Seventh Meeting of the APIRG Infrastructure and Information Management Sub-group (IIM/SG7)

(Dakar, 5 – 8 August 2024)

Draft Report

Prepared by the Secretariat

August 2024

Contents

LIST OF ABBREVIATIONS

AANDD	AFI Air Navigation Deficiencies Database
AAO/SG	Airspace and Aerodrome Operations Subgroup
AFCAC	African Civil Aviation Commission
AFI	Africa and Indian Ocean
AFI VACP	AFI Volcanic Ash Contingency Plan
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
AUC	African Union Commission
BBB	Basic Building Block
CAA	Civil Aviation Authority
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
GANP	Global Air Navigation Plan
GNSS	Global Navigation Satellite System
HQ	ICAO 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
MET	Aeronautical Meteorology

MoU	Memorandum of Understanding
NCPI	National Coordinator for Planning and Implementation
NCLB	No Country Left Behind
NOC	National OPMET Centre
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
RODB	Regional OPMET Data Bank
SADIS	Secure Aviation Data Information Service
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
SWIM	System Wide Information Management
TAC	Traditional Alphanumeric Code
WACAF	Western and Central African
WAFS	World Area Forecast System
WMO	World Meteorological Organization
VoIP	Voice over Internet Protocol

LIST OF APPENDICES

LIST OF CONCLUSIONS AND DECISIONS

Reference of draft Conclusion /Decision	Title of draft Conclusion /Decision
IIM/SG7 Decision 7/01	***Establishment of the Flight and Flow – Information for Collaborative Environment (FF-ICE) Project***
IIM/SG7 Decision 7/02	***Selection of Experts to the AIM 4 and AIM 5 projects teams***
Draft Conclusion 7/03	***Conduct of the third volcanic ash exercise in the AFI Region***
Draft Conclusion 7/04	***New SADIS API and WIFS API services***
Draft Decision 7/05	***Finalization of the preparation of the Air Navigation Services Summit***
Draft Decision 7/06	***Scope of the minimum reporting framework***
Draft Conclusion 7/07	***Revision of IIM Projects membership***
Draft Decision 7/08	***Work Programme of APIRG IIM/SG for 2024/2025***

PART I – HISTORY OF THE MEETING

1. Introduction

1.1. The seventh meeting of the APIRG Infrastructure and Information Management Sub-Group (IIM/SG7) was held in Dakar, Senegal from 5 to 8 August 2024.

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 meeting discussed, among other things, the progress made in addressing the challenges in the implementation of the ASBU elements, for which the data collected by the Regional Offices from the States played a crucial role in assessing the implementation status in the region and the completion of the automation of the e-ANP Volume III. This will allow the States to directly load the implementation status of the ASBU elements into the tables designed for this purpose.

2.2. The meeting also discussed the activities of the project teams and the management of deficiencies in air navigation, where progress is still low.

3. Attendance

3.1. The meeting was attended by fifty-eight (58) participants from fifteen (15) States, and Organizations such as AAMAC, ASECNA, SAWS, IATA, WAFC London, WMO and the ICAO ESAF and WACAF Regional Offices.

3.2. The list of participants is provided in Appendix 1 to this report.

4. Officers and Secretariat

4.1. The meeting was chaired by Mr. Issoufou Abdoulaye (Niger) as Chairperson of the Subgroup; assisted by Ms. Nokuthula Phakathi (South Africa), 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, from the ICAO ESAF Regional Office, and Mr. François Xavier Salambanga and Mr. Fanfé Bamba, Regional Officer CNS and Regional Officer, AIM respectively, from the 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 Africa (WACAF) Office 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 Mr. Issoufou Abdoulaye (Niger) and Ms. Nokuthula Phakathi (South Africa), 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/26 meeting that called for actions, including the completion of the automation of the eANP Volume III, the support to foster progress on regional key priorities and challenges, the management of Air Navigation Deficiencies, the implementation of Projects as well as ASBU elements, and the status of the Regional Air Navigation Plan.

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 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/SG6 Meeting and APIRG/26 Meeting applicable to the Sub-group.**

2.1. Review of the Conclusions/Decisions of the Sixth Meeting of the Infrastructure and Information Management Sub-Group (IIM/SG6)

2.2. Review of the Conclusions/Decisions of the APIRG/26 Meeting applicable to IIM/SG

Agenda 3. **Achievements in Infrastructure and Information Management**

3.1. Status of the Regional Air Navigation Plan

3.2. Status of implementation of ASBU elements in AIM, CNS and MET areas

3.3. Implementation of ASBU elements and Achievements of IIM Projects

3.4. Reporting on Planning and implementation by States and Stakeholders

3.5. Other Air Navigation initiatives

Agenda 4. **Air Navigation Deficiencies**

Agenda 5. **Implementation challenges of the Sub-group**

Agenda 6. **Activities to be coordinated with the RASG-AFI SSTs**

Agenda 7. **Proposed recommendations/actions to be taken by ICAO HQ**

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

Agenda 9. **Conclusions/Decisions of the Seventh Meeting of the Infrastructure and Information Management Sub-Group**

Agenda 10. **Any other business**

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 agenda, and the work programme proposed by the Secretariat.

Agenda Item 2: Status of the implementation of Conclusions and Decisions of the IIM/SG6 Meeting and APIRG/26 Meeting applicable to the Sub-group

Conclusions/Decisions of the Sixth Meeting of the Infrastructure and Information Management Sub-Group (IIM/SG6)

2.1. The meeting was presented with the status of implementation and actions taken on the IIM/SG6 meeting's Conclusions and Decisions. It was noted that the IIM/SG6 meeting adopted four (4) Conclusions and four (4) Decisions.

2.2. Two (2) of these Decisions that were not considered by the APIRG/26 were reported as 'Completed' as per the **Appendix** 3 to this report.

Review of the Conclusions and Decisions of the APIRG/26 Meeting applicable to IIM/SG

2.3. The meeting was provided with an update on the status of implementation and actions taken on the APIRG/26 Conclusions and Decisions that are applicable to the IIM/SG. A total of nine (9) Decisions and seven (7) Conclusions linked to the IIM/SG activities were adopted by the APIRG/26 meeting. The meeting noted that 67% of the Decisions and 43% of the Conclusions were completed while 33% and 57% of the Decisions and Conclusions were in progress as per **Appendix 4** to this report. The meeting urged States and Organizations to expedite the implementation of pending actions.

Establishment of the Flight and Flow – Information for Collaborative Environment (FF-ICE) task force

2.4. The meeting was informed that during the APIRG/26 meeting held in November 2023 in Cotonou, Benin, South Africa and ASECNA highlighted the need to improve awareness of Flight and Flow Information for a Collaborative Environment (FF-ICE) in the AFI Region ahead of its 2032 implementation. Therefore, the APIRG/26 Decision 26/17 called for the AAO and IIM Subgroups

to coordinate the establishment of an FF-ICE Task Force which includes technical experts from States, ANSPs, Airspace users and other concerned International Organizations by 28 February 2024. The meeting requested the Task Force to establish a framework for the launching of FF-ICE Project and conduct a workshop to provide awareness on FF-ICE developments in the AFI Region. States were therefore requested through the State letter Ref. T 13/19 – 0116 dated 7 March 2024, to submit lists of experts and their CVs for participation by 18 March 2024. The Secretariat selected the team based on these submissions, and the initial virtual kick-off meeting was conducted on 19 April 2024. The meeting reviewed the Terms of Reference (ToR) developed by the Task force to guide the activities as provided in **Appendix 5** to this report.

2.5. The meeting also noted that the Task force further developed a proposed webinar theme, synopsis and topics as required by the APIRG/26 Decision 26/17. The proposed webinar theme, synopsis and topics are provided in the **Appendix 6** to this report, with an awareness webinar on FF-ICE planned for October 2024.

2.6. The meeting therefore formulated the following draft Decision.

<table>
<tr><td colspan="6">IIM/SG7 Decision 7/01: Establishment of the Flight and Flow – Information for Collaborative Environment (FF-ICE) Project</td></tr>
<tr><td>Why:</td><td colspan="5">That, to ensure a harmonized and timely implementation of FF-ICE in the AFI region,</td></tr>
<tr><td>What:</td><td colspan="5">a) The proposed Termes of References of the FF-ICE Task force are approved for coordination with the AAO Subgroup;
b) The IIM/SG to coordinate with the AAO/SG for endorsement of the proposed ToR by 30 October 2024;
c) The FF-ICE Task force to develop the FF-ICE Project document and submit it to the Secretariat for APIRG consideration through the APCC by 30 October 2024;
d) The FF-ICE Task force to conduct the awareness workshop called for by the APIRG Decision 26/17 by 28 February 2025.</td></tr>
<tr><td>Who:</td><td colspan="5">a) IIM/SG
b) The Secretariat
c) FF-ICE Task force, Secretariat
d) FF-ICE Task force</td></tr>
<tr><td>When:</td><td colspan="5">b): 30 October 2024
c) 30 October 2024,
d) 28 February 2025</td></tr>
<tr><td colspan="6">Implementation following-up</td></tr>
<tr><td>Follow-up required</td><td>Yes ☒
No ☐</td><td>Metrics</td><td>Metric 1: Project document submitted to APIRG
Metric 2: Workshop conducted</td><td>Means to collect</td><td>Mean 1: Working paper
Mean 2: State Letter
….</td></tr>
</table>

Agenda Item 3: Achievements in Infrastructure and Information Management

Status of the Regional Air Navigation Plan

3.1. The meeting recalled that the APIRG/25 meeting highlighted inconsistencies in the data of the Regional eANP Volumes I and II, urging for their updates. The Secretariat reported on activities conducted so far to support these updates, including webinars held in October 2023 with different

level of States' participation. The APIRG/26 meeting expressed concerns as well regarding the low participation of States in the said activities. The meeting urged States to submit their contributions for updating Volumes I and II by 28 February 2024 and tasked the ICAO Regional Offices to consolidate these inputs and propose amendments by 30 April 2024.

3.2. The meeting noted that in response to the APIRG Conclusion 26/20, only Nigeria and Tanzania submitted additional contributions to the ICAO Regional Offices. To increase awareness, the ICAO WACAF Regional Office conducted two workshops in April 2024, one in English and one in French, focusing on Volumes I and II of the Air Navigation Plan (eANP) and Air Navigation Deficiencies. The participation to the workshops remained limited.

3.3. The meeting also was informed that the Secretariat has initiated the process of proposals for amendment (PfAs) based on submissions received, with ongoing coordination with relevant States.

Operationalization of ASBU data collection tool

3.4. The meeting recalled the need to align the Regional Air Navigation Plan with the GANP as acknowledged by the APIRG/24 meeting, which through its Decision 24/30 tasked the Secretariat to identify relevant ASBU elements for the region, which were endorsed by the APIRG/25 meeting.

3.5. The meeting was also reminded of the Excel-based template presented in the APIRG/25 meeting to report on ASBU implementation. The meeting agreed on its use until an online tool is developed, using the baseline data on their planning and implementation of ASBU elements as requested by the APIRG/26 meeting. This online tool will be added to the existing AANDD platform, providing functionalities for ASBU monitoring and reporting.

3.6. Despite limited feedback from States on the draft Volume III of the eANP, the tool was finalized using dummy data. As an add on to the AANDD platform, the ASBU tool leverages on the existing database, providing access to both Air navigation deficiencies management and ASBU monitoring through a single user account. The development of the ASBU tool is now completed and its main functions includes:

a) Management of the ASBU Threads/Blocks/Modules/Elements;
b) Defining ASBU Elements applicability;
c) States reporting on planning and implementation of applicable ASBU Elements;
d) Dashboard of the status of ASBU implementation; and
e) Generation of Regional ASBU implementation report.

3.7. A testing phase is underway, with training workshops for States and Organizations focal points planned by October 2024.

Status of implementation of ASBU elements in AIM, CNS and MET areas

3.8. The meeting reviewed the status of ASBU implementation in AIM, CNS, and MET fields, noting low feedback from States. The implementation of certain ASBU elements like FICEB0/1 (AIDC), ASUR_B0/2 (MILAT), ASUR-B0/1 (ADS-B), AXIM DB and AMET-B1/4 is particularly challenging as showed in graphics provided in **Appendix 7** to this report. Several factors, including a lack of reporting and data inconsistencies in the eANP Volume III, may explain the low

implementation percentages. The meeting encouraged States and stakeholders to update their data and take necessary actions.

Implementation of ASBU elements and Achievements of IIM Projects

3.9. The Meeting received an update on the achievements of APIRG IIM Projects, acknowledged the progress made, and provided guidance to further support States in implementing ICAO SARPs and ASBU elements in the CNS, AIM, and MET areas.

For Communication, Navigation and Surveillance related Projects

3.9.1. The IIM-SG COM 1 project on the Implementation of Ground/Ground communication (ATS/DS, AIDC, VoIP) reported on key achievements, including the successful revision of the project action plan, planning, and budget; the development of guidance material for implementing ground-to-ground communication systems (ATS/DS, AIDC, VoIP) and the assessment initiative which led to a questionnaire circulated to evaluate the implementation status of the communication systems in the AFI region. The Project highlighted some challenges, including the lack of active participation from project experts, the need to review and validate the action plan and budget and to strengthen the project team to ensure successful implementation.

3.9.2. The COM2 project on the Implementation of Ground/Ground communication (AFTN, AMHS) successfully reviewed key documents for the transition from AFTN to AMHS. The team reported on the regular communication and collaboration through scheduled meetings, fostering progress and alignment among participating States. Key challenges encountered by the Project include low AMHS interconnections among States in the AFI region which are still below 50% and the infrastructure shortcomings hindering the transition process. The Project raised also financial and technical resources issues challenging the project implementation. The Project recommended amongst other, the timely feedback from participating States on their implementation, and the development of clear metrics to monitor and evaluate project progress.

3.9.3. The COM3 project on the Implementation of Air/Ground communication (HF/VHF voice data, CPDLC) delivered on the development of a questionnaire analysis template, the AFI communication strategy, the project costing and the alignment of the project with the AFI Air Navigation Plan, covering air/ground communication across all airspaces and ATC centres in the AFI region. The Project highlighted some challenges covering the need to assist States with the implementation of COM3 ASBU elements, difficulties to have baseline data on States implementation. The Project stressed on the need for investment in IP-compatible HF systems and migration to IP-ready systems, the use of renewable energy to enhance reliability and the need to address frequency interference issues to improve communication quality.

3.9.4. The COM4 project on Implementation of interoperable seamless telecommunication infrastructure, reported on the development and refinement of Project Documents as well as project costing, the identification of links with other Projects ensuring integration and coordination, the assessment of AFI VSAT Networks for future integration. The gap analysis for VSAT network interoperability and developing guidance on IP VPN as a backup is underway. The COM4 Project challenges included the inconsistent participation of experts

affecting project progress and collaboration, the need for VSAT Network upgrades to meet future technological demands, and the need for financial support to project activities.

3.9.5. The IIM/SG COM 5 Project, titled "Assessment of AFI Air Navigation Services Cyber Resilience," reported on the development of a comprehensive Cyber Resilience Framework that was developed for AFI States and ANSPs, aligning with global cybersecurity strategies and guidelines, as well as the increasing awareness through workshops organized to promote awareness of cyber resilience, with a major event scheduled for October 2024. Challenges encountered by the Project include the need to extend the project timeline beyond 2025, and the need to support the project continued activities such as defining the project scope, conducting cyber risk assessments, and analyzing regulations, suggesting a complex and evolving process.

3.9.6. The SURV Project on implementation of surveillance systems reported as key achievements the development of a comprehensive survey to assess existing surveillance infrastructures, the creation of a Project documentation repository, the establishment of a centralized repository for all project-related documentation and the establishment of linkages with other IIM Projects for successful integration and coordination with other IIM initiatives. The Project conducted a workshop on Mode S and 24-bit address allocation and drafting an AFI Surveillance Strategy which formulated a strategic plan for surveillance systems in the AFI region. The Project is experiencing difficulties in engaging experts in the project, which impacted the progress and effectiveness of its implementation.

3.9.7. The SPEC project on the development of policies and systems for protection of Aeronautical Frequency, provided an update on the achievements, including the successful alignment of its documentation with the Global Air Navigation Plan, actions taken in addressing issues related to 5G technology and its impact on aviation frequencies, the development of a Memorandum of Understanding (MoU) templates for Civil Aviation Authorities and frequency regulators, facilitating better coordination, the conduct of workshops to enhance skills in frequency management. The project also initiated studies on the impact of 5G on aviation frequencies. The challenges encountered by the Project include safeguarding aviation frequencies from interference due to rapid technological advancements like 5G, the compliance with ICAO's frequency management tools while coordinating among various stakeholders and the need for active participation from States and Organizations to effectively implement the project.

3.9.8. The meeting did not receive any report on NAV Project on the implementation of conventional Navaids and GNSS (Core and Augmented) aimed at enabling the implementation of PBN.

For Aeronautical Information Management related Projects

3.9.9. The APIRG/25 meeting adopted the AIM Project 4 and Project 5 for improving aeronautical information quality and NOTAM, and for implementing aerodrome mapping and instrument flight procedure datasets.

3.9.10. The APIRG/26 meeting identified challenges, including the lack of expertise in flight procedure design and aeronautical charting. The meeting therefore reviewed a set of criteria proposed for the selection of qualified experts for these projects and directed the Secretariat to disseminate these criteria provided in **Appendix 8** to this report to States and Organizations. The following draft Decision was formulated accordingly.

IIM/SG7 Decision 7/02: Selection of Experts to the AIM 4 and AIM 5 projects teams					
Why:	*That, to set up the projects' teams of AIM Project 4 and AIM Project 5,*				
What:	*a) The criteria for the selection of Experts provided in Appendix 8 are adopted,* *b) States and Organizations to nominate Experts for both AIM 4 and AIM 5 Projects based on the agreed criteria by October 2024.*				
Who:	*Secretariat*				
When:	*30 October 2024*				
Implementation following-up					
Follow-up required	Yes ☒ No ☐	Metrics	Criteria circulated	Means to collect data on the implementation of the conclusion /decision	State Letter

For Aeronautical Meteorology related Projects

3.9.11. The MET Project 1 on the Provision of global, regional, and local meteorological products/information reported on making steady progress with various ASBU MET elements, such as observations and forecasts, indicating successful development and deployment of MET services and the completion of Project costing. The Project emphasized that different implementation levels across ASBU elements indicate that progress is uneven, suggesting areas may need more focused support. The Project highlighted ongoing efforts to review materials, coordinate activities, and address gaps, which implies challenges in achieving uniform implementation and possibly in coordinating across multiple states.

3.9.12. The MET Project 2 on the Provision of meteorological information in the ICAO Meteorological Information Exchange Model (IWXXM) format, reported on its achievements, including the collection and review of data collected on implementation by States, the holding of a Seminar on the Development of Meteorological Information Exchange Capabilities (ICAO IWXXM model) and the development of the cost of the project. The Project team developed and implemented a questionnaire to assess the implementation of ASBU elements, particularly AMET-B1, in the AFI region. The Project recommended intensifying efforts to update national plans and adopt the digital format for OPMET data.

3.9.13. The MET Project 3 on the Implementation of ICAO Annex 3 provisions relating to Space Weather requirements within the AFI region reported on the coordination of the project and development of guidance material, the conduct of gap analysis, and development of action plans, the conduct of three workshops since 2021, including virtual and in-person sessions. The Project highlighted that many States have not included the Amendment 78 of Annex 3 in their national regulations impacting space weather information inclusion in flight planning, as well as the low attendance from nominated experts at project meetings affecting progress. The Project also indicated that the financial support may foster the progress of the project and reiterated States and organizations to ensure their nominated experts actively participation in project activities.

3.9.14. The MET Project 4 on the Implementation of Aeronautical Meteorological Personnel Competency Standards in the AFI region conducted a gaps analysis using a questionnaire sent to States, to assess the implementation of competency standards for Aeronautical Meteorological Forecasters (AMF) and Observers (AMO). Feedback from several States has been collected, including Angola, Djibouti, Eswatini, Ethiopia, Kenya, Mauritius, Seychelles, Uganda, Zambia, and Zimbabwe. The project also conducted a successful virtual workshop on competency standards in November 2023 with the participation from 19 States and ASECNA. Presentations on the project's activities were made at the ESAF In-Person Regional Aeronautical Meteorological Seminar in June 2024. The Project expressed concerns on the limited participation of experts in project meetings and regional sensitization workshops, which affects the effectiveness of awareness-raising efforts.

3.9.15. The MET Project 5 on the Mitigation of the deficiencies related to the availability of the OPMET data in the AFI region developed the project document, including the project cost estimate. A workshop was organized in October 2023 to refresh the knowledge of States' experts on the AMBEX system, its organs and procedures. As a challenge, the meeting noted that the project suffers from a lack of effective coordination and latency in the conduct of activities. The meeting insisted on the review of the Project team.

Projects Costing

3.10. The APIRG/20 and APIRG/21 meetings established and reiterated APIRG's mandate to explore assistance and funding mechanisms in cooperation with regional and sub-regional organizations such as the African Union, AFCAC, Regional Economic Communities (RECs) and financial institutions, in accordance with the Conclusion 20/49. In line with this conclusion, the Secretariat created a consolidated project catalogue and provided guidance for project development and costing. The meeting reviewed the draft project documents and costing submitted by the IIM Project Teams as per **Appendix 9** to this report and tasked the Secretariat to review the submissions and ensure projects documents are completed by September 2024, for APCC/9 meeting consideration.

Reporting on Planning and implementation by States and Stakeholders

Progress Update on AFI VSAT networks: SADC and NAFISAT

3.11. The meeting was reported that the SADC and NAFISAT VSAT networks in South Africa are performing above 99% availability and are being modernized to meet ATN IPS requirements. These networks are fully interoperable at the satellite level and with AFISNET, minimizing delays. ATNS has successfully implemented VPN solutions at several locations and will continue to prioritize satellite communication for its superior coverage and reliability. Collaboration among network operators is encouraged to enhance network interoperability.

Implementation of Ground/Ground Communication (AFTN and AMHS) in South Africa

3.12. South Africa implemented the Aeronautical Fixed Telecommunications Network (AFTN) in 2001, and the Aeronautical Message Handling System (AMHS). The Aeronautical Message Handling System (AMHS) was introduced in 2009 with an upgrade to the Aeronautical Message Switching System (AMSS). In 2016, AMHS systems in South Africa successfully tested the interchange of IWXXM messages between the RODB (Pretoria Met) and the Communication

Centre in September 2016. The RODB is currently engaging with IROG Toulouse to start exchanging messages in IWXXM format.

3.13. In 2023, South Africa established AMHS P1 connections with Argentina, Spain, and Egypt, enhancing regional communication networks through the REDDIG II network. SAM States prioritized AMHS connections with APAC, routing primarily through Johannesburg and Ezeiza, with a secondary route via Atlanta and Salt Lake City, which was accepted by South Africa, Australia, and the APAC region.

3.14. South Africa is upgrading its AFTN/AMHS system to maintain its role as a regional communication center, as per ICAO plans, and successfully migrated AIM connections from AFTN to AMHS with several States. Issues were encountered when connecting with other ANSPs/States, including the lack of training, States not well prepared, complex AMHS transitions with unregistered States.

3.15. In view of the above, the meeting urged States to register with the Air Traffic Services Messaging Management Centre (AMC) and keep their information updated. States were also requested to organize trainings or webinars on AFTN/AMHS to support AMHS migration and ensure participation. Additionally, the meeting encouraged collaboration between States and the ICAO Regional Office to address AFTN/AMHS challenges and restore services.

Regional cooperation between AFI ANSP in terms of AIXM databases

3.16. The meeting acknowledged the joint plan signed on 26 July 2022, between ASECNA and The Gambia under the "No Country Left Behind" initiative. This plan aims to support The Gambia with the implementation of low-cost and interoperable systems by hosting its AIXM database on ASECNA's server, including tools, staff training, and a dedicated server partition to protect intellectual property.

3.17. Currently, 80% of the project is completed with remaining tasks focusing on finalizing the eAIP, printing new AIPs and conducting a safety study. This cooperation will launch a digital aeronautical information portal for The Gambia, print a new AIP, and ensure data interoperability. ASECNA's updated AIXM 5.X database and infrastructure plans were also noted. The meeting encouraged ASECNA to continue supporting other States.

Coordination between the MWOs and the AMOs for the management of SIGMETs

3.18. The meeting was updated on a mechanism implemented by ASECNA to improve the timely provision of SIGMET information of a required quality through a coordination process established between the Meteorological Watch Offices (MWO) and the corresponding Aeronautical Meteorological Offices (AMO).

3.19. The Meeting commended this initiative and encouraged ASECNA to share experience with other ANSPs. It further encouraged ASECNA to ensure that the dissemination of MET data is aligned with the AFI MET Bulletin Exchange (AMBEX) scheme.

WMO partnering with ICAO and WMO activities of relevance to ICAO

3.20. The meeting received valuable updates on the World Meteorological Organization's (WMO) recent activities relevant to ICAO, including the context of WMO's latest organization structures, engagement with ICAO and other agencies at the global and regional levels. Highlights included the latest WMO organizational structures for aviation services and regional Association I (Africa), WMO's contributions to the ICAO Meteorology Panel (METP), and outcomes from the third Services Commission session and the 78th Executive Council session. The meeting was also briefed on the upcoming WMO events such as the Aeronautical Meteorology Scientific Conference, the 2024 Aviation Meteorology Training Seminar, and the 2024 Writing Workshop for the Task Team on the Long-term Plan for Aeronautical Meteorology. Additionally, updated WMO publications relevant to aeronautical meteorology were shared through the following links.

- *Technical Regulations*, (WMO-No. 49), Volume I, *General Meteorological Standards and Recommended Practices* (2023 edition).
- *Guide to Services for Aviation* (WMO-No. 732) (2023 edition), formerly the *Guide to Practices for Meteorological Offices Serving Aviation.*
- *Aerodrome Reports and Forecasts: A User's Handbook to the Codes (WMO-No. 782)* (2022 edition).
- *Guide to Aeronautical Meteorological Services Cost Recovery: Principles and Guidance* (WMO-No. 904) (2023 edition)
- *Manual on the WMO Information System* (WMO-No. 1060) (2023 edition).
- *Guide to the WMO Information System*, Volume I (WMO-No. 1061) (2023 edition, updated in 2024).
- *Guide to the Implementation of Education and Training Standards in Meteorology and Hydrology*, Volume I – *Meteorology* (WMO-No. 1083) (2023 edition).
- *Technical Regulations*, (WMO-No. 49), Volume I, *General Meteorological Standards and Recommended Practices* and the *Compendium of WMO Competency Frameworks* (WMO-No. 1209)

3.21. The meeting noted that, according to a two-stage action plan approved by the 19th World Meteorological Congress (Cg-19) in 2023, Parts I and II of Technical Regulations (WMO-No. 49), Volume II, concerning meteorological services for international air navigation, were discontinued as of 31 December 2023, due to their overlap with ICAO Annex 3 and upcoming PANS-MET. Parts III and IV, related to aeronautical climatology and flight documentation will remain until relevant content is incorporated into ICAO PANS-MET, expected by 2027. A detailed online communication package on this discontinuation is available on the WMO website.

3.22. The meeting recognized WMO's support for aeronautical meteorological services in Africa and its collaboration with ICAO at global and regional levels. It encouraged both organizations to

continue their partnership to help States implement upcoming changes to MET-related SARPs effectively.

3.23. The meeting supported the WMO Regional Office for Africa's proposal for regular consultations between ICAO and WMO Regional Offices. These consultations aim to enhance regional cooperation on aviation meteorology, focusing on compliance with ICAO Annex 3, QMS implementation, personnel competency, OPMET data exchange, better coordination between Aeronautical Meteorological Service Providers (AMSP) and Civil Aviation Authorities, and initiatives to increase availability of OPMET data in Africa.

Other Air Navigation initiatives

Transformative blockchain approach to enhance security, efficiency and transparency

3.24. The meeting was informed that industries are reassessing their business strategies to generate revenue in the post-pandemic era, particularly with the rise of the Fifth Industrial Revolution (5IR). It was emphasized that the aviation sector must also adopt transformative strategies to enhance security, efficiency, and transparency to remain competitive. The meeting was briefed on how blockchain technology can meet these needs within the Air Traffic Management (ATM) ecosystem. Participants acknowledged the challenges posed by emerging technologies, gained a comprehensive understanding of blockchain's potential to improve aviation security and efficiency, and endorsed the development of blockchain guidance materials by 31 October 2025 to support the ATM ecosystem.

Green air traffic management towards net-zero 2050

3.25. The meeting was presented the green Air Traffic Management (ATM) approach towards net-zero 2025, and upon discussions, the meeting suggested to elaborate more on this topic under the framework of the ICAO Committee on Aviation Environmental Protection (CAEP).

Outcomes of the Second Volcanic Ash Exercise (VOLCEX 2023/01) in the AFI Region (Secretariat)

3.26. The meeting was recalled that the AFI second volcanic ash exercise (AFI VOLCEX), held on 7 December 2023, simulated the eruption of the Nyiragongo volcano in the Democratic Republic of Congo, affecting eleven FIRs affecting major air traffic routes in Kinshasa, Brazzaville, Libreville, Douala, Bangui, Dar Es Salam, Entebbe, Kigali, Luanda, Bujumbura and Nairobi. The Exercise was directed and coordinated by the Democratic Republic of the Congo as the Exercise Leader State and involved agencies in the Democratic Republic of Congo, Republic of Congo, Gabon, Cameroon, Central African Republic, Tanzania, Uganda, Rwanda, Burundi and Kenya. The Bulletin Compiling Centre (Kenya), the Dakar and Pretoria Regional OPMET Data Bank (RODB Dakar and RODB Pretoria), Senegal, Cap Vert, IATA and the ICAO WACAF and ESAF Regional Offices participated in the exercise. Key objectives of the exercise included improving coordination, message distribution, and contingency management. While satisfactory results were achieved, areas needing improvement included NOTAM formats, stakeholder involvement, and message timeliness. The report of this second AFI VOLCEX is provided in **Appendix 10** to this report.

3.27. The meeting was also briefed on the outcomes of the AFI Volcanic Ash Exercise Steering Group's virtual meeting conducted on 26 July 2024, which discussed the next volcanic ash

exercise and acknowledged Kenya's proposal to lead VOLCEX 2025. The meeting formulated the following draft Conclusion accordingly.

<table>
<tr><td colspan="6">Draft Conclusion 7/03 : Conduct of the third volcanic ash exercise in the AFI Region</td></tr>
<tr><td>Why:</td><td colspan="5">That, to practice and develop inter-agency response to volcanic activity</td></tr>
<tr><td>What:</td><td colspan="5">a) The proposal of Kenya to lead the third volcanic ash exercise is endorsed
b) Kenya to direct and coordinate the third volcanic ash exercise in the AFI Region by 30 November 2025; and
c) ESAF and WACF Offices to facilitate the conduct of the volcanic ash exercise in the AFI Region by 30 November 2025.</td></tr>
<tr><td>Who:</td><td colspan="5">a) APIRG
b) Kenya
c) ESAF and WACAF Offices</td></tr>
<tr><td>When:</td><td colspan="5">b) and c): By 30 November 2025</td></tr>
<tr><td colspan="6">Implementation following-up</td></tr>
<tr><td>Follow-up required</td><td>Yes ☒
No ☐</td><td>Metrics</td><td>Metric 1: Approved volcanic ash exercise schedule
Metric 2: Final Report of the third volcanic ash exercise</td><td>Means to collect</td><td>Mean 1: State Letters
Mean 2: Coordination meetings</td></tr>
</table>

Update on the progress of the RBIS Project

3.28. The 25th Steering Committee meeting of the AFI Plan approved the revised AIM Results-Based Implementation Support (RBIS) project to support African States in implementing Quality Management Systems (QMS), Aeronautical Information Exchange Model (AIXM), and Terrain and Obstacle Data (TOD). The APIRG/25 meeting subsequently closed former AIM projects 1, 2 and 3 to avoid redundancy.

3.29. The AIM RBIS project, structured into three phases, has completed its initial phases, with the documentation developed and validated in March 2023.

3.30. An initial group of ten States was proposed to receive assistance activities. However, only two of these States committed to the project's Go-team activities. Given that many other States, not included in the initial list, may require support in implementing QMS, AIXM databases, electronic AIP, and TOD, the 25th AFI Plan Steering Committee meeting, held on 24 August 2023 in Nairobi, Kenya, approved a project revision. This revision extends assistance activities to all AFI States willing to accept the support.

3.31. Since the extension of the project, the following States committed to and received Go-team assistances in 2023 and 2024:

- QMS assistance: Guinea, Sierra Leone, Liberia, Democratic Republic of the Congo;
- AIXM/eAIP/TOD: Guinea, Sierra Leone, Liberia, Democratic Republic of the Congo; and
- TOD: Islamic Republic of Mauritania.

3.32. Go-team assistances are planned for the following States by the end of 2024:

- QMS: Nigeria;

- AIXM/eAIP/TOD: Benin; and
- TOD: Cote d'Ivoire, Togo and Gabon.

3.33. The project team continues to follow up on implementation, and the approach is recognized as good practice. The meeting therefore encouraged States to use the Project activities to improve AIM implementation

Update on the progress of the CODEVMET-AFI Project

3.34. The CODEVMET-AFI project, initiated in 2016, aims to address longstanding air navigation deficiencies in meteorology in the AFI region. Objectives include enhancing States capacities to meet ICAO's meteorological safety standards, supporting contingency planning, aligning national legislation with international requirements, ensuring a qualified workforce, developing quality management systems (QMS) and implementing the ICAO Meteorological Information Exchange Model (IWXXM).

3.35. In September 2023, the project's steering committee approved a revised project document and work plan. The project focuses on strengthening oversight capacities and implementing QMS, with activities led by subject matter experts.

3.36. To date, eight States (Botswana, Cameroon, Cabo Verde, Côte d'Ivoire, Gambia, Nigeria, and Togo) received assistance focused on reviewing and improving documents relevant to the implementation of critical elements of their States' safety oversight systems, covering the establishment (CE-1 to CE-5) and implementation activities (CE-6 to CE-8). Additionally, guidance materials and generic documents were provided to help States align their MET-related regulations with ICAO Standards and Recommended Practices (SARPs).

3.37. Assisted States' MET Service Providers were guided in aligning their practices with national regulations and ICAO/WMO requirements. These MET Service Providers were supported in developing a QMS implementation action plan that complies with the 9000 series standards, using the QMS implementation approach outlined in WMO Publication No. 1100. Assisted States and organizations were provided with guidance, generic documents, procedures, and tools that can be customized as needed. The followings were achieved so far:

- Four States (Cameroon, Cabo Verde, Senegal, and Togo) have received assistance for QMS implementation;
- One ANSP (ASECNA) is receiving assistance in developing MET-related contingency measures and procedures for utilizing space weather advisories; and
- Two States (Gabon and Sierra Leone) are scheduled to receive assistance by the end of the year.

3.38. The Codevmet safety and QMS teams will assist Senegal and ASECNA by the end of November 2024.

3.39. The meeting urged States to leverage the project's success to enhance regulatory capacity for safety oversight of aeronautical meteorological services and help MET service providers address critical air navigation deficiencies in the MET field.

Global Developments related to Global Interoperable Systems (GIS)

3.40. The meeting received a briefing on global developments concerning Global Interoperable Systems (GIS), with a focus on global planning, information management, and the interoperability of aviation information exchange systems. Key developments highlighted included:

- A significant update to the 8th edition of the Global Air Navigation Plan (GANP), which is being finalized for the 42 ICAO Assembly;
- The publication of PANS-IM scheduled for November 2024; and
- The release of guidance on information security, which will support PANS-IM and facilitate trusted information exchange, also scheduled for November 2024.

Introduction of the new SADIS API services

3.41. The meeting was briefed on the updates to the World Area Forecast System (WAFS), including the introduction of upgraded gridded data sets, new Significant Weather (SIGWX) forecasts, and new distribution systems via the SADIS and WIFS APIs. Both WAFC London and WAFC Washington have collaborated to develop the next-generation, SWIM-compliant SADIS and WIFS systems, which use the OGC-EDR API framework (https://ogcapi.ogc.org/edr/) for harmonized data retrieval. Key improvements include higher resolution WAFS data, new automated SIGWX forecasts with 6- to 48-hour coverage (at 3 hourly intervals) issued four times daily, and the use of the new IWXXM format.

3.42. The meeting was informed that new SIGWX forecasts are designed for digital use, allowing users to customize and interact with the data. The implementation of the new SIGWX forecasts, initially delayed until November 2024, will significantly enhance aviation weather forecasting. Current SIGWX charts will remain available through older systems until their retirement between 2026 and 2028.

3.43. In light of the above, the meeting encouraged users and stakeholders to transition to the new systems and formats, with relevant information and guidance provided in an updated SIGWX flyer provided in the **Appendix 11** to this report. The meeting then formulated the following draft Conclusion accordingly.

Draft Conclusion 7/04 : New SADIS API and WIFS API services	
Why:	*That, to prepare for the upcoming SIGWX changes and ensure the use of the new IWXXM format SIGWX data sets*
What:	*a) SADIS user States and Organizations to conduct awareness activities on the upcoming T+24 SIGWX changes effective on 26 November 2024 by sharing the SIGWX flyer or by directing them to https://www.metoffice.gov.uk/services/transport/aviation/regulated/wafs-2023 by end of December 2024; and* *b) States and Organizations to develop plans to upgrade their systems to be able to visualize the higher resolution WAFS gridded data sets and new IWXXM SIGWX data sets and use the new SADIS API by November 2025.*
Who:	*a) SADIS user States and Organizations* *b) States and Organizations.*
When:	*a) By end of December 2024*

	b) By November 2025				
Implementation following-up					
Follow-up required	Yes ☒ No ☐	Metrics	Metric 1: Number of States with capability SADIS API capabilities Metric 2: Conducted *awareness activities*	Means to collect	Mean 1: SL Mean 2: SL ….

Update on the Air Navigation Services Summit

3.44. The IIM/SG7 meeting recalled that the APIRG meetings from APIRG/21 to APIRG/26 focused on enhancing air navigation and traffic management in the AFI Region through coordinated efforts and strategic planning.

3.45. APIRG/21 emphasized the importance of aligning national air navigation plans with regional and global strategies, encouraging a regional modernization program. The meeting agreed on the Conclusion 21/01 calling for coordinated approach to Air Navigation Planning and Implementation and Conclusion 21/08 stating actions to be taken in relation to the seamlessness of Air Traffic Management in Africa. Subsequent meetings highlighted the need for a seamless AFI air traffic management system, with APIRG/22 and APIRG/23 calling for the development of an ATM Master Plan and the establishment of a project management team to drive this initiative through APIRG/22 Conclusion 22/35 and APIRG/23 Decision 23/01.

3.46. APIRG/25 stressed the significance of collaborative decision-making and infrastructure investment for a harmonized ATM system, leading to the planning of a Regional ATM Summit in 2024 as per APIRG/25 Conclusion 25/09.

3.47. APIRG/26 further considered the request for consolidation of all the initiatives by the various organizations, in delivering a Seamless Africa Sky under one single ICAO driven APIRG mechanism and called on the stakeholders to commit both financial and human resources and on the establishment of a Steering Committee to ensure the success of the AFI ANS Summit. The meeting acknowledged the request to use a project approach for the Summit. The meeting noted that similar initiatives are ongoing and emphasized the need for coordination. The APIRG/26 Decision 26/24 tasked IATA and the Secretariat to establish an ANS SUMMIT Taskforce made up of members from the States, ANSPs, Industry and ICAO to develop the implementation roadmap.

3.48. Preparations for the Summit were underway, with a roadmap and terms of reference discussed in early 2024. The summary of discussions of the first work@lab conducted in June 2024 in Bela Bela (South Africa) is in **Appendix 12** to the working paper. The meeting in reviewing the outcome of the first work@lab, noted major inconsistencies in some areas, including CNS and MET. The meeting raised concerns on the low level of participation of States and Regional Offices in the discussions due to the Work Lab model used for the conduct of activities. The meeting also discussed concerns raised by the Secretariat through a State letter (see **Appendix 13** to the report) regarding the alignment of the above-mentioned activities with the APIRG Procedural Handbook provisions and the need to consider outcomes of the ongoing activities such as the Aviation Infrastructures Gap analysis. The letter emphasized amongst other, the need for aligning the working method for the preparation of the ANS summit with the APIRG

procedural Handbook provisions and ensuring the full involvements of States and all the stakeholders. The IIM/SG7 meeting formulated therefore the following draft Conclusion.

<table>
<tr><td colspan="6">Draft Conclusion 7/05: Preparation of the Air Navigation Services Summit</td></tr>
<tr><td>Why:</td><td colspan="5">That, to foster the preparation of the AFI Air Navigation Service Summit.</td></tr>
<tr><td>What:</td><td colspan="5">a) The AFI ANS Summit is postponed; and
b) The Secretariat to coordinate with key stakeholders the review of:
i). the ANS Summit related terms of references to ensure its alignment with the provisions of the APIRG Procedural Handbook; and
ii). required activities for the effective conduct of the AFI Air Navigation Services Summit.</td></tr>
<tr><td>Who:</td><td colspan="5">a) APIRG
b) Secretariat.</td></tr>
<tr><td>When:</td><td colspan="5">a) b) by December 2025</td></tr>
<tr><td colspan="6">Implementation following-up</td></tr>
<tr><td>Follow-up required</td><td>Yes ☒
No ☐</td><td>Metrics</td><td>Metric 1: Established expert teams
Metric 2: Deliverables for the Summit</td><td>Means to collect data</td><td>Mean 1: e-mails
Mean 2: Online meetings
….</td></tr>
</table>

Update on the Enhancement of APIRG and RASG-AFI Structure

3.49. The meeting was informed that the APIRG/25 & RASG-AFI/8 joint session (Decision 4/04) tasked the Secretaries and Chairpersons of both groups, along with the ARC-TF, to explore integrating APIRG and RASG-AFI. This resulted in two structural options being presented at the APIRG/26 & RASG-AFI/6 joint session, where the majority favoured the Structure 1 provided in **Appendix 14** to this report. The Secretariat was tasked to gather additional feedback from States and stakeholders and develop a Procedural Handbook by June 2024. The draft Procedural Handbook and a transition schedule were reviewed at the Extraordinary Joint Meeting of APIRG and RASG-AFI in Libreville, Gabon, on 19 July 2024.

3.50. The Extraordinary Joint Meeting endorsed the new Structure of the merged body named Africa-Indian Ocean Aviation System Planning and Implementation Group (AASPG) and tasked the Secretariat to circulate the related Draft Procedural Handbook of the Group and the new Working Methods for further input by 30 September 2024, with the finalized version to be considered at the next APIRG and RASG-AFI meeting.

Agenda Item 4: Air Navigation Deficiencies

Update on Status of the implementation of CNS, AIM and MET related BBBs

4.1. The meeting discussed the global technical level of the Global Air Navigation Plan, focusing on the Basic Building Blocks (BBBs) and Aviation System Block Upgrades (ASBUs) frameworks.

4.2. The BBBs establish the foundation for a robust air navigation system, ensuring essential services for international civil aviation, while the ASBU framework builds on the BBBs to enhance system

performance. The below **Figure 1** (based on the implementation of PQs related to BBBs) highlights challenges experienced by State in implementing the essential services and facilities.

4.3. The meeting noted that key challenges in implementing BBBs include funding shortages, project prioritization issues, and low collaboration at regional level.

4.4. The meeting, therefore, emphasized the need for strategic planning, collaboration, and capacity-building to ensure harmonized, interoperable air navigation services. States are encouraged to actively participate in relevant meetings and activities for improvement.

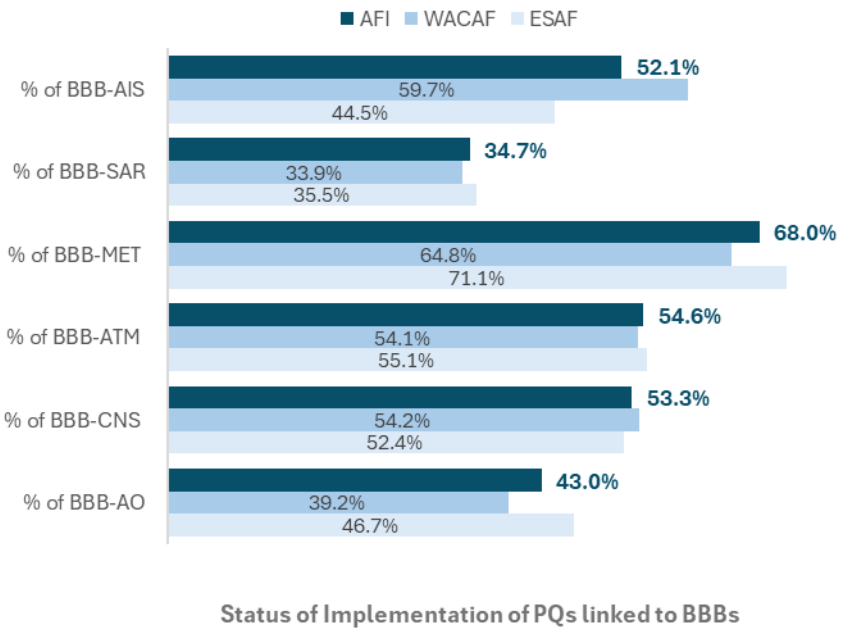

Figure 1 Status of implementation of PQs related to BBBs (Source of data: USOAP)

Scope of Minimum Reporting Areas

4.5. The APIRG/16 meeting in 2007 emphasized the need for African States to prioritize eliminating persistent air navigation deficiencies affecting safety. The APIRG/18 meeting in 2012 endorsed a list of minimum reporting areas to guide deficiency reporting, highlighting that this list complements, rather than replaces, ICAO Council policy. These minimum reporting areas are aligned with ICAO SARPs and cover various air navigation domains like AOP, ATM, SAR, CNS, AIM, and MET. The meeting therefore discussed on the inclusion of the implementation of ASBU elements required by ICAO SARPs within this reporting framework.

4.6. Specific examples include mandatory implementations such as GADS for emergency communication, FICE for ATS coordination, QMS for aeronautical data, and IWXXM for MET information exchange.

4.7. The meeting upon discussions, agreed that the scope of minimum reporting areas shall comply with the definition of the "air navigation deficiency" as approved by the Council of ICAO on 30

November 2001 and provided in the PART V of APIRG Procedural Handbook. The following draft Decision was formulated accordingly.

Draft Decision 7/06: Scope of the minimum reporting framework					
Why:	*That, to ensure consistency of the minimum reporting areas,*				
What:	*The list of minimum reporting areas shall be revised as appropriate by 31 December 2024*				
Who:	*APIRG*				
When:	*31 December 2024*				
Implementation following-up					
Follow-up required	Yes ☒ No ☐	Metrics	Metric 1: updated list of minimum reporting areas	Means to collect	APIRG Report

Status of Air Navigation Deficiencies in CNS, AIM and MET fields

4.8. The meeting was recalled that the APIRG/26 meeting acknowledged the operationalization of the online AANDD platform developed by the Secretariat, which supports the identification and resolution of air navigation deficiencies.

4.9. Several actions were undertaken by the Secretariat to assist States and concerned key stakeholders to manage effectively air navigation deficiencies. Unfortunately, few States participated in two workshops conducted in 2024 in Dakar, Senegal, on the Volumes I and II of the Regional Air Navigation Plan and the management of air navigation deficiencies.

4.10. The meeting also noted with concerns that the level of deficiency reporting is still low and urged therefore States (Regulatory bodies and ANSPs), Regional Offices, Users (IFALPA, IATA), Professional provider organizations (IFACTCA, IFATSEA) to effectively identify and notify air navigation deficiencies.

Agenda Item 5: Implementation challenges of the Sub-group

Implementation Challenges

5.1. The meeting noted that IIM/SG faces challenges hindering its support to States, including delayed project documentation submission, lack of expert participation, unavailability of facilitators, and language barriers. The meeting recommended timely submission of documents, regular progress meetings, updated team lists, facilitated expert involvement, and accelerated support for project teams. The following conclusion was formulated accordingly.

Draft Conclusion 7/07 : Revision of IIM Project membership	
Why:	*That, to enhance the effectiveness of APIRG IIM Projects,*
What:	*a) The Secretariat and the IIM Project Team Coordinators to consider qualified experts and revise project teams composition by 31 December 2024;* *b) The Secretariat to notify States and Organizations the designation of their experts by 31 December 2024;*

	c) States and Organizations to ensure the effective participation of experts in projects' activities and Subgroup meetings by 31 December 2024.				
Who:	*a) Secretariat, IIM Project Team Coordinators* *b) Secretariat* *c) States, Organizations*				
When:	*a), b) and c): 31 December 2024*				
Implementation following-up					
Follow-up required	Yes ☒ No ☐	Metrics	Metric 1: Revised project team composition Metric 2: Sensitization activities conducted	Means to collect	Mean 1: State letters Mean 2: Meetings with Project teams

Implementation of MET requirements in the ESAF Region- challenges and opportunities

5.2. The meeting was presented with the outcomes of ICAO ESAF Aeronautical Meteorology Seminar, held in June 2024 in Windhoek, Namibia, aimed at enhancing regional knowledge and capacity among MET experts while fostering collaboration and partnerships. Key outcomes included strengthened collaboration between ICAO, WMO and Member States. Increased partnerships between Civil Aviation Authorities (CAAs) and Meteorological Service Providers, improved meteorological information exchange through updated regional guidance and designated focal points, and continued capacity building to address aviation meteorology challenges were also included as key elements.

5.3. The meeting acknowledged these outcomes and encouraged ICAO in coordination with WMO, to identify possible mechanisms to assist States through APIRG regional projects in the implementation of aeronautical meteorological (MET) Standards and Recommended Practices (SARPs), including the implementation of quality management systems for the provision of MET services and improvement in the availability of OPMET data to the users.

Agenda Item 6: Activities to be coordinated with the AAO/SG and RASG-AFI SSTs

6.1. The meeting identified actions formulated by the IIM/SG7 meeting that need coordination with the AAO Subgroup or the RASG-AFI Safety Supporting Teams (SST). The following Decisions necessitate coordination with the AAO Subgroup.

IIM/SG7 Decision 7/01: Establishment of the Flight and Flow – Information for Collaborative Environment (FF-ICE) Project	
Why:	*That, to ensure a harmonized and timely implementation of FF-ICE in the AFI region,*
What:	*a) The proposed Termes of References of the FF-ICE Task force are approved for coordination with the AAO Subgroup by 30 October 2024;* *b) The IIM/SG to coordinate with the AAO/SG for endorsement of the proposed ToR by 30 October 2024;* *c) The FF-ICE Task force to develop the FF-ICE Project document and submit it to the Secretariat for APIRG consideration through the APCC by 30 Octobre 2024; and,*

	d) The FF-ICE Task force to conduct the awareness workshop called for by the APIRG Decision 26/17 by 28 February 2025.				
Who:	*a) IIM/SG* *b) The Secretariat* *c) FF-ICE Task force, Secretariat* *d) FF-ICE Task force*				
When:	*a) b) and c): 30 October 2024* *d) 28 February 2025*				
Implementation following-up					
Follow-up required	Yes ☒ No ☐	Metrics	Metric 1: Project document submitted to APIRG Metric 2: Workshop conducted	Means to collect	Mean 1: WP Mean 2: State Letter

Draft Conclusion 7/05: Preparation of the Air Navigation Services Summit					
Why:	*That, to ensure the effective implementation of APIRG Decision 26/24 on the preparation of the AFI Air Navigation Service Summit.*				
What:	*a) The AFI ANS Summit is postponed; and* *b) The Secretariat to coordinate with key stakeholders the review of :* *i). the ANS Summit related terms of references to ensure its alignment with the provisions of the APIRG Procedural Handbook; and* *ii). required activities for the conduct of the AFI Air Navigation Services Summit.*				
Who:	*a) APIRG* *b) Secretariat.*				
When:	*b) by December 2025*				
Implementation following-up					
Follow-up required	Yes ☒ No ☐	Metrics	Metric 1: Established expert teams Metric 2: Deliverables for the Summit	Means to collect data	Mean 1: e-mails Mean 2: Online meetings ….

Agenda Item 7: Proposed recommendations/actions to be taken by ICAO HQ

7.1. The meeting reviewed the outcomes of discussions. There is no recommendations/actions requiring the attention of the ICAO Headquarters (HQ).

Agenda Item 8: Conclusions/Decisions of the Seventh Meeting of the Infrastructure and Information Management Sub-Group (IIM/SG7)

8.1. The meeting reviewed and adopted six (6) draft Conclusions and two (2) draft Decisions as per **Appendix 2** to this report.

Agenda Item 9: Review of the Terms of Reference and the Work Programme of the Sub-Group

9.1. The meeting was reminded that the IIM/SG Sub-Group is mandated by APIRG to support the implementation of ICAO SARPs in the areas of MET, AIM, and CNS, with a focus on executing projects to assist States, identifying deficiencies, and proposing solutions. During discussions, concerns were raised about the low level of expert participation in project teams. The meeting then reviewed the Sub-Group's terms of reference, making no specific amendments, as reflected in **Appendix 15** of this report, and updated the Sub-Group's work programme, as provided in **Appendix 16** of this report. The following draft Decision was formulated accordingly.

<table>
<tr><td colspan="6">Draft Decision 7/08 : Work Programme of APIRG IIM/SG for 2024/2025</td></tr>
<tr><td>Why:</td><td colspan="5">That to support the implementation of the Subgroup objectives,</td></tr>
<tr><td>What:</td><td colspan="5">The Work Programme as provided in Appendix 16 is approved.</td></tr>
<tr><td>Who:</td><td colspan="5">APIRG/27 meeting</td></tr>
<tr><td>When:</td><td colspan="5">By November 2024</td></tr>
<tr><td colspan="6">Implementation following-up</td></tr>
<tr><td>Follow-up required</td><td>Yes ☒
No ☐</td><td>Metrics</td><td>Metric 1:
Approved Work Programme</td><td>Means to collect</td><td>Mean 1: APIRG/27 Meeting
Mean 2:</td></tr>
</table>

Agenda Item 10: Any other business

10.1. No subject was discussed under this agenda item.

Closing Ceremony

During the closing session, statements were delivered by Ms. Nokuthula Phakathi, Vice Chairperson of the IIM Subgroup, Mr. Issoufou Abdoulaye, Chairperson of the Subgroup and Mr. Manzi Nika Meheza, Deputy Regional Director, ICAO WACAF Office.

In his closing remarks, Ms. Nokuthula Phakathi, Vice Chairperson of the IIM Subgroup, thanked the participants of their active participation to the discussions and called for more collaboration in the implementation of regional projects.

The Chairperson of the IIM Subgroup, Mr. Issoufou Abdoulaye, commended the meeting for its effective participation and the valuable inputs that contributed to the deliberations. On behalf of the Secretariat of the Subgroup, he also acknowledged the tremendous contributions of Colleagues retiring soon, namely Mr. François Xavier Salambanga and Ms. Esther Gaborekwe Khambule to the Subgroup as former Chairpersons.

The closing remarks were delivered by the Deputy Regional Director, Mr. Manzi Nika Meheza, ICAO WACAF Office. He 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.

The Deputy Regional Director 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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