



Fifth Meeting of the APIRG Infrastructure and Information Management Sub-group (IIM/SG5)

(Virtual, 26 – 29 July 2022)

Report

Prepared by the Secretariat

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LIST OF ABBREVIATIONS

AANDD	AFI Air Navigation Deficiencies Database
AAO/SG	APIRG Airspace and Aerodrome Subgroup
AFCAC	African Civil Aviation Commission
AFI	Africa and Indian Ocean
AFI VACP	AFI Volcanic Ash Contingency Plan
AFI VOLCEX OPINS	AFI Volcanic Ash Exercise Operational Instructions
AFTN	Aeronautical Fixed Telecommunication Network
AIDC	Air Traffic Services Inter-Facility Data Communication
AIM	Aeronautical Information Management
AIXM	Aeronautical Information Exchange Systems
AMET	Advanced Meteorological Information
AMHS	Aeronautical Message Handling System
ANS	Air Navigation Service
ANSP	Air Navigation Service Provider
APCC	APIRG Projects Coordination Committee
APIRG	AFI Planning and Implementation Group
ASBU	Aviation System Block Upgrades
ASECNA	Agency for Aerial Navigation Safety in Africa and Madagascar
ATU	African Telecommunication Union
AUC	African Union Commission
AU	African Union
BBB	Basic Building Block
CAA	Civil Aviation Authority
CBA	Cost Benefit Analysis
CNS	Communication Navigation Surveillance
CODEVMET-AFI	Cooperative Development of Aeronautical Meteorological Service in the AFI Region
DAIM	Digital Aeronautical Information Management
ESAF	Eastern and Southern African
FIRs	Flight Information Regions
FSMP	Frequency Spectrum Management Panel
GCAA	Ghana Civil Aviation Authority
GANP	Global Air Navigation Plan
GNSS	Global Navigation Satellite System
HQ	Headquarters

IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IIM/SG	Infrastructure and Information Management Sub-Group
ITU	International Telecommunication Union
ITU WRC	International Telecommunication Union World Radiocommunication Conference
KCAA	Kenya Civil Aviation Authority
MET	Aeronautical Meteorology
MoU	Memorandum of Understanding
NCPI	National Coordinator for Planning and Implementation
NCLB	No Country Left Behind
PBN	Performance Based Navigation
PBCS	Performance Based Communication and Surveillance
RASG-AFI	AFI Regional Aviation Safety Group
RASG-AFI SSTs	AFI Regional Aviation Safety Group - Safety Support Teams
RDI	Research, Development and Innovation
RODB	Regional OPMET Data Bank
SANSA	South Africa National Space Agency
SAR	Search and Rescue
SARP	Standards and Recommended Practices
SAWS	South African Weather Service
SBAS	Satellite-based Augmentation System
SSTs	Safety Support Teams
TAC	Traditional Alphanumeric Code
WACAF	Western and Central African
WATRA	West African Telecommunication Regulators' Association
WRC	World Radiocommunication Conference
VoIP	Voice over Internet Protocol

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LIST OF CONCLUSIONS AND DECISIONS

Reference of draft Conclusion /Decision	Title of draft Conclusion /Decision
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<i>Draft Conclusion 5/16</i>	<i>Update of the AFI Navigation strategy</i>
<i>Draft Conclusion 5/17</i>	<i>Support of the AUC to the implementation of SBAS in the AFI Region</i>
<i>Draft /Decision 5/18</i>	<i>Future Work Programme of APIRG IIM/SG for 2022/2023</i>

PART I – HISTORY OF THE MEETING

1. Introduction

- 1.1. The fifth meeting of the APIRG Infrastructure and Information Management Sub-Group (IIM/SG5) was held virtually from 26 to 29 July 2022.
- 1.2. The Sub-Group records the outcomes of its meetings in the form of Conclusions and Decisions with the following significance:
 - a) Conclusions deal with the matters which, in accordance with the Group's terms of reference, merit directly the attention of States for further actions to be undertaken in accordance with established procedures; and
 - b) Decisions deal with matters of concern only to the APIRG and its subsidiary bodies.

2. Objectives

- 2.1. The objectives of the meeting were to discuss amongst others, actions to further facilitate regional planning and implementation activities, the AFI Air Navigation Plan, Air Navigation Deficiencies in AIM, CNS and MET areas, the status of the implementation APIRG Projects as well as ASBU Elements.

3. Attendance

- 3.1. The meeting was attended by two hundred twenty-six (226) participants from thirty-eight (38) States, and Organizations such as ASECNA, ATNS, GCAA (Ghana), KCAA, SAWS, SANSA, IATA, and the ICAO ESAF and WACAF Regional Offices.
- 3.2. The list of participants is provided at Appendix 1

4. Officers and Secretariat

- 4.1. The meeting was chaired by Ms. Anne Njeri Gitau (Kenya) and Mr. Issoufou Abdoulaye (Niger) respectively as Chairperson and Vice Chairperson of the Subgroup.
- 4.2. Mr. Goama Ilboudo Regional Officer, MET from the ICAO WACAF Regional Office served as the Secretary of the meeting with the support of Ms. Chinga Mazhetese and Mr. Harvey Gabriel Lekamisy, Regional Officer ENV/MET and Regional Officer, CNS respectively, both from the ICAO ESAF Regional Office, and Mr. François Xavier Salambanga and Mr. Fanfé Bamba, Regional Officer CNS and Regional Officer, AIM respectively from ICAO WACAF Regional Office.

5. Working language

- 5.1. The meeting was conducted in the English and French languages with simultaneous interpretation.

6. Opening

- 6.1. Mr Prosper Zo'o Minto'o, the ICAO Regional Director for the ICAO Western and Central African (WACAF) Office and Secretary of the AFI Planning and Implementation Regional Group (APIRG) opened the meeting.
- 6.2. He extended his heartfelt appreciation to the various Administrations and Organizations for facilitating the participation of their experts in the meeting. He thanked Ms. Anne Gitau (Kenya)

and Mr. Issoufou Abdoulaye (Niger), Chairperson and Vice-Chairperson of the Sub-Group for their leadership and the support provided to the Subgroup during the past year.

6.3. The Regional Director reminded the meeting on various Conclusions and Decisions of the APIRG/24 meeting that called for actions, including coordination with the AAO Subgroup, with emphasis on the identification of the applicable ASBU elements as well as the development of the Volume III of the AFI eANP.

6.4. The Regional Director further acknowledged the support received from the stakeholders, particularly the industry who, through several initiatives and other assistance activities continue to collaborate with the ICAO Regional Offices on AIM, CNS and MET issues affecting the Region. He concluded with a call for States' commitment, towards making a difference in the the AFI Region and ultimately meeting the IIM/SG mandate.

7. Agenda

7.1. The meeting adopted the following agenda:

Agenda 1. Adoption of the Agenda and the Work Programme

1.1. Adoption of the agenda and the work programme

Agenda 2. Status of the implementation of Conclusions and Decisions of the IIM/SG4 Meeting and APIRG/24 Meeting applicable to the Sub-group.

Agenda 3. Achievements in AIM, CNS and MET

3.1. Status of implementation of applicable ASBU elements

3.2. Reporting on Planning and implementation by States and Stakeholders

3.3 Update of the AFI eANP

3.4. Other Air Navigation initiatives

Agenda 4. Air Navigation Deficiencies

Agenda 5. Activities to be coordinated with the RASG-AFI SSTs

Agenda 6. Proposed recommendations/actions to be taken by ICAO HQ

Agenda 7. Conclusions/Decisions of the Fifth Meeting of the Infrastructure and Information Management Sub-Group

Agenda 8. Review of the Terms of Reference and Work Programme of the Sub-Group

Agenda 9. Any other business

Agenda 10. Closing Ceremony

8. Summary of Draft Conclusions and Decisions

8.1. The Summary of draft Conclusions and Decisions is provided in Appendix 2 to this report

PART II REPORT ON THE AGENDA ITEMS

Agenda Item 1: Adoption of the Agenda and the Work Programme

1.1. Under this agenda item, the meeting discussed and adopted the draft agenda and the work programme proposed by the Secretariat.

Agenda Item 2: Status of the implementation of Conclusions and Decisions of the IIM/SG4 Meeting and APIRG/24 Meeting applicable to the Sub-group

2.1. Conclusions/Decisions of the Fourth Meeting of the Infrastructure and Information Management Sub-Group (IIM/SG4)

2.1.1. The meeting was informed that fifteen (15) out of the twenty (22) Conclusions and Decisions of the IIM/SG4 meeting were endorsed by the Sixth meeting of the APCC and submitted to the APIRG/24 meeting.

2.1.2. The meeting reviewed the status of the implementation of the seven (7) remaining Conclusions and Decisions that were approved by the IIM/SG4 and noted that four (4) out of the seven (7) Conclusions and Decisions were completed, two (2) were in progress and one (1) was not yet implemented as provided in Appendix 3. The meeting urged IIM Projects Teams and States to consider the outstanding IIM/SG Conclusions and Decisions that require their actions.

2.2. Review of the Conclusions and Decisions of the APIRG/24 Meeting applicable to IIM/SG

2.2.1. The meeting reviewed the status of the implementation of the APIRG/24 Conclusions and Decisions related to IIM/SG as detailed in Appendix 4 of this report.

2.2.2. The meeting noted that out of twenty-six (26) Conclusions and Decisions, eleven (11) were completed, fourteen (13) in progress and two (2) not yet started. The meeting acknowledged the challenges faced when implementing these Conclusions and Decisions and urged States/Organizations to embark on the effective implementation of the outstanding Conclusions and Decisions of the APIRG/24 and other previous meetings.

Agenda Item 3: Achievements in AIM, CNS and MET

3.1. Status of implementation of applicable ASBU elements

3.1.1. Under the agenda item 3.1, the meeting discussed the identification of ASBU elements applicable to the AFI region in the areas of AIM, MET and CNS, the collection of data on the implementation of ASBU elements, the status of implementation of ASBU elements, as well as challenges in the implementation of IIM/SG Projects. Common AIM, CNS and MET topics as well as the meeting outcomes were discussed in the plenary session, while technical matters were addressed in the breakout sessions.

Identification of ASBU elements applicable to AFI Region

3.1.2. The meeting recalled the twenty-fourth APIRG meeting outcomes, which tasked the AAO and IIM Subgroups, to identify the ASBU elements applicable to the AFI region. The

Secretariat provided the meeting with the background of the AFI Regional air navigation system implementation plan, presented the approach adopted in identifying the ASBU elements applicable to the region as well as results of the assessment conducted in fulfilling this assignment.

- 3.1.3. Clarification was provided on the sixth edition of the GANP concerning the various concepts of the ASBU framework, in particular the concept of ASBU Element. This concept represents a specific change in operations designed to improve the performance of the air navigation system under specified operational conditions.
- 3.1.4. The meeting noted that while the first version of the AFI Regional air navigation system implementation plan was Module-oriented, the focus should now be on the applicability of the ASBU elements. The meeting noted the approach used by the Secretariat in conducting the assessment of this applicability, consisting of a performance-based assessment. Furthermore, the meeting concurred that ASBU Elements that are essential and related to Standards and Recommended Practices (SARPs) should apply systematically to the region.
- 3.1.5. Details of the ASBU Elements applicability assessment in each area AIM, CNS and MET were discussed by the respective breakout sessions prior to the adoption by the meeting. The following draft Conclusion was therefore formulated accordingly.

Draft Conclusion 5/1 Adoption of the ASBU Elements applicable to the AFI Region

That;

In order to align the AFI Regional air navigation plan to the Sixth Edition of the GANP,

- a) The ASBU elements, as identified in the Appendices 5, 6, 7 to this report, are applicable to the AFI region; and***
- b) The Secretariat to finalize the development of the volume III of the AFI eANP for submission to APIRG/25.***

ASBU data collection tool and Status of implementation of applicable ASBU elements

- 3.1.6. The meeting recalled that the twenty-fourth meeting of APIRG recognized some challenges in collecting data from States through surveys. The Secretariat was therefore requested to explore other mechanisms as alternative to surveys for data collection in the region.
- 3.1.7. The meeting was informed on the initiative undertaken by the Secretariat to develop a framework to be used to collect data from States on the status of implementation of the ASBU elements. This process started with the design of an Excel based data collection template to be filled manually by States and forwarded to the ICAO Regional Offices for compilation. The template is in Appendix 8 to this report.
- 3.1.8. Furthermore, the meeting was informed that an online platform was under development, aiming to facilitate the collection of data and to automate the consolidation and generation of dashboards on ASBU implementation. The user interface of this platform would leverage the experience of the manual template.
- 3.1.9. The meeting was also provided with an overall presentation of the status of the implementation of the applicable ASBU Elements. The said information did not pretend to be accurate but is providing a rough idea of the status of implementation in the region.

3.1.10. The meeting urged States to use the Excel template to report the status of planning and implementation of ASBU Elements to the ICAO Regional Offices, through their National Coordinators for Planning and Implementation (NCPI), until the online platform is finalized. To that effect, the following draft conclusion was formulated.

Draft Conclusion 5/2 Collection of data and reporting on ASBU implementation

That;

To report on the status of implementation of ASBU elements, and to ensure continuous and regular reporting of the region:

- a) States, through their National Coordinators for Planning and Implementation (NCPI), to use the data collection template as presented in Appendix 8, to report on a quarterly basis to the ICAO Regional Offices, the status of planning and implementation of ASBU elements, effective from 31 October 2022, until the online platform is completed; and***
- b) The Secretariat to expedite the development of the online platform aiming to replace the Excel template for data collection and reporting.***

Challenges faced by the IIM/SG in the implementation of Projects.

3.1.11. The meeting discussed the challenges encountered by the IIM/SG in carrying out Projects development and implementation. Challenges include among others, the lack of States responses to survey questionnaire, the low level of support provided to the Projects Teams Coordinators and experts in inducting them on their roles as well as expectations, the lack of participation of designated experts from different States and the language barrier.

3.1.12. The meeting recognised the difficulties expressed by project teams in conducting their activities. The meeting agreed on the following Decision to address the challenges encountered by the IIM Projects Teams.

Draft Decision 5/3 Improvement of the effectiveness of the IIM/SG Projects

That;

In order to improve the effectiveness of the IIM/SG Projects,

- a) The Secretariat is urged to reinforce its coordination and support to Project Teams; and***
- b) The Secretariat, in coordination with States and Organizations, to review and update the list of Projects Team members by 30 September 2022.***

Alignment of the IIM/SG Projects to the 6th Edition of the GANP

3.1.13. The meeting discussed the alignment of IIM Projects with the 6th Edition of the GANP. In this regard, the meeting was informed that the GANP global technical level includes an Aviation System Block Upgrades (ASBUs) framework, with its associated performance

framework, which includes performance objectives through eleven (11) Key Performances Areas (KPAs) and nineteen (19) Key Performance Indicators (KPIs).

- 3.1.14. The meeting was also informed that the 6th edition of the GANP updated the ASBUs framework, which is consequently structured into groups, threads and elements for different areas, including AIM, CNS and MET.
- 3.1.15. In view of the above, the meeting reviewed the IIM Projects documents and identified the ASBUs elements applicable to the projects as well as the Key Performance Areas and Key Performance Indicators related to the project. The projects documents were therefore revised accordingly. The following Decision was formulated:

***Draft Decision 5/4 Alignment of the IIM/SG Projects to the 6th Edition of the GANP
That;***

To improve the implementation of the applicable ASBU elements in the Region in AIM, CNS and MET areas, the IIM Projects references as provided in Appendices 11, 12A, 12B, 12C are endorsed.

Alignment of AIM Projects activities to the sixth edition of the GANP

- 3.1.16. The AIM breakout session discussed details and reported to the meeting the reframing of AIM projects. The meeting noted that the three AIM projects aiming to assist States in the implementation of QMS, AIXM and e-TOD, had not advanced so far as expected since their endorsement in 2015 by the twentieth meeting of APIRG, to be completed latest by 31 December 2017.
- 3.1.17. The meeting was informed that the project “AIM Results-Based Implementation Support (RBIS) for the AFI Region” initiated in 2019, under the Comprehensive regional implementation plan for aviation safety in Africa (AFI Plan), to expedite the support to States in implementing QMS, AIXM and e-TOD had been reframed to cover the deliverables expected from the three AIM Projects of the IIM/SG. Consequently, the meeting agreed to close the activities of the concerned AIM Projects, to avoid duplications of efforts. The meeting formulated the following draft decision.

Draft Decision 5/5 Termination of the AIM/1, AIM/2 and AIM/3 projects activities

That;

Considering the AFI Plan “AIM Results-Based Implementation Support (RBIS) for the AFI Region” project whose scope covers the deliverables of the AIM projects listed below, and to avoid duplication of efforts, the activities of the following projects are terminated:

- a) AFI AIM/1 - Assessment and development of QMS applied to AIM in AFI States;***
- b) AFI AIM/2: Implementation of Aeronautical Information Exchange Systems (AIXM); and***
- c) AFI AIM/3 - Implementation of the provision of electronic terrain and obstacle data (e-TOD).***

- 3.1.18. The meeting recalled the applicability of the following AIM related ASBU elements, as per the assessment on the identification of ASBU elements applicable to AFI Region:
- a) DAIM - B1/1 - Provision of quality-assured aeronautical data and information;
 - b) DAIM - B1/2 - Provision of digital Aeronautical Information Publication (AIP) data sets;
 - c) DAIM - B1/3 - Provision of digital terrain data sets;
 - d) DAIM - B1/4 - Provision of digital obstacle data sets;
 - e) DAIM - B1/5 - Provision of digital aerodrome mapping data sets;
 - f) DAIM - B1/6 - Provision of digital instrument flight procedure data sets; and
 - g) DAIM - B1/7 - NOTAM improvements.
- 3.1.19. The meeting agreed to align AIM projects to these elements and emphasized on the need to facilitate the implementation of each element by a project. It was noted that the AIM RBIS Project, through the implementation support of QMS, AIXM and e-TOD, covers partially the element DAIM-B1/1 and fully the elements DAIM-B1/2, DAIM-B1/3 and DAIM-B1/4. For the remaining elements, the meeting proposed, through the following draft Decision, to develop new projects as described in Appendices 9 and 10 to this report.

Draft Decision 5/6 Adoption of the projects AIM/4 and AIM/5

That;

To assist States to improve the quality of Aeronautical information, and the implementation of aerodrome mapping and instrument flight procedure data sets, the following AIM projects, as described in Appendices 9 and 10, are endorsed:

- a) AFI AIM/4 – Monitoring of Aeronautical information quality; and***
- b) AFI AIM/5 – Implementation of Aerodrome mapping data sets and Instrument flight procedure data sets***

IIM Projects activities related to cyber resilience in AFI region

- 3.1.20. The meeting discussed the summary of achievements of IIM regional Project COM5 related to Cyber Security and Resilience for the Air Navigation Service.
- 3.1.21. The progress made by the project was outlined in this regard, the AFI ANS Cyber resilience framework was developed in consideration of the Aviation Cybersecurity Strategy and the proven cybersecurity standards and frameworks (ISO 27000 series, NIST, etc.).
- 3.1.22. This framework provides general guidelines on how to assess the cybersecurity risks, threats and vulnerability to Air Navigation Services and methods of mitigating such risks, as well as an overview of the various critical infrastructure in air navigation facilities and cyber-attack landscape.
- 3.1.23. The meeting noted the low level of States' responses (only 9% of States) to the survey questionnaires developed by the Project team.
- 3.1.24. The meeting was informed that the project has listed and kept up to date available training as well as workshops/webinars on cybersecurity of air navigation services and aviation in general. This list should be distributed to all IIM/SG projects. The meeting noted that a webinar organized by ICAO Regional Offices with the assistance of the Project and the

industry is planned in by end of 2022, with the aim to share the cybersecurity culture. The following Conclusion was formulated:

Draft Conclusion 5/7 Support to the IIM Projects activities related to cyber resilience in AFI region

That;

In order to increase States/Organizations' technical personnel awareness in cyber securing ANS systems, ICAO in coordination with the industry within the framework of the APIRG mechanism, strengthens its support to activities aimed at raising awareness of ANS Cyber resilience through webinars/workshops/seminars on Cyber resilience of ANS systems for the AFI Region

Reframing of the IIM MET Projects

- 3.1.25. The meeting recalled that the Twenty-fourth meeting of APIRG, raised the need to assess the competency of Aeronautical Meteorological Personnel within the AFI region. The meeting agreed on the Decision 24/25 calling for the IIM MET project 1 to assist States in the implementation of Aeronautical Meteorology Personnel competency standards in the region. Considering the alignment of the IIM MET Projects to the provisions of the GANP with a focus on the implementation of ASBU applicable elements in the region, and noting the need to ensure the consistency of the implementation of competency standards at the scale of the region, the meeting proposed the development of a new MET Project to carry out activities related to the implementation of competency standards.
- 3.1.26. Furthermore, the meeting noted with concerns issues raised by AFI RODBs quarterly reports regarding the low level of the availability of OPMET data in the region, and complains of the end-users concerning the lack of OPMET data in some aerodromes in the region. The unavailability of OPMET data is recurrent in the region and constitutes a source of safety risks for aviation. It is therefore urgent to put in place a mechanism to consistently address this issue. In this regard, the meeting has developed a specific MET project, named "MET Project 5" as a sustainable approach to assist States in addressing the long-standing deficiencies related to the availability of the operation meteorological data in the region. In view of the above, the following decision was proposed accordingly:

Draft Decision 5/8 Adoption of IIM MET project 4 and IIM MET Project 5

That,

To assist AFI States in the implementation of Aeronautical Meteorology Personnel competency standards, and to address in a sustainable manner, the long-standing deficiencies related to the availability of the OPMET data in the Region, the following IIM MET Projects, as described in Appendices 13 and 14, are adopted:

- ***IIM MET project 4 – Aeronautical Meteorology Personnel competency standards, and.***
- ***IIM MET Project 5 – Removing deficiencies in OPMET data availability in the Region***

Composition of new project teams

- 3.1.27. The meeting recalled the provisions of the APIRG procedural handbook with regards to the composition of project teams, stating that project teams shall be composed of subject matter experts with adequate qualifications and experience in the specific projects to which they are nominated and be familiar with the areas under consideration. Furthermore, Project Teams members are expected to participate in their capacity of subject matter experts as opposed to representatives of their individual States or organizations.
- 3.1.28. In view of the above and to carry out the new identified projects activities in the areas of AIM and MET, the meeting urged States and Organisations to nominate subject matter experts to the said projects. The following conclusion was formulated accordingly.

Draft Conclusion 5/9 Nomination of Experts for projects AIM/4, AIM/5, MET/4 and MET/5

That;

To carry out the activities of the new AIM/4, AIM/5, MET/4 and MET/5 projects,

- a) States and Organizations to nominate experts to the Project teams, providing information on nominee's qualifications and experience including their CV, by 30 November 2022; and***
- b) The Secretariat to review the qualifications of experts and finalize the Project team's composition by 31 December 2022.***

3.2. Reporting on Planning and implementation by States and Stakeholders

- 3.2.1. Under this item, ASECNA presented the status of implementation of ASBU AMET Block 0 elements in its Member States. The meeting noted with satisfaction efforts made by ASECNA in the implementation of applicable ASBU elements of Block 0 and Block 1. Indeed, the meeting noted that the implementation of AMET-B0/1, AMET-B0/2 and AMET-B0/4 is sufficiently advanced and that the implementation of AMET-B0/3 and some elements of AMET Block 1 is underway. The meeting applauded ASECNA and called for the pursuit of the implementation activities.

3.3. Update of the AFI eANP

- 3.3.1. The meeting was informed of the ongoing development of the Volume III of the AFI eANP, in relation to the changes introduced by the latest edition of the GANP, and taking into account the applicable elements of the ASBU identified for the region. The meeting emphasized that the update of the Volume III of the AFI eANP is as a urgent matter, as the 2017 edition of this Volume is no longer adequate for implementation, monitoring and reporting the status of the ASBU applicable elements of the GANP. The meeting formulated the following conclusion accordingly.

Draft Conclusion 5/10 Development of the Volume III of the AFI eANP

That;

To conclude the development of the Volume III of AFI eANP,

- a) The Secretariat, in coordination with the IIM Subgroup Project Teams, to finalise the draft AFI eANP Volume III and circulate it for review by States by 31 October 2022; and***
- b) States to review the draft eANP Volume III and provide the Secretariat with their feedback by 30 November 2022.***

3.4. Other Air Navigation initiatives

3.4.1. Under this item, the meeting recalled that the Decision 24/02 of the APIRG/24 established the AFI Volcanic Ash Exercise Steering Group (AFI VOLCEX/SG) to coordinate all aspects related to the planning and conducting of the volcanic ash exercise.

3.4.2. The meeting was updated on the outcomes of the first AFI volcanic ash exercise (AFI VOLCEX 21/01) conducted in November 2021 by Cabo Verde as the Exercise Lead State.

3.4.3. The meeting also discussed outcomes of the first meeting of AFI VOLCEX/SG that was held virtually on 5 July 2022. The AFI VOLCEX/SG1 meeting reviewed the report of the AFI VOLCEX 21/01, discussed the matters related to the next 2023 Volcanic Ash Exercise and updated the Terms of references of the AFI VOLCEX/SG.

3.4.4. The meeting commended the work done by the AFI VOLCEX Steering Group and formulated the following Decision.

Draft Decision 5/11 Outcomes of the First Meeting of AFI Volcanic Ash Exercise Steering Group

That;

To guide the conduct of the second AFI Volcanic Ash Exercise in 2023, the decisions of the first meeting of the AFI Volcanic Ash Exercise Steering Group, held virtually in July 2022 and contained in Appendix 15, are approved for submission to the APIRG/25 meeting.

3.4.5. The meeting recalled the Conclusion 24/ 22 of the APIRG/24 meeting which called States to nominate Experts for the coordination of APIRG and its subsidiary bodies activities. It further agreed that the nomination by States of National Coordinators for Planning and Implementation (NCPI) as well as Technical Focal Points (TFPs) for each technical area would facilitate the coordination of APIRG and its subsidiary bodies activities.

3.4.6. The meeting noted that 50% of the ESAF and WACAF States nominated experts as NCPIs and TFPs. The meeting reviewed the Terms of References for the NCPIs and the TFP, which provide details on the role and responsibilities of the nominees. The meeting agreed on the following draft Conclusion:

Draft Decision 5/12 Role and responsibilities of States National Coordinators for Planning and Implementation and Technical Focal Points

That;

To strengthen the APIRG and its subsidiary bodies activities, the terms of reference of the National Coordinator for Planning and Implementation (NCPI) as well as focal points for each area (AOP, ATM/SAR, AIM, CNS and MET) provided in Appendix 16 are adopted.

3.4.7. The meeting was provided with the outcome of the 5th Meeting of African Air Navigation Service Providers (ANSPs) held in Lomé (Togo) from the 28 March to 1st April 2022.

3.4.8. The meeting took note of the status of implementation of the conclusions and decisions of the previous meetings, the identified challenges encountered and proposed ways forward. The following Decision was formulated:

Draft Decision 5/13 Consideration of the outcome of the 5th Meeting of the African ANSPs

That;

To assist States in improving the provision of Air Navigation services and reinforce the collaboration amongst States/organizations, Projects Teams to consider the key outcomes of the 5th Meeting of the African ANSPs when revising and implementing the AFI Regional AIM, CNS, and MET projects.

3.4.9. The meeting was provided with the information on the GNSS signal vulnerabilities and their implications on the safety and security of international civil aviation in light with related issues outlined by the International Civil Aviation Organization (ICAO) and recently collected by the International Telecommunication Union (ITU).

3.4.10. The meeting noted that the ITU Radiocommunication Bureau (RB) has been recently informed of a significant number of cases of harmful interference to the radionavigation-satellite service (RNSS) in the 1 559 – 1 610 MHz frequency band affecting receivers onboard aircrafts and causing degradation or total loss of the service for passenger, cargo, and humanitarian flights. In some cases, this has also led to misleading information provided by RNSS receivers to pilots. Based on in-flight monitoring of air transport category aircraft GNSS receivers by one major aircraft manufacturer, 10 843 radio-frequency interference events were detected globally in 2021.

3.4.11. The meeting was reminded on the various initiatives taken by the ITU, the ICAO Council, the Air navigation Commission and APIRG and recommended States to take all the appropriate measures to protect the GNSS frequency band. The following Conclusion was formulated:

Draft Conclusion 5/14 Prevention of harmful interference to Radio Navigation Satellite Service Receivers in the 1559 – 1610 MHz frequency band and mitigation of their impact

That.

To ensure the safety, capacity, efficiency and continuity of GNSS based air operation, States to endeavor to :

- a) *plan, conduct and monitor appropriate actions aiming at preventing harmful interferences or mitigating the risk of the impact of such interferences to the Radio Navigation Satellite Service Receivers in the 1559 – 1610 MHz frequency band; in coordination with service providers (Airlines, Air Navigation Service Providers, Aerodrome Operators, and all stakeholders operating in the aviation sector including Air Force units);*
- b) *sensitize the national Authority of Regulation of Telecommunication, on the risk encountered by the civil aviation industry; and*
- c) *provide feedback of actions taken to the ICAO Regional Offices*

- 3.4.12. ICAO Position on the International Telecommunication Union World Radiocommunication Conference 2023 (ITU WRC-23) Agenda Items of particular importance to civil aviation (1.1; 1.5; 1.17 and 9.1.5) was presented in detail and ICAO specific views on the other various Agenda Items recorded under each respective agenda items in particular agenda items 1.4; 1.6; 1.7; 1.10; 1.11; 1.12; 1.16; 4; 8; 9.1.1; 9.1.6 and 10).
- 3.4.13. The meeting reiterated that States should support the whole ICAO Position at the WRC-23 in the interest of the aviation frequency bands protection. The following Conclusion was formulated.

Draft Conclusion 5/15 Support to ICAO Position for ITU WRC- 23

That;

In preparation of the ITU World Radiocommunication Conference 2023 (ITU WRC-23), Administrations/Organizations to:

- a) *contribute, when possible, to the Frequency Spectrum Management Panel (FSMP) effort to update the ICAO position to reflect the outcome of ITU-R studies and the concerns identified by the AFI Region;*
 - b) *liaise with Sub Regional Telecommunication Regulators such as the West African Telecommunication Regulators' Association, the Communication Regulators' Association of Southern Africa and where possible participate in the work of the African Telecommunication Union (ATU) and ITU-R; and*
 - c) *work with national radio regulators to secure a national/Regional position in line with ICAO's position*
- 3.4.14. The meeting was briefed on the recent and ongoing rollout of 5G in the frequency band below the Radio Altimeter band at 4 200 – 4 400 MHz and the potential associated interference issues to Radio Altimeters that 5G base stations may cause has resulted in questions being asked to ICAO Secretariat, by aeronautical Regulators and others.
- 3.4.15. The meeting noted that 5G rollout strategies in different States are different in terms of key parameters such as how close the frequency band used is to the Radio Altimeter frequency band and total transmitting power of the base stations. Hence the mitigatory strategies taken will need to be tailored to each specific situation.

- 3.4.16. The meeting was provided with a summary of the outcome of the independent continental Cost Benefit Analysis (CBA) conducted by AFCAC/AUC.
- 3.4.17. The meeting was also provided with the conclusions of the Continental Workshop on the CBA/SBAS Implementation in Africa, held in Kigali (Rwanda), from 30 to 31 May 2022, where a consensus was obtained by stakeholders.
- 3.4.18. In consideration of the technology Roadmap of the GANP, the meeting agreed to task the NAV Project to update the AFI Navigation Strategy through the rationalization of conventional Nav'Aids and the update of the GNSS Strategy. The following conclusion was formulated.

Draft Decision 5/16 Update of the AFI Navigation strategy

That;

In accordance with the GANP technology Roadmap and the outcomes of the Continental independent Cost Benefit Analysis (CBA) for the introduction of SBAS in the AFI Region, the AFI NAV Project Document be revised by NAV Project Team to consider the need to develop an AFI Navigation Strategy including the rationalization of conventional Nav'Aid and the update of the AFI GNSS.

- 3.4.19. The meeting also recalled the funding requirements for the implementation of SBAS and requested AFCAC and ICAO to reinforce their support to States for the mobilization of resources for the effective implementation of SBAS in the AFI Region in compliance with the revised Regional GNSS Strategy. The following Conclusion was formulated:

Draft Conclusion 5/17 Support of the African Union Commission to the implementation of SBAS in the AFI Region

That;

AFCAC, in collaboration with ICAO and partners to reinforce the support to States for the mobilization of resources for the effective implementation of SBAS in the AFI Region in accordance to the revised Regional GNSS Strategy.

Agenda Item 4: Air Navigation Deficiencies

4.1. Update on the implementation of the AFI ANDD Tool

- 4.1.1. The meeting was updated on the operationalization of the AFI air navigation deficiencies database (AANDD). The workshop for focal points of States and Organizations was held from 23 to 24 November 2021, with the attendance of almost 100 experts from 15 ESAF States (62.5%), 9 WACAF States (37.5%), and from ANSPs and international Organizations.
- 4.1.2. The meeting noted that the workshop provided the participants with a good understanding of air navigation deficiencies and clarified the difference with USOAP findings. The workshop explained the deficiencies management process and familiarized participants with the tool.

- 4.1.3. The meeting was informed that letters had been sent to States whose focal point did not attend the event, informing them on the availability of the tool on the Regional Offices websites, for the exercise purpose.
- 4.1.4. The meeting was also informed that the deployment of the operational version of the platform has taken more time than expected due to some technical constraints. ICAO was urged to expedite this deployment to assist the region in carrying out the air navigation deficiencies management activities.
- 4.1.5. The meeting urged States and Organizations that are yet to nominate AANDD Focal points to do so, and encourage all States and stakeholders involved in APIRG framework to engage in the Air navigation deficiencies management activities.

Agenda Item 5: Activities to be coordinated with the RASG-AFI SSTs

- 5.1. There is no identified activity that requires coordination with the RASG-AFI Safety Support Teams.

Agenda Item 6: Proposed recommendations/actions to be taken by ICAO HQ

- 6.1. Under this item, the meeting discussed issues related to the effective support to the IIM Projects activities related to cyber resilience in AFI region. The meeting noted that to increase States/Organizations technical personnel capability in cyber securing ANS systems, ICAO in collaboration with the industry, strengthens its support to activities aimed at raising awareness of ANS Cyber resilience through webinars/workshops/seminars on Cyber resilience of ANS systems in the AFI Region. In this regard, the meeting noted that the Draft Conclusion 5/7 calls for action from ICAO HQ.

Agenda Item 7: Conclusions/Decisions of the Fifth Meeting of the Infrastructure and Information Management Sub-Group (IIM/SG5)

- 7.1. The meeting reviewed and adopted the draft Conclusions and Decisions of the IIM/SG5 Meeting as presented in the text.

Agenda Item 8: Review of the Work Programme of the Sub-Group

- 8.1. The meeting reviewed the work program as approved by APIRG/24 and noted that out of ten (10) planned tasks, one (1) task was completed, six (6) were partially completed and three (3) had not yet been started.
- 8.2. With the focus on the implementation of the ASBU elements applicable to the region, the work program was updated to address the assigned projects' objectives. The meeting formulated the following decision:

Draft Decision 5/18 Work Programme of APIRG IIM/SG for 2022/2023

That,

The work programme of the IIM/SG as provided in Appendix 17 is approved

Agenda Item 9: Any other business

- 9.1. Under this item, the meeting was informed that IIM projects are not operating at the same pace and many of them are not performing. The meeting urged the Secretariat to convene a specific meeting of the IIM projects' PTCs to discuss the challenges faced by the project teams.
- 9.2. The meeting recommended to use this forum as an opportunity for the PTCs to share their experiences and best practices and identify actions to effectively address issues affecting projects implementation.

Agenda Item 10: Closing Ceremony

- 10.1. The closing remarks were delivered by the APIRG Secretary, Mr. Prosper Zo'o Minto'o, Regional Director of the ICAO WACAF Office, who expressed his appreciation to all IIM/SG members for their support and active participation in the activities of the subgroup. He conveyed his gratitude to the entire Secretariat, and praised the work done by the Subgroup.
- 10.2. The Chairperson ended the meeting by thanking the Secretariat, the delegates, and the interpreters for their contribution to the successful conduct of the meeting.

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