| **IIM Project references** | **IIM Project title** | **Date of Inception** | **Objectives** | **Scope** | **Implementation status** | **Comments** |
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| COM Project 1 | Implementation of Ground/Ground communication (ATS/DS, AIDC, VoIP) | APIRG/21 Decision 21/10 and Decision 21/11, **Oct. 2017** | Within the framework of the communication technologies roadmap defined in the GANP and the AFI strategy, assisting States in the implementation of :   1. **Air Traffic Service/Direct Speech (ATS/DS)** in accordance with the operational requirements of Annex 11, Chapter of Air Traffic Service, Doc 4444 Procedures for Air Navigation Services Chapter 10 and the provisions of Annex 10 Volume 2and 3. 2. **Data communication between air traffic services (AIDC: Air Traffic Service Interfacility Data Communication)** in accordance with the requirements of Annexes 10 and 11 and relevant guidance documents (Doc 4444, Doc 9694...) 3. **Voice over Internet Protocol (VoIP: Voice over Internet Protocol )** | * The provision of the coordination service between air traffic controllers will cover all air traffic control centers involved in the provision of air navigation service for international civil aviation. * The implementation scheme will be in accordance with the requirements for the provision of the Aeronautical Fixed Service (AFS) as defined by the AFI Air Navigation Plan (AFI/RAN Abuja 1997). * All AFI States (WACAF/ESAF); ATSU coordination via ATS/DS, AIDC, VoIP | * Implementation varies by State; delays due to interoperability, lack of capacity, absence of harmonized roadmap * COM1 Progress: Tasks were assigned and implementation guides drafted. A survey was circulated to assess ATS/DS, AIDC, and VoIP. AIDC guide was prioritized due to low uptake (~5%). * VoIP is delayed due to lack of expertise. * No meetings since Dec 2023; collaboration continues via email. | * Urgent need to strengthen or restructure the project team due to inactivity of several members. * Recommend segmenting the project into three clear workstreams (ATS/DS, AIDC, VoIP), each with defined leads, timelines, and deliverables. * Prioritize in-person validation of AIDC guide. * Facilitate VoIP-specific training for project team. * Consider regional pilots and corridor-based implementation to accelerate uptake. * Organize capacity-building workshops for project teams on ATS/DS, AIDC, and VoIP systems. |
| COM Project 2 | Implementation of Ground/Ground communication (AFTN, AMHS) | APIRG/21 Decision 21/10 and Decision 21/11, Oct. 2017 | In the framework of the technologies Roadmap for Communication defined in the GANP and the AFI strategy assist States in the implementation of :   1. Aeronautical Fixed Service Network (AFTN) 2. Air Traffic Service Message Handling System (AMHS);   in accordance with the operational requirements of Annex 3 Aeronautical Meteorology, Annex 10 Volume II Aeronautical telecommunication, Annex 11, Air Traffic Service, Annex 15 Aeronautical Information Service, and the relevant supporting guidance documents (Doc 9896 Manual for the ATN using IPS Standards and Protocols, Doc 9880, Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols Doc 9694 Manuel on Air Traffic Services Data link Applications | The exchange of aeronautical time sensitive operational data will cover all Air Traffic control Centers involved in the provision of air avigation service for international civil aviation.  The implementation scheme will be in accordance with the requirements of the provision of Aeronautical fixed Service (AFS) as defined by the AFI Air Navigation Plan (AFI/RAN Abuja 1997). | * Monitoring activities were conducted throughout 2024 to assess AMHS readiness in States. : Infrastructure gaps, training, fragmented coordination, low AMHS interconnection * Several States remain dependent on AFTN due to infrastructure or regulatory issues. * Transition to AMHS is hindered by technical limitations, financial constraints, lack of trained personnel, and insufficient inter-State coordination. * No significant progress in non-responding States.   The project continues to serve as a platform to identify bottlenecks and share implementation guidance. | * Recommend establishing an updated transition roadmap with priority targets based on traffic density and readiness. * Develop a regional AMHS capability map. • Promote bilateral testing and regional trials of AMHS links. * Organize targeted capacity-building workshops focused on AMHS system administration and interoperability. * Explore regional procurement or shared service models for low-capacity States. * Address regulatory gaps and harmonize AMHS operational procedures across FIRs. |
| COM Project 3 | Implementation of Air/Ground communication (HF/VHF voice data, CPDLC) | APIRG/21 Decision 21/10 and Decision 21/11, Oct. 2017 | To assist States in implementing Aeronautical Mobile Services (HF/VHF voice and data, CPDLC) in line with the GANP and AFI Communication Strategy. The project supports the deployment of ASBU elements COMI, COMS, and FICE, to enable effective and safe controller-pilot communications and improve data link infrastructure. | The project covers all FIRs and airspace within the ESAF and WACAF regions, supporting implementation of COM-related ASBU elements (e.g., ACARS, VDL, HFDL, SATCOM, CPDLC, AeroMACS) in line with the AFI AMS Plan. It targets both terminal and en-route airspace and promotes harmonization across FIR boundaries. | * A questionnaire was circulated and analyzed to assess State-level implementation of HF/VHF voice, data link, and CPDLC. * AFI HF/VDL Guidance Manual developed. * AFI Communication Strategy finalized. * ASBU implementation monitoring framework not yet operational. * CPDLC implementation remains limited and fragmented across the region. * Persistent challenges include frequency interference, power outages, limited technical capacity, lack of IP-readiness, and poor response rates from States. Implementation reports and updates are planned quarterly. | • Establish a baseline dashboard of ASBU COM elements implementation (COMI, COMS, FICE).  • Strengthen State engagement and response to project questionnaires (online tools, meetings)  • Organize virtual workshops (in EN/FR) on HF/VHF/CPDLC implementation and operations.  • Support States with guidance on IP-capable HF systems and SELCAL migration.  • Promote State collaboration with national communications authorities to mitigate frequency interference  • Encourage service provider engagement to improve datalink service availability.  Recommend exploring renewable energy solutions to address communication outages due to power failures.  Support implementation of remote HF/VHF systems and shared infrastructure initiatives. |
| COM Project 4 | Implementation of interoperable seamless telecommunication infrastructure | APIRG/21 Decision 21/10 and Decision 21/11, Oct. 2017 | To develop and implement a harmonized, interoperable, and modern aeronautical ground-ground communication infrastructure across the AFI Region, through convergence of existing VSAT networks, alignment with GANP/ASBU (COM1/B1/1) targets, and transition towards ATN/IPS. | The project applies to all ESAF and WACAF States. It targets modernization and interconnection of legacy VSAT networks (AFISNET, SADC/NAFISAT), enhancement of ground-ground data exchanges, and supports future integration of ATM, AIM, and MET systems under a Future Communication Infrastructure (FCI) concept. | • Project structure, objectives, deliverables, and milestones documented and updated  . • Gap analysis performed to assess interoperability between AFI VSAT networks.  • Questionnaire developed; project costing updated.  • Assessment of AFI VSAT reengineering and compliance ongoing.  • Initial alignment with ASBU COM1/B1/1 (ATN/IPS) and B0/2 (ATN/OSI) established.  • Technical coordination with ATNS and ASECNA has revitalized the project’s momentum.  • Interoperability level 3 between AFI networks not yet achieved; Frame Relay legacy systems still operational in some areas. | * Ensure harmonization of national/regional reengineering projects with AFI-wide interoperability objectives. * Promote IP VPN solutions (point-to-point/multipoint) as backup or complementary connectivity * Develop and circulate guidance on ATN/IPS deployment, focusing on IPv6 mobility, routing, security, and QoS. * Engage ATNS, ASECNA, NAMA, GCAA, and Roberts FIR in technical support. * Urgently address bandwidth limitations and avoid costly VSAT duplication by promoting shared infrastructures. * Align project outputs with future SWIM environments and digital data demands (e.g., FF-ICE, IWXXM). * Initiate regional roadmap discussions on phased ATN/IPS implementation (Blocks 1–3). * Avoid technology fragmentation by fostering multilateral agreements on access methods and standards. * Support military-civil interoperability and address security governance for seamless CNS integration. |
| COM Project 5 | Assessment of AFI Aeronautical Networks Cyber Security | APIRG/21 Decision 21/10 and Decision 21/11, Oct. 2017 | • Assess potential cyber threats targeting CNS/ATM systems in the AFI Region.  • Promote a strong culture of cybersecurity among ANSPs, CAAs, and stakeholders.  • Develop a regional Cyber Resilience Framework and raise awareness through workshops and guidance. | The project applies to all WACAF and ESAF States, ANSPs, and relevant regional aviation stakeholders. It supports cybersecurity risk management, regulatory analysis, capacity building, and the integration of cyber resilience into the AFI air navigation environment. | • Project documentation reviewed and updated; extension proposed to 2025. • AFI ANS Cyber Resilience Framework finalized and submitted (June 2023); updated in 2024 to align with ICAO and CANSO cybersecurity resources.  • Cyber risk assessment and regulatory analysis stages initiated. • Cost estimates provided.  • AFI Cybersecurity Workshop (Oct 2024) organized by ESAF | • Finalize and disseminate the updated Cyber Resilience Framework by September 2024.  • Actively involve States in the upcoming cybersecurity workshop, including tabletop exercises.  • Encourage adoption of ICAO Cybersecurity Strategy and culture initiatives at State and ANSP levels.  • Launch capacity-building activities for ANSP and CAA personnel on cybersecurity and risk mitigation.  • Establish mechanisms to report and share information on cyber threats and best practices regionally.  (explore collaboration with AVSEC) |
| NAV Project | Implementation of Conventional Nav’Aids and GNSS (Core and Augmented) | APIRG/21 Decision 21/10 and Decision 21/11, Oct. 2017 | • Support States in implementing ICAO SARPs related to conventional and satellite-based navigation systems  • Monitor and analyze status of VOR, DME, ILS, and GNSS  • Align regional navigation infrastructure with GANP, AFI Strategy, and ASBU Modules | All AFI States; covers implementation of VOR/DME, ILS, GNSS (core and augmented) Coherent with ATM operational concepts and regional navigation planning | • Project documentation developed including ToR and initial questionnaire for data collection  • Preliminary analysis of navigation aids based on AIPs for 23 States completed: 125% implementation for VOR/DME, 70% for ILS/DME (relative to ANP Vol II) • Use of Frequency Finder tool abandoned due to data inconsistencies; AIP data insufficient for operational assessments • NDBs gradually being phased out • Limited feedback from States and underrepresentation of officially designated team members delays comprehensive analysis | • States are urged to designate and officially confirm active NAV project team members  • Encourage responses to navigation aid questionnaires for reliable ground truth data  • Consider incorporating SATNAV-Africa JPO to strengthen technical input and GNSS guidance  • Secretariat to issue a State letter requesting updated nominations for the NAV team  • Organize in-person or hybrid sessions to boost member engagement and data validation |
| SUR Project | Implementation of Surveillance systems | APIRG/21 Decision 21/10 and Decision 21/11, Oct. 2017 | • Support the implementation of aeronautical surveillance systems in AFI States, including: a) Secondary Surveillance Radar Mode S (SSR)  b) Automatic Dependent Surveillance–Contract (ADS-C)  c) Automatic Dependent Surveillance–Broadcast (ADS-B), including space-based  d) Multilateration (MLAT)  e) Surveillance Data Sharing | All WACAF and ESAF States and concerned organizations. Focuses on increasing surveillance coverage, system interoperability, and collaborative data sharing in line with GANP and AFI strategy. | • Surveillance questionnaire developed and circulated to States via ICAO for infrastructure mapping; responses still pending.  • Project documentation repository established to consolidate ICAO surveillance-related references.  • Matrix developed to map links with other IIM and AAO projects for strategic alignment. • Regional workshop on Mode S II Codes and 24-bit address allocation successfully held in Ghana.  • Draft AFI Surveillance Strategy under review; final version expected by end 2024.  • Cost estimates prepared based on ICAO template. | • Encourage States to complete and return the surveillance infrastructure questionnaire.  • Finalize and publish the updated AFI Surveillance Strategy by December 2024.  • Ensure regular updates and accessibility of the documentation repository.  • Organize additional capacity-building workshops on ADS-B, MLAT, and Surveillance Data Sharing.  • Encourage participation of State-nominated surveillance experts to enrich technical discussions and foster regional collaboration. |
| SPEC Project | Development of Policies and Systems for protection of Aeronautical Frequency | APIRG/21 Decision 21/10 and Decision 21/11, Oct. 2017 | • Ensure protection of aeronautical frequency spectrum from harmful interference  • Promote coordination between Civil Aviation Authorities and Frequency Regulators  • Develop tools and frameworks for spectrum planning and interference prevention  • Support ICAO WRC positions and studies on adjacent band interference (e.g., 5G impact on radio altimeters) | All AFI States and Regional Frequency Coordination Entities. Covers all aeronautical bands relevant to safety-of-life services and critical CNS/ATM infrastructure. | • Project documentation aligned with GANP 6th edition and updated to reflect 5G-related risks to radio altimeters  • Draft MOU template developed to support coordination between CAAs and national Frequency Regulators  • Regional workshops conducted on ICAO Doc 9718 and the ICAO Frequency Finder Tool to support proper VHF planning  • Ongoing studies and engagement on protection criteria for 4.2–4.4 GHz band used by radio altimeters vs adjacent 5G bands  • Project cost estimates developed and submitted in July 2023 | • Promote signature of the CAA-Frequency Regulator MoUs based on the provided template  • Finalize technical guidance on 5G mitigation measures for radio altimeter protection  • Intensify awareness campaigns and training for States on ICAO tools and separation criteria  • Ensure AFI States’ participation in WRC preparation activities •  Encourage active engagement of States to report interference events and contribute to region-wide spectrum monitoring |
| AIM 4 | Monitoring of the Aeronautical information quality and Improvement of NOTAM | APIRG/25 Decision 25/15 Adoption of the Projects AIM/4 and AIM/5 | Deliver performance report on the improvement of aeronautical information quality by States, develop necessary assistance documents and tools and assist States in the provision of enhanced NOTAM. | ProDoc refers | Not started | The selection of qualified experts is underway |
| AIM 5 | Implementation of Aerodrome mapping data sets and Instrument flight procedure  data sets | APIRG/25 Decision 25/15 Adoption of the Projects AIM/4 and AIM/5 | Develop necessary assistance documents and tools and assist States in the implementation of Aerodrome (AD) mapping data sets and Instrument flight procedure (IFP) data sets. | ProDoc refers | Not started | The selection of qualified experts is underway |
| MET 1 | Provision of global, regional, and local meteorological products/Information | APIRG/21 Decision 21/10 and Decision 21/11, Oct. 2017 | Assist States to review and conduct gap analysis between their National ASBU Plans and  the Regional Air Navigation Plan.  b) Assist States in updating their National Plans to integrate ASBU elements applicable in  their area.  c) Assist States in the implementation of State ASBU implementation action plan.  d) Assist States in transitioning from current aeronautical meteorological information to the  future SWIM-enabled environment in the AFI region by assisting AFI States to  progressively develop capability of handling OPMET data in digital format (XML/GML)  and to start using XML/GML codes in operational environment by 2021. | AMET-B0/1 Meteorological observations products  • AMET-B0/2 Meteorological forecast and warning products  • AMET-B0/3 Climatological and historical meteorological products  • AMET-B0/4 Dissemination of meteorological products | Key Achievements:   * Development and deployment of MET services aligned with AMET-B0 elements. * Completion of project costing, enabling clearer planning and budgeting. * Ongoing efforts to review project materials and coordinate implementation activities across States.   Challenges Identified:   * Need for enhanced coordination and targeted support among participating States to achieve uniform implementation. | * The Thread AMET in 5th Edition of the GANP is continuing until 20231 * The Thread AMET Continuing Thread in 6th Ed of the GANP until 2037 |
| MET 2 | Provision of meteorological information in the ICAO Meteorological Information Exchange Model (IWXXM) format | APIRG/21 Decision 21/10 and Decision 21/11, Oct. 2017 | Assist States in  a) reviewing and conducting gap analysis between their National ASBU Plans and the  Regional Air Navigation Plan.  b) updating their National Plans to integrate ASBU elements applicable in their area.  c) Implementing of State ASBU implementation action plan.  d) transitioning from current aeronautical meteorological information to the future SWIM enabled environment in the AFI region by assisting AFI States to progressively develop  capability of handling OPMET data in digital format (XML/GML) and to start using  XML/GML codes in operational environment by 2024 | AMET-B1/1 Meteorological observations information  • AMET-B1/2 Meteorological forecast and warning information  • AMET-B1/3 Climatological and historical meteorological information  • AMET-B1/4 Dissemination of meteorological information | Collection and review of implementation data from States.  Successful organization of a Seminar on the Development of Meteorological Information Exchange Capabilities using IWXXM.  Completion of the project cost estimation.  Development and deployment of a regional questionnaire to assess the implementation of ASBU elements, with a focus on AMET-B1. | Implementation of AMET-B1/1, AMET-B1/2, AMET-B1/4 to support the implementation of IWXXM |
| MET 3 | Implementation of ICAO Annex 3 provisions relating to Space Weather requirements within the AFI Region | APIRG/23 Conclusion 23/29, Establishment of a Regional Space Weather Project, Nov. 2020 | Assist States in the implementation of:  a) The requirement for the provision of a space weather information service to support international air navigation as part of ICAO’s Global Air Navigation Plan (Doc 9750).  b) to assist the states within the ICAO AFI region to meet the space weather information  requirements in accordance with the ICAO Annex 3.  c) Create awareness of the space weather information requirement within the aviation sector  in the AFI region.  d) Engage with the States to ensure government support for the provision of space weather  for the safety of aircraft operations.  e) Report on the implementation of project activities | AMET-B1/1 Meteorological observations Information (Space weather events)  • AMET-B1/2 Meteorological forecast and warning information (Space weather events)  • AMET-B1/3 Climatological and historical meteorological Information (Enhanced  climatological data)  • AMET-B1/4 Dissemination of meteorological Information (Space weather events) | Development of guidance material and coordination mechanisms.  Completion of a regional gap analysis and formulation of national action plans.  Organization of three capacity-building workshops since 2021 (both virtual and in-person). | Requirement related to the implementation of space weather not fully implemented into national regulations.  Implementation of Space Weather requirements within the AFI Region |
| MET 4 | Implementation of Aeronautical Meteorological Personnel Competency Standards in the AFI Region | APIRG/25 Decision 25/17 Adoption of IIMSG MET Project 4 and MET Project 5, Nov. 2022 | Assist States in  a) Complying with the requirements of the World Meteorological Organization (WMO) in respect of  qualifications, competencies, education and training of meteorological personnel providing service  for international air navigation  b) Implementing a competency assessment process for aeronautical meteorological  forecasters (AMF) and aeronautical meteorological observers (AMO). | The Project will benefit all AFI States and interested Organizations that have noted yet  implementing competence standards for AMF and AMO as required by Annex 3 to Chicago convention. | Completion of a regional gap analysis through a questionnaire sent to States.  Collection of feedback from several States, including Angola, Djibouti, Eswatini, Ethiopia, Kenya, Mauritius, Seychelles, Uganda, Zambia, and Zimbabwe.  Successful organization of a virtual workshop on competency standards in November 2023, with participation from 19 States and ASECNA.  Presentations on project activities delivered at the ESAF In-Person Regional Aeronautical Meteorological Seminar in June 2024. | **Only 8,33%** of WACAF States ensure that the MSP comply with the competency requirements |
| MET 5 | Mitigation of the deficiencies related to the availability of the OPMET data in the AFI region | APIRG/25 Decision 25/17 Adoption of IIMSG MET Project 4 and MET Project 5, Nov. 2022 | Assisting States in:  a) Improving the availability of OPMET data to end-users in the AFI region  b) Providing timely, accurate and quality OPMET data to airspace users  a) the implementation of the OPMET-related SARPs in Annex 3 and Annex 10, and the relevant provisions of the ICAO Air Navigation Plan (ANP) for the AFI Region in a highly efficient and standardized way. | AMBEX Scheme :  • AMBEX collecting and disseminating centres (AMBEX centres)  • Regional OPMET data banks (RODBs)  • Inter-regional OPMET gateways (IROGs)  • Bulletin Compiling Centres (BCCs) | Development of the project document, including cost estimation.  Organization of a workshop in October 2023 to refresh States’ understanding of the AMBEX system and its procedures. | **BBBs (67%)**  The quality and availability of OPMET data remain a pending issue in the Region |