PFFs, the MET/SG agreed on MET related APIRG Projects given in **Appendix 7B** to this report. In this regard, the meeting formulated the following draft Conclusion:

Draft Conclusion 12/16: Aeronautical Meteorology Projects in the AFI region for the period 2015 to 2018

That, the information given in Appendix 7B to this paper, is endorsed as the Aeronautical Meteorology (MET) Projects in the AFI region for the period 2015 to 2018.

7.5 A presentation on Project Management overview was delivered to the MET/SG meeting. It was intended that the information would assist in delivering successful projects on time.

AGENDA ITEM 8: Review of the New Structure of the AFI regional air navigation plan (AFI ANP) and development of draft material for endorsement by APIRG.

8.1 The MET/SG meeting noted that the twelfth Air Navigation Conference (AN-Conf/12) adopted Recommendation 6/1 [*Regional performance framework – planning methodologies and tools*] regarding the alignment of regional air navigation plans (ANPs) with the fourth edition of GANP (Doc 9750) requesting States and PIRGs including APIRG to:

"…….

b) *finalize the alignment of regional air navigation plans with the Fourth Edition of the Global Air Navigation Plan by May 2014;*

c) *focus on implementing aviation system block upgrade Block 0 Modules on the basis of operational requirements, recognizing that these modules are ready for deployment;*

d) *use the electronic regional air navigation plans as the primary tool to assist in the implementation of the agreed regional planning framework for air navigation services and facilities*

e) *involve regulatory and industry personnel during all stages of planning and implementation of aviation system block upgrade modules*

f) *develop action plans to address the identified impediments to air traffic management modernization as part of aviation system block upgrade planning and implementation activities*

……."

8.2 The MET/SG meeting further noted that ICAO Secretariat consequently, established an Ad-hoc working group (eANP WG), composed of a representative from each Regional Office and ICAO Headquarters, to make proposals for changes to the regional ANPs which included the development of a new structure, format and content of the ANP.

8.3 The eANP WG reviewed the limitations of the current regional ANPs and agreed that they could be updated and approved based on the new developments in air navigation, including the outcome of the AN-Conf/12 and the GANP.

8.4 The MET/SG meeting was then briefed on the following aspects of the eANP approved by the Council including:

1. *Objective and purpose of regional air navigation plans (ANPs)*
2. *Format and Table of Contents of the ANP*
3. *Description of the contents of the eANP*
4. Procedures for amendment of the eANP ;

8.5 The MET/SG meeting was appraised that:

a) Volume I would contain stable plan elements, the amendment of which require approval by the Council, related to:
   - ✓ assignment of responsibilities;
   - ✓ mandatory requirements subject to regional agreement; and/or
   - ✓ additional requirements specific to the region which are not covered in SARPs.

b) Volume II would contain dynamic plan elements, the amendment of which does not require approval by the Council (approval is by regional agreement involving the relevant

PIRG), related to:

- ✓ assignment of responsibilities;
- ✓ mandatory requirements subject to regional agreement; and/or
- ✓ additional requirements specific to the region which are not covered in SARPs.

c) Volume III would contain dynamic/flexible plan elements providing implementation planning guidance for air navigation systems and their modernization taking into consideration emerging programmes such as the ASBUs and associated technology roadmaps described in the GANP. The ANP Volume III would also include appropriate additional guidance, particularly with regard to implementation, to complement the material contained in the ANP Volumes I and II. The amendment of Volume III would not require approval by the Council (approval of Part II is under the responsibility of the relevant PIRG). The information contained in Volume III would be related to implementation monitoring, planning and/or guidance. The structure of Volume III would be kept simple, consisting of:

a) Part 0 – Introduction;
b) Part I – General Planning Aspects (GEN); and
c) Part II – Air Navigation System Implementation.

8.6 The MET/SG meeting noted that the development/approval of the eANP would be in accordance with the following action plan:

ANP volume	eANP activity/task	Responsible	Completion date
Vol I, II & III	Population of eANP with existing data Completed	Regional Offices	September 2014
Vol I, II & III	Agreement on the content of the eANP	PIRGs/States	Mid 2015
Vol I	Approval of Volume I of eANPs by	Regional Offices/ANB	End 2015
Vol II	Approval of Volume II of eANPs by regional agreement involving the relevant PIRG	Regional Offices/PIRGs	End 2015
Vol III	Development and approval of Part II under PIRG responsibility. Inclusion of Volume III on web-based platform.	Regional Offices/ PIRGs/ANB	End 2015
Consequential amendments	Amendments to existing ICAO documentation related to ANPs to ensure harmonization, including the Regional Office Manual, and review of the applicability of the Uniform methodology for the identification, assessment and reporting of air navigation deficiencies to the new ANP	ANB	Mid 2015

8.7 Based on the Work plan and template endorsed by the Council, the ICAO offices of Dakar and Nairobi populated the MET part of the template (Part V) for AFI as follows;

i) AFI BASIC VOLUME I
   a. Text (provided **Appendix 8A**)
   b. Table MET I-1, State Volcano Observatories, (provided at **Appendix 8B**)

ii) AFI VOLUME II MET
   a. Text (provided at **Appendix 8C**)
   b. Table MET II-1, Meteorological Watch Offices, (provided at **Appendix 8D**)
   c. Table MET II-2, Aerodrome Meteorological Offices,(provided at **Appendix 8E**)
   d. Table MET II-3, VOLMET broadcasts (provided at **Appendix 8F**)

8.8 In the light of the foregoing, the MET/SG meeting formulated the following draft decision:

Draft Conclusion 12/17: Contents of the MET part of the New AFI eANP

That, the information contained in Appendixes 8A, 8B, 8C 8D, 8E and 8F, is endorsed as the contents of Volumes I and II, Part V (MET) of the AFI eANP and be implemented by States.

8.9 The MET/SG meeting was informed that the template for Volume III was still under development. In this regard, the meeting formulated the following.

Draft Decision 12/18: Population of Volume III of the MET part of AFI eANP

That, Dakar and Nairobi regional offices should complete populating Volume III Part V (MET) of the AFI eANP before APIRG/20 meeting, once the template is developed.

AGENDA ITEM 9: Any other business

9.1 The MET/SG meeting was appraised of activities of the Cooperative Development of aeronautical meteorology Programme in the AFI region (CODEVMET-AFI). The MET/SG was informed that CODEVEMET-AFI was a cost sharing programme that aims at enhancing AFI States capability in carrying out safety oversight functions of the aeronautical meteorological service providers, and providing, on request, trainings that would assist States to achieve compliance with relevant aviation safety standards. A copy of the State Letter providing detailed information on the programme outcome, earlier forwarded to AFI States, was distributed to the participants in the MET/SG meeting.

9.2 The MET/SG meeting was also informed with appreciation that the East African School of Aviation(EASA) in Nairobi, Kenya had introduced a MET inspectors course in its programme.

9.3 The meeting was briefed on the WMO Aircraft Meteorological Data Relay (AMDAR) Regional Implementation Programme for Africa. The meeting noted that a workshop targeting African Meteorological services and Airlines, was planned to take place in Morocco and or in Kenya in early 2015.

9.4 There being no other business, the vice chairperson thanked all participants and closed the meeting on 5 December 2014 at 1630 hours.