DRAFT CONCLUSION 20/49: IDENTIFICATION AND DEVELOPMENT OF PROJECTS AND PROJECT TEAMS

The following projects were identified:

- ✓ **Training and qualification of Technical staff (Regulators &Airport operators)**
- ✓ **Aerodrome Rescue and Firefighting Services (RFFS)**
- ✓ **Aerodrome Emergency Planning (AEP), including Public Health emergencies**
- ✓ **Aerodrome data management (determination, reliability and publication)**
- ✓ **Wildlife/ Environmental/ Land use Management/ obstacle control**
- ✓ **Implementation of Runway safety programmes at Aerodromes**
- ✓ **Aerodrome Maintenance and Runway conditions reporting**
- ✓ **Establishment and implementation of A-CDM**
- ✓ **Aerodrome Certification (SMS, regulatory framework, procedures and manuals, …)**

In addition, projects were grouped and assigned to Teams as follows.

Project Team 1

- ✓ **Training and qualification of Technical staff (aerodrome inspectors, aerodrome operator)**
- ✓ **Wildlife, Environmental & Land use Management/ Obstacle Control**

Project Team 2

- ✓ **Aerodrome Rescue and Firefighting Services (RFFS)**
- ✓ **Aerodrome Emergency Planning (AEP), including Public Health Emergencies**

Project Team 3

- ✓ **Aerodrome Maintenance and Runway Conditions Reporting**
- ✓ **Aerodrome data management (determination, reliability and publication)**
- ✓ **Establishment and implementation of A-CDM**

Project Team 4

- ✓ **Aerodrome Certification (SMS implementation, regulatory framework and operator documentation)**
- ✓ **Implementation of Runway safety programmes at aerodromes**

2.7.4 Due to the low participation of States to the AOP SG/11, the meeting agreed to refer the assignment of Teams to an Extraordinary AOP meeting

	PROPOSED PROJECTS	PRIORITY	RELATED ASBU MODULES & Regional Performance Objective	RELATED CURRENT ACTIVITY	REMARKS
1	**PBN Airspace Concept (Airspace Design)** **SO(s):** A, B, E **Objective:** To assist States in establishing airspace strategic objectives (improvement of safety, increasing capacity, mitigating environmental impact, etc.) for individual airspaces, associated airspace design and operational requirements to be enabled by specific PBN applications.	**A**	**B0-FRTO; B0-CCO, B0-CDO**	PBN Go Teams, PBN Workshops	In close coordination and partnership with the AFPP

2	**AORTA – (AFI Optimized Route Trajectories and Airspace)** **SO(s):** A, B, E **Objective:** To ensure coordinated implementation of terminal and en-routes including CCO & CDO, to achieve seamlessness (avoid loss of benefits bottlenecks) using PBN	**A**	**B0-FRTO: En-route, Terminal; B0-CCO, B0-CDO**	Review of the AFI ATS route network (PRND WG)	In close coordination and partnership with the AFPP
	a) ATS route network maintenance (ARNM)			Review of the AFI ATS route network (PRND WG)	To ensure continued effectiveness of network and accommodate new requirements
	b) Harmonization of En-route and Terminal Airspace Trajectories (HETAT)	**A**			To ensure seamlessness, facilitate airspace concepts, and enable CCO and CDO
	c) Flexible – User Preferred Routing Initiatives (FURIs)	**B**			

3	**AFI SSR Code Allocation and Assignment Review (ASCAAR)** **SO(s):** A, B **Objective:** To update the AFI SSR Code Allocation Plan and assignment standards in order to make codes available to all airspaces and improve usage to increase availability of each code.	A	**B0-ASUR** **B0-SNET**	Review and update of the AFI SSR Code Allocation Plan (ASCAA WG**)**	
4	**ATS Competency Study (ATSCS)** **SO(s):** A **Objective:** To identify shortcomings that lead to the existing low levels of competency in ATS in many airspaces, and establish effective remedial strategies and actions	**A**	**Not Applicable**	Study of shortcomings in competency and training of ATS personnel (ATSCSG)	
5	**Contingency Planning and Operational Coordination (CPOC)** **SO(s):** A, D, E **Objective:** To support the coordination required to develop contingency routes in order for States complete and promulgate CPs.	**B**	**Not Applicable**	Development of Contingency Plans (APIRG Concl. 17/66 as updated by 19/76)	Development of CP, Coordination of CR with Adjacent, Establishment of Sub-regional mechanism to coordinate operation of CP
6	**Assistance on State Safety Programme Implementation (ASSPI)** **SO(s):** A **Objective:** To support States in the implementation of SSP/SMS, in accordance with the GASP near term Safety Initiatives	**C**	**GASP Safety Initiatives**	APIRG and RASG-AFI Conclusions	

7	**Operational Requirements for CNS (OPREC)** **SO(s):** A, B, E **Objective:** To ensure up to date clarity on what operational improvements should be prioritized for specific areas at specific times, based on user requirements, and to clearly identify and provide guidance on minimum infrastructure (CNS) requirements, in order to facilitate coordinate planning and implementation of operational and infrastructure requirements	**A**	**B0-FRTO** **B0-ASUR** **B0-SNET**	Coordination between the ATM/AIM/SAR and the CNS Sub-Groups	While taking optimum advantage of existing technologies and infrastructure, to avoid unnecessary implementation infrastructure without operational requirement
8	**NAVSPEC and Separation Minima Transition (NASMIT)** **SO(s):** A, B, E **Objective:** To ensure regionally harmonized alignment of Doc 4444 aircraft separation minima as the implementation of PBN and various ASBU modules progresses.	**A**	**B0-FRTO**	Implementation of PBN (PBN/GNSS TF)	Coordinate transition from RNAV 10 to RNAV 5 and RNP 4 NAVSPECs, and where appropriate RNAV 2/1 and reduction of separation minima from 10 minutes
9	**Civil/Military Cooperation & FUA Seminar/Workshops** **SO(s):** A, B **Objective:** To facilitate optimum use of available airspace and other resources available to the military and civil operations; to support safety objectives	**C**		APIRG Conclusions and ICAO activities	
10	**RVSM & Operational Safety in ATS (ROSATS)** **SO(s):** A, B, E **Objective:** To ensure continued viability RVSM airspace through maintenance of safety objectives in the RVSM airspace; and	**A**	**B0-FRTO**	ARMA and TAG safety maintenance and enhancement activities	Support to APIRG and RASG strategic initiatives. SP AFI/08 RAN Rec APIRG Conclusions RMACG

	provide tactical safety resolution responses to both the RVSM strata and lower airspace safety issues.				Refer to the TAG/7 Meeting SoD.
	a) Analysis, Solutions and Monitoring of UCRs (ASMU)				Include performance of tasks identified for the Scrutiny Group by the SP AFI/08 RAN (i) generally monitor and analyse the safety of operations in the AFI Region (ii) classifying/categorising UCRs applying safety management principles in Doc 9859 (iii) identifying trends in operational errors, causal and contributing factors (iv) establishing priority needs to resolve safety issues
	b) Assistance to Resolve Immediate Safety Concerns in ATS (ARISC)				(i) informing relevant APIRG and RASG-AFI structure that may provide support (ii) providing direct support on operational solutions (iii) partnering with other parties to provide support

11	**Estimation, Reporting and Monitoring of Benefits from Operational Improvements (ERMBOI)** **SO(s):** A, B, E **Objective:** To make available reliable data and information the achievements of improvements and operational benefits in order to support monitoring and manage investments, etc.	**B**		APIRG Conclusions (18/58, 18/59)	Intensified use of the IFSET In coordination with designated Project Team in the IIM/SG
12	**Development of SAR plans for RCC/JRCC/RSC** **SO: A** **Objective:** Assist in the development of SAR Plans in order support the functional effectiveness of State SAR organizations	**A**		Integration of SAR Services; identifying solutions to impediments and developing regional guidance (ASSI TF)	
13	**Develop SAR legislation & Regulation for promulgation** **SO: A** **Objective:** To support the development of regulatory provisions forming the basic legal framework for SAR organizations and operations	**B**		Integration of SAR Services; identifying solutions to impediments and developing regional guidance (ASSI TF)	

INFORMAL STRUCTURES COMPLEMENTING THE FORMAL APIRG STRUCTURES:

a) **SAT** (South Atlantic Implementation Group (ICG) – An interregional Group (AFI, South America) for the coordinated implementation of ATM and CNS in the South Atlantic - AFI Area of Routing (AR2)
b) **"Go Teams"** (ATM, PBN, SAR) - Assistance missions of mission-specific experts triggered as and when need is identified. Modus operandi is "blitz" operations over a specific short period (usually 3 weeks or less) to effectively resolve a challenge or launch a complex concept. End of the mission is marked by tangible outcomes including ability of the target State/s to progress effectively. Go Teams can be triggered at regional level or by ICAO HQ.
c) **AIAG** (ATS Incident Analysis Group) – An AFI For the annual analysis of ATS incidents and investigation reports thereon in the AFI FIRs, validation of causal and contributing factors, recommending solutions and following up on implementation of the remedial actions.
d) **ASIOACG** (Arabian Sea/Indian Ocean ATS Coordination Group) - An interregional Group To, facilitate the optimum provision of Air Traffic Management (ATM) in the Arabian Sea and Indian Ocean region, through the development and implementation of improvements to ATM operational procedures
e) **INSPIRE** (Indian Ocean Strategic Partnership to Reduce Emissions) – An interregional Group, To implement User Preferred Routes (UPR) in the Arabia Sea and Indian Ocean airspace aimed at saving fuel and reducing CO2 emissions

OTHER SUPPORTIVE BODIES

f) **Regional Bodies –** AFCAC (African Civil Aviation Organization) has initiative and programmes intended to assist States implementation efforts.
g) **Sponsors and Funding organizations** – AfDB, etc.
h) **Sub-regional bodies** – Entities such as economic bodies (ECOWAS, EAC, SADAC, etc.) have direct and initiative that support implementation. Potential of their initiatives requires increased coordination at strategic and tactical levels
i) **Industry Initiatives** – Users and ANSPs (individually and through representative organization such as IATA and CANSO) have initiatives that support implementation on State by State level, sub-regional or regional levels in support of ICAO objectives

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AIM1

AFI Region	**PROJECT DESCRIPTION (DP)**	DP N° AFI AIM/3	
Programme	**Title of the Project**	**Start**	**End**
AIM (ICAO Programme Coordinator: George A Baldeh)	Assessment and development of QMS applied to AIM in AFI States Project coordinator**:** **(Kenya) Joseph Maina** Experts contributing to the Project: ATM/AIM/SAR/SG-14 and APIRG/IIM/SG Member States **: Angola, Senegal, Gambia, Nigeria, Tanzania, Mozambique, Angola, Ghana and Uganda**	1/6/2015	1/06/16
Objective	Implement guides applicable to the quality management system in a digital/electronic AIM environment in the AFI Region, based on the regional performance objectives of the AFI performance-based implementation plan.		
Scope	The scope of the project contemplates the assessment and identification of implementation levels associated to quality management in AIM services in the Region. Drafting of an action plan and guides for the implementation of QMS in a digital/electronic AIM environment.		
Metrics	Percentage of States with ISO 9001:2008 QMS certification.		
Goals	60% of States with the ISO standard 9001:2008 implemented by December 2015, and certified by 2016.		

Strategy	Project activities will be coordinated among project members, the Project Coordinator, and the Programme Coordinator, mainly through teleconferences (GoToMeeting application) and meetings that may be held within other scheduled events, based on the activities of the work programme. The Project Coordinator will coordinate with the Programme Coordinator for the inclusion of additional experts, if warranted by the tasks and work to be performed. The results of the work done will be submitted to the consideration and review of State experts in the form of a final consolidated document for analysis, review, and approval, and for presentation to the APIRG Infrastructure and Information Management Sub-Group (IIM/SG) by the Programme Coordinator.
Rationale	The quality management system in AIM services must provide users the required guarantee and assurance that the aeronautical information/data distributed meets quality requirements in terms of accuracy, resolution and integrity. There needs to be a close relationship with other projects in order to collect the operational requirements of the aforementioned applications and their respective tentative dates of implementation.
Related projects	This project is related to Projects AFI ANFR B0 30/DATM "Implementation of the provision of electronic terrain and obstacle data e-TOD" and "Implementation of Aeronautical Information Exchange Systems (AIXM)".

Project deliverables	**Relationship with the performance-based regional plan (PFF)**	**Responsible party**	**Status of Mentation***	**Delivery date**	**Comments**
Prepare surveys to establish the levels of compliance and implementation of AIM-QMS based on ICAO guides	PFF: AFI AIM/3	**Kenya** States to fill the questionnaire so that we may know the implementation status of each state		31/12/15	Delegate where necessary
Circulate surveys to the States	PFF: AFI AIM/3	ICAO coordinator		31/12/16	

Collect and tabulate the information of the States	PFF: AFI AIM/3	ICAO coordinator		31/12/16	
Description of steps for QMS implementation.	PFF: AFI AIM/3	Implementation is the middle stage of the QMS process and implementation can only be done after completing preparation and documentation stages		31/12/15	
QMS self-assessment questionnaire	PFF: AFI AIM/3	After staff training on QMS a questionnaire can be done to check on the buy in by staff		31/12/15	
Template with QMS assessment results	PFF: AFI AIM/3	This can only be available after the results of the questionnaire		31/12/15	
QMS implementation plan	PFF: AFI AIM/3	1 Start with Document control 2 Explain the requirements of ISO to the staff 3 Assign staff members to write work instructions 4 Document the main steps		31/12/15	
QMS procedures and preventive actions.	PFF: AFI AIM/3	-these are actions taken to stop it from happening, or to stop it from becoming too severe.		31/12/15	

		-adequate monitoring and controls must be in place in the quality system to ensure that potential problems are identified and eliminated before they happen. Can be done by: e.g. ☐ management review process ☐ Process / Performance monitoring ☐ Analysis of warranty data and customer feedback for trends ☐ Process analysis etc			
QMS internal audit procedure.	PFF: AFI AIM/3	• Define the audit programme -Implement the audit programme -Review the audit programme -Improve the audit programme - Use trained Auditors -Use the internal audit work instructions prepared by the company		31/12/15	
Procedure for controlling AIS service	PFF: AFI AIM/3	-a record is generated to state results achieved or to provide evidence of activities		31/12/15	

management system records		performed. -The procedure should be as detailed in the ISO standard para 4.2.4			
Procedure for drafting QMS documents.	PFF: AFI AIM/3	This is the order 1 Quality Manual 2 QMS Procedures & Forms that describe the QMS and specific QMS processes applicable across all departments / areas 3 Local work instructions, forms, or other process specific documentation applicable only to a specific department / area process Template available		31/12/15	
Service control procedure – QMS non-conforming products.	PFF: AFI AIM/3	An ISO procedure document for Control of non- conforming products should be published. The following should be clearly listed in the document 1 Identification 2 Containment 3 Disposition Option 4 Eliminate		31/12/15	

		5 Authorize use 6 Preclude original use 7 Correct per Disposition 8 Corrective Action			
Procedures for controlling the documents of the AIS service management system.	PFF: AFI AIM/3	-Preparation, Review and Approval of Documents -Formatting -Documents revision Coding and Status -Receiving and distribution of External Documents -Outgoing documents -Filling and storage -Obsolete documents		31/12/15	
SLA with service providers to ensure the quality of the information and the AIM data exchange.	PFF: AFI AIM/3	Sample available MOU between KCAA and KAA and a Quality manual for AIS Kenya		31/12/15	

Collect certifications and produce report on the status of ISO 9001:2008 certifications in the AFI Region	PFF: AFI AIM/3	ICAO Coordinator		31/12/16	
Resources required	Designation of experts in the execution of some of the deliverables. More commitment by States to support the designated coordinators and experts. Funds to conduct the meetings, missions and to translate reports, regional guides and manuals. Likewise, participants must be given facilities to participate in Go To Meetings. Funds to conduct audit trials. States could cover the cost of trials by their lead auditors, since the experience obtained will contribute to improve the system. Likewise, participants must be given facilities to participate in GoTo Meetings.				
Rmks	I find the table not exhaustive enough. The table would have documented the certification process and requirements 1 To prepare for QMS the following documents need to be prepared a) Quality Manual b) Quality Policy c) Control of documents d) Control of records e) Control of non performing products/services f) Continual improvement g) Management review and internal audit h) A management representative must be appointed to drive the process 2 Training should be done to both staff and management 3 train internal auf An internal auditors 4 Carry out an internal audit				

	5 Carry out corrective action on any findings 6 Invite an external auditor for certification (This one has its own process) 7 There is no item on ISO maintenance **Am Unable to change the Dates, these will have to be agreed upon by members the reason being states are at different stages of implementation which means the time lines will vary from state to state**

**Grey*	*Task not started*
Green	*Activity underway as scheduled*
Yellow	*Activity started with some delay but expected to be completed on time*
Red	*It has not been possible to implement this activity as scheduled; mitigating measures are required*

AFI QMS PROJECT MEMBERS

PROJECT A3

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10.	Ali Sarr	ASECNA	alisarr2000@yahoo.fr; sarrli@asecna.org,
11	Assane Bousso	ASECNA	abousso2006@hotmail.com.

AFI Region	**PROJECT DESCRIPTION (DP)**	DP N° AFI AIM/2	
Programme	**Title of the Project**	**Start**	**End**
AIM (**ICAO Programme Coordinator:** **George AY Baldeh**)	AFI AIM/2: Implementation of Aeronautical Information Exchange Systems (AIXM) (AFI) Project coordinator: **Athanase AHOUANGAN-ASECNA** Experts contributing to the project: ATM/AIM/SAR/SG-14 and APIRG/IIM/SG **Member States : Angola, Gambia, Mali, Tanzania, Kenya, Uganda, Mozambique, Ghana, Nigeria, Senegal and ASECNA**	1/06/15	31/12/16
Objective	Prepare an action plan to be implemented by States for the application of the aeronautical information/data exchange model.		
Scope	The scope of the project contemplates the evaluation and identification of automation levels associated to the integration of the aeronautical information and data exchange model in the Region, through surveys, the identification of database providers, and the follow-up on the development of SARPs on this matter.		
Metrics	Number of States that have implemented an Action Plan for data exchange systems.		
Goals	Complete all the documentation needed by States before 31/12/16.		

Strategy	Project activities will be coordinated among project members, the Project Coordinator, and the Programme Coordinator, mainly through teleconferences (GoToMeeting application). Seminars/meetings are scheduled in accordance with work programme activities. The Project Coordinator will coordinate with the Programme Coordinator for the inclusion of additional experts, if warranted by the tasks and work to be performed. Coordination will take place between States in AFI Region and Stakeholders. The results of the work done will be submitted to the consideration and review of State experts in the form of a final consolidated document for analysis, review, and approval, and for presentation to the APIRG Infrastructure and Information Management Sub-Group (IIM/SG) by the Programme Coordinator.
Rationale	Integrate aeronautical information so as to permit the interoperability of ATM systems while preserving safety, applying the information exchange models.
Related projects	This project is related to Project AFI ANFR B0 30/DATM "Implementation of the Quality Management Systems in the AIM units in AFI States".

Project deliverables	**Relationship with the performance-based regional plan (PFF)**	**Responsible party**	***Status of Implementation**	**Delivery date**	**Comments**
Survey of the provision of IAIP, using a table.	PFF: AFI AIM/2	Programme coordinator		30/11/15	Send IAIP table to the state by WACAF/EASF letter before APIRG/20 meeting
Circulation of IAIP survey to States	PFF: AFI AIM/2	Programme coordinator		31/12/15	APIRG/20 is an occasion to sensitize state to give reply

Collection and updating	PFF: AFI AIM/2	Programme coordinator		*30/03/16*	Centralise state reply and have a reel situation
Collection of experiences in AFI States with the electronic AIP	PFF: AFI AIM/2	Programme coordinator		*30/06/16*	From IAIP table established with state reply, send a letter to state who has implemented eAIP in order to have synthetic view on implementation experiences
Organise AIXM seminar	PFF: AFI AIM/2	Programme coordinator		August 16	
Analyse Eurocontrol AIXM specifications	PFF: AFI AIM/2	Project coordinator		31/10/16	After AIXM seminar, specifications analyse will be done by project members. A summary will be provided to Programme coordinator.
Develop guidance material	ASBU: BO30 DATM	Project coordinator		31/11/16	From EUROCONTROL AIXM specifications Project members will provide a guidance materiel
Develop AIXM action plan for the States	PFF: AFI AIM/01 ASBU: BO30 DATM	Project coordinator		31/12/16	AIXM plan will be available to be proposed to the state .

Resources required	Designation of experts in the execution of some of the deliverables. Commitment by States to support the coordinators and experts. Funds to conduct the meetings, missions and to translate reports, regional guides and manuals. Likewise, participants must be given facilities to participate in Go To Meetings. Funds to conduct audit trials. States could cover the cost of trials by their lead auditors, since the experience obtained will contribute to improve the system. Likewise, participants must be given facilities to participate in GoTo Meetings.

**Grey*	*Task not started*
Green	*Activity underway as scheduled*
Yellow	*Activity started with some delay but expected to be completed on time*
Red	*It has not been possible to implement this activity as scheduled; mitigating measures are required*

AFI AIXM PROJECT MEMBERS

PROJECT A2

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13	Athanase AHOUANGAN	ASECNA	ahouanganath@asecna.org/athanasea@gmail.com

AFI Region	**PROJECT DESCRIPTION (DP)**	DP N° AFI AIM/1	
Programme	**Title of the Project**	**Start**	**End**
AIM (**ICAO Programme Coordinator:** **George Baldeh**)	Implementation of the provision of electronic terrain and obstacle data (e-TOD) (AFI Region) Project coordinator: (NIGERIA)- Mr Felix ANYANWU Experts contributing to the project: ATM/AIM/SAR/SG-14 and APIRG/IIM/SG **Members :** South Africa, Tanzania, Angola, Nigeria etc	1/06/15	31/12/17
Objective	Support the implementation of the provision of e-TOD by AFI States, and provide guidance to States on GIS acquisition and management.		
Scope	The scope of the project contemplates the assessment and identification of implementation levels associated to the provision of electronic terrain and obstacle data. It contemplates the drafting of an Action plan and guides for the implementation of e-TOD to support developments in the provision of electronic terrain and obstacle data for the evolution of digital terrain models (DTM) to gradually improve electronic aeronautical charts and other similar products, with the support of tools such as the Geographical Information Systems (GIS).		
Metrics	• Number of States that have implemented GIS or automated systems. • Guide-document with action plan approved. • Number of States that establish SLAs. • Main International Airports with Area 2 (eTOD) surveyed		

Strategy	The conduction of project activities will be coordinated among project members, the Project Coordinator, and the Programme Coordinator, mainly through teleconferences (GoToMeeting application) and meetings that may be held within other scheduled events, based on the activities of the work programme. The Project Coordinator will coordinate with the Programme Coordinator for the inclusion of additional experts, if warranted by the tasks and works to be executed. The results of the work done will be submitted to the consideration and review of State experts in the form of a final consolidated document for analysis, review, and approval, and for presentation to the APIRG/20 by the Programme Coordinator.
Goals	Draft the Guide-document containing the objectives of the e-TOD project. 2015. Define the technical and e-TOD project specifications. 2015. Prepare the document containing the e-TOD technical specifications. 2015. Guide on the acquisition of a Geographical Information System (GIS). 2015. GIS implementation Manual. 2015. Available Methodology and tools for surveying Area 2. 2016 Main International Airports with Area 2 surveyed. 2016-2017
Rationale	Compliance with the SARPs of Annexes 15 and 4 to facilitate the execution of performance-based air operations and to advance with the AIS-AIM Transition Roadmap. A close relationship with other projects is needed in order to obtain the operational requirements of the aforementioned applications and their respective tentative dates of implementation.
Related projects	This project is related to Project AFI ANFR B0 30/DATM “Implementation of the Quality Management System in the AIM units” in the AFI Region States.

Project deliverables	Relationship with the performance-based regional plan (PFF)	Responsible party	Status of implementation*	Delivery date	Comments
Survey on the status of e-TOD implementation.	PFF: AFI AIM/1	TBD		31/12/2015	
Generate follow-up report.	PFF: AFI AIM/1	TBD		31/12/2015	
Develop Guide-Document with the objectives of the e-TOD project.	PFF: AFI AIM/1	TBD		31/12/2015	
Define the technical specification of the e-TOD project.	PFF: AFI AIM/1	TBD		31/12/2015	Acquire a mobile Mapper and one day training on the equipment. This is a GPS with a high accuracy as per ICAO requirement. Pick the coordinates of all obstacles which are 100m high within the FIR and publish them. The equipment conforms to the accuracy given in annex 15. This will do for area 1

Develop the document with the e-TOD technical specifications.	PFF: AFI AIM/1	TBD		31/12/2015	We have developed specifications for acquiring obstacle data for area 2 which are hereby Attached. This was for our use for awarding the Contract to a consultant.
Guide for the acquisition of a geographical information system (GIS).	PFF: AFI AIM/1	TBD		31/12/2015	For e-TOD we use ERDAS IMAGINE II
GIS implementation manual.	PFF: AFI AIM/1	TBD		31/12/2015	
Present to States the different options available for surveying Area 2	ASBU:BO30 DATM	TBD		31/12/2015	Using a consultant who have the necessary tools to provide data for area 2a,2b,2c,and 2d
Conduct seminars for e-TOD specialists, describing the plans and expected operational and economic benefits.	PFF: AFI AIM/1 ASBU:BO30 DATM	ICAO Coordinator		31/12/2016	*Encourage National initiatives of States to organize seminars to sensitize all e-TOD stakeholders*

Resources required	Designation of experts in the execution of some of the deliverables. More commitment by States to support the designated Coordinators and experts. Funds to conduct the meetings, missions and to translate reports, regional guides and manuals. Likewise, participants must be given facilities to participate in Go To Meetings. Funds to conduct audit trials. States could cover the cost of trials by their lead auditors, since the experience obtained will contribute to improve the system. Likewise, participants must be given facilities to participate in Go-To Meetings.

**Grey*	*Task not started*
Green	*Activity underway as scheduled*
Yellow	*Activity started with some delay but expected to be completed on time*
Red	*It has not been possible to implement this activity as scheduled; mitigating measures are required*

AERONAUTICAL METEOROLOGY PROJECTS IN THE AFI REGION DURING 2015-2018

AFI Region	**Project Description**		
Programme	**Title of the Project**	**Start**	**End**
Aeronautical Meteorology *(***B0-AMET PFF Project Facilitators:** ***ICAO ROs/MET, Dakar & Nairobi)***	Implementation of information concerning en-route weather phenomena which may affect the safety of aircraft operations (SIGMET), Quality Management System for aeronautical meteorology (QMS/MET) service, in the AFI region **B0-AMET PFF-1** *Project-Team Coordinator: Name (State)* *12 Experts contributing to the* **B0-AMET PFF-1** *Project-Team: Name (State), Name (State), Name (State), Name (State), Name (State), Name (State), Name (State), Name (State), Name (State), Name (State), Name (State) and Name (State)*	2015	2018
Objective	Assist States in the implementation of : a) SIGMET and standards and recommended practices of Annex 3 and Part V – MET of the AFI Air Navigation Plan (ANP), Volumes I, II, III concerning the issuance and distribution of en-route weather phenomena including volcanic ash clouds (WV), tropical cyclones (WC) and other phenomena (WS - thunderstorms, severe turbulence, icing, mountain waves, heavy sandstorms and duststorm), likely to affect the safety of aircraft operations, and the evolution of such phenomena in time and space (SIGMET WV, WC and WS); b) QMS/MET and certification where applicable, by developing a regional QMS/MET guide to assist States in the production of MET documentation under ISO 9001: 2008, enhancing the training of MET personnel in States that have not implemented QMS, encouraging States to institute cost recovery mechanism to support QMS maintenance in accordance with ICAO Annex 3 and Part V – MET of the AFI ANP, and conducting audit trials; c) An action plan to assist concerned States in their effort to remove air navigation deficiencies in the MET field listed in the APIRG report; and d) The transition plan from current aeronautical meteorological information to the future SWIM-enabled environment in the AFI region by encouraging 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 2018.		

Scope	a) The SIGMET part of the project will comprise all Meteorological Watch Offices (MWOs) listed in Table MET II-1 of the AFI ANP Volume II; b) QMS part of the project is related to all AFI aerodromes listed in the AFI ANP Table MET II-2 for the establishment and application of a duly organized quality system of MET service; c) The list of States having long lasting MET deficiencies, is listed in the last report of the APIRG meeting; and d) The Transition Plan part of the project is related to all AFI aerodromes listed in the AFI ANP Table MET II-2.
Metrics	a) SIGMET metric: Number of MWOs listed in AFI ANP Table MET II-1, with SIGMET procedures implemented in December 2017 b) QMS metrics: Number of MET Provider States listed in AFI ANP Table MET II-2, with QMS/MET certified or recertified in December 2018 c) Deficiency metrics: Number of identified States in APIRG/20 report, with MET deficiencies removed in December 2018 d) d) Transition Plan metrics: Number of AFI States implemented OPMET data in digital format (XML/GML) in December 2018
Strategy	All tasks will be carried out by MET experts nominated by AFI States participating in the project, led by the Project-Team Coordinator and under the supervision of the B0-AMET PFF Project Facilitators (ROs/MET, Dakar and Nairobi) through the "GoTo Meeting" tool. Upon completion of the tasks, the results will be sent to the B0-AMET PFF Project Facilitators as a final document for submission to, and if necessary approval by the APIRG Projects Coordination Committee (APCC). For the purpose of collaborative decision-making, meetings will be held with the areas involved.

Rationale	a) SIGMET: The lack of implementation by about 21% of AFI MWO Provider States, of information concerning en-route weather phenomena which may affect the safety of aircraft operations (SIGMET), in the region and their repercussions on the provision of air navigation services call for tools to allow the personnel involved in the different air navigation areas to receive, properly use, and disseminate quality information related to such events. b) QMS: More accurate and timely meteorological information will optimize flight path planning and prediction, thus improving ATM safety and efficiency; improved aerodrome reports and forecasts will optimise the use of available aerodrome capacity; and meteorological information will minimize the environmental impact of air traffic. Performance management will be an important part of meteorological information quality assurance. c) Deficiencies: The decrease or removal of MET deficiencies listed in the APIRG meetings, will increase air navigation safety and efficiency in the region. d) d) Digital OPMET: progressive implementation of digital OPMET (SIGMET, METAR, SPECI and TAF) in the AFI region, will enable AFI States to be prepared for digital OPMET exchange in the future SWIM environment.
Related projects	All APIRG specifically projects related to: ✓ Implementation of Improved Airport Operations through Airport-CDM (B0-ACDM) ✓ Implementation of Optimization of Approach Procedures including Vertical Guidance (B0-APTA) ✓ Implementation of Improved Operations through Enhanced En-Route Trajectories (B0-FRTO) ✓ Implementation of Improved Flexibility and Efficiency in Descent Profiles (CDO) (B0-CDO) ✓ Implementation of Improved Flexibility and Efficiency in Departure Profiles —Continuous Climb Operations (CCO) (B0-CCO)

Project Deliverable		**Relationship with the performance - based regional plan**	**Responsible Party**	**Status of Implementation**	**Date of Deliver**	**Comments**
SIGMET	updated AFI regional SIGMET Guide distributed and placed on ICAO website	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinators	New edition drafted	Before October 2015 (after APIRG/20)	Guide updated based on the regional SIGMET
	Current level of implementation of SIGMET assessed through annual SIGMET trials	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project Team Leader	Yearly SIGMET Tests	December 2015	Results of SIGMET Tests in November 2015 will update the level of implementation
	An updated list of States not compliant with SIGMET format, established	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator		December 2015	
	Details guidance to States not issuing SIGMET, distributed	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project		December 2016	

QMS	A Regional QMS/MET guide to assist States in the production of MET documentation under ISO 9001: 2008, developed, distributed and placed on ICAO website	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project Team Leader		June 2016	
	An updated list of States not implementing or partially implementing QMS, established and placed on ICAO website	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project Team Leader		December 2015	
	Training of MET personnel in States that have not implemented QMS, performed, and training workshop	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator		December 2017	

	report distributed		☐ AFI B0-AMET-1 Project			
	Training on cost recovery mechanism for MET performed; training workshop report encouraging Sates to institute cost recovery mechanism, distributed.	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project		December 2015	
	Report on QMS/MET Audit trials, distributed and placed on ICAO website	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project		December 2015	
Deficiencies	Current air navigation deficiencies in the MET field, assessed and confirmed	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator	MET deficiencies established by APIRG/19	December 2015	Updated MET deficiencies to be established
	An updated list of MET deficiencies for remaining AFI States not listed in APIRG/19 report, established	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project		December 2016	
	An updated list of deficiencies including States not compliant with SIGMET format, established	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project Team Leader		December 2015	

	List of States having develop action plans to eliminate Terminal Area Warnings deficiencies, distributed	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader		December 2018	
	Reports on Specific training workshops in French and English to assist States concerned to address deficiencies related to the implementation of the AMBEX scheme and for the provision of further advice and awareness, issued and distributed	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader		December 2016 and June 2018	

Deficiencies	An action plan to assist concerned States to remove long lasting MET deficiencies, established	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project Team Leader		December 2017	
Digital OPMET	Dakar and Pretoria RODBs Provider States developed capability of handling digital OPMET (SIGMET, METAR, SPECI, TAF) and provided technical assistance as required to other AFI States	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project Team Leader		December 2016	In accordance with the AFI digital OPMET transition plan
	Dakar and Pretoria RODBs Provider Sates assisted AFI States including BCC and NOC Provider States, in developping capability of handling digital OPMET	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project Team Leader		December 2017	In accordance with the AFI digital OPMET transition plan
	AFI States implemented digital OPMET in BCC and NOCs in accordance with Amendment 77 to ICAO Annex 3	**AFI B0-AMET PFF-1**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-1 Project Team Leader		December 2018	In accordance with the AFI digital OPMET transition plan

- ✓ Funds to conduct the meetings, missions and to translate reports, regional guides and manuals. Likewise, participants must be given facilities to participate in Go To Meetings.
- ✓ Funds to conduct audit trials. States could cover the cost of trials by their lead auditors, since the experience obtained will contribute to improve the system. Likewise, participants must be given facilities to participate in GoTo Meetings.

AFI Region	**Project Description**		
Programme	**Title of the Project**	**Start**	**End**
Aeronautical Meteorology **(B0-AMET PFF**	Implementation of Terminal Area Warnings and Forecasts, Provision of WAFS Forecasts and Optimization of OPMET data exchanges in the AFI Region **B0-AMET PFF-2** *Project-Team coordinator: Name (State)*	2015	2018
Objective	Assist States in the implementation of : a) Aerodrome warnings and forecasts (AD WRNG) and wind shear warnings and alerts (WS WRNG) in accordance with ICAO Annex 3, Tables A6-2 and A6-3, concerning the preparation, issuance and distribution at the terminal area, of concise information of meteorological conditions which could adversely affect aircraft on the ground, including parked aircraft, and the aerodrome facilities and services. For aerodromes where wind shear is considered a major safety factor, wind shear warnings will give concise information on the observed or expected existence of wind shear which could adversely affect aircraft on the approach path or take-off path or during circling approach between runway level and 500 m above that level and aircraft on the runway during the landing roll or take-off run. Where local topography has been shown to produce significant wind shears at heights in excess of 500 m above runway level, then 500 m will not be considered restrictive. b) the world area forecast system (WAFS) in the standards and recommended practices of Annex 3 and Part V – MET of the AFI, Volumes I, II and III with regard to the use of WAFS products, by which the world area forecast centre (WAFC) in London provides aeronautical meteorological en-route forecasts in uniform standardized formats and disseminated in the AFI region through the Satellite Distribution System for information relating to air navigation (SADIS). States will be also assisted in the implementation of the International Airways Volcano Watch (IAVW) including the implementation of the operational procedures in ICAO Doc 9766 and the AFI Volcanic Ash Contingency Plan (VACP) activities; c) AFI OPMET data Exchange Management and OPMET databanks (RODBs) described in the AFI Meteorological Bulletin Exchange (AMBEX) Handbook in accordance with the provisions in ICAO Annexes 3 and 10 and AFI ANP Volumes I, II and III part V- Meteorology, for the preparation, issuance, distribution and monitoring of OPMET information (METAR, SPECI, SIGMET, TAF, AIREP, Volcanic Ash and tropical cyclones advisories).		

Scope	a) The terminal area warnings part of the project will comprise all AFI International aerodromes listed in Table MET II-2 of the AFI ANP Volume II and aerodromes affected by wind shear events; c) The AMBEX part of the project will include AFI aerodromes listed in Table MET II-2 of the AFI ANP including Dakar and Pretoria RODBS, Bulletin Compiling Centres (BCCs), National OPMET Centres (NOCs), AFI volcanic ash advisory centre (VAAC) in Toulouse, tropical cyclone advisory centre (TCAC) in La Reunion and WAFC in London.
Metrics	a) Terminal area warnings metric: Number of international aerodromes listed in AFI ANP Table MET II-1, with Aerodrome warnings and wind shear implemented in December 2017 b) WAFS and IAVW metrics: Number of MET Provider States listed in AFI ANP Table MET II-2, with SADIS 2G/secure SADIS FTP implemented in December 2016 – and - Number of MET Provider States listed in AFI ANP Table MET II-1 having volcanoes, with Doc 9766 procedures implemented in December 2016. c) AMBEX metrics: Number of international aerodromes/MOs with AMBEX procedures implemented in December 2015
Strategy	All tasks will be carried out by MET experts nominated by AFI States participating in the project, led by the Project-Team Coordinator and under the supervision of the B0-AMET PFF Project Facilitators (ROs/MET, Dakar and Nairobi) through the "GoTo Meeting" tool. Upon completion of the tasks, the results will be sent to the B0-AMET PFF Project Facilitators as a final document for submission to, and if necessary approval by the APIRG Projects Coordination Committee (APCC). For the purpose of collaborative decision-making, meetings will be held with the areas involved.

Rationale	a) Terminal area warnings: The lack of implementation by a number of AFI States in International aerodromes, of information concerning weather phenomena which could adversely affect aircraft on the ground, including parked aircraft, and the aerodrome facilities and services; and aircraft on the approach path or take-off path or during circling approach and their repercussions on the provision of air navigation services call for tools to allow the personnel involved in the different air navigation areas to receive, properly use, and disseminate quality information related to such events. b) WAFS and IAVW: The introduction of the new gridded WAFS forecasts is an improvement to the WAFS in terms of improved accuracy, timely distribution, and usefulness of forecasts to facilitate airspace optimisation. The volcanic events with ash dispersion in the AFI Region and their repercussions on the provision of air navigation services call for tools to enable the personnel involved in the different air navigation areas to receive, properly use, and disseminate quality information related to such events. c) AMBEX: the full implementation of the AMBEX scheme will increase the availability of quality OPMET in International aerodromes and also enable AFI States to be prepared for digital OPMET exchange in the future SWIM environment.
Related projects	All APIRG specifically projects related to: ✓ Implementation of Improved Airport Operations through Airport-CDM (B0-ACDM) ✓ Implementation of Optimization of Approach Procedures including Vertical Guidance (B0-APTA) ✓ Implementation of Improved Operations through Enhanced En-Route Trajectories (B0-FRTO) ✓ Implementation of Improved Flexibility and Efficiency in Descent Profiles (CDO) (B0-CDO) ✓ Implementation of Improved Flexibility and Efficiency in Departure Profiles —Continuous Climb Operations (CCO) (B0-CCO)

Project Deliverable		**Relationship with the performance - based regional plan**	**Responsible Party**	**Status of Implementation**	**Date of Deliver**	**Comments**
Terminal Area Warnings (AD WRNG & WS WRNG)	Current level of implementation of facilities at aerodromes for monitoring hazardous meteorological conditions, assessed	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinators		December 2016	
	Report on Mission to States not compliant with terminal area warning facilities stipulated in Annex 3 and the AFI ANP, distributed	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader		December 2017	
	Detailed guidance provided to States not issuing terminal area warnings and forecasts	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader	☐	December 2015	☐
	List of States implemented aerodrome warnings, wind shear warnings/alerts and water thickness measurement on the runway to support runway safety plans, distributed	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project	☐	December 2018	☐

WAFS and IAVW	Training seminars in French and English on new WAFS gridded forecasts, conducted and related report placed on ICAO website	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader	☐	December 2015	☐
	a) An updated list of States not receiving WAFS products and areas of constraints in implementing SADIS VSAT and FTP service, established; and	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader	☐	a) 2015/Annually b) December 2017	☐

WAFS and IAVW	b) Remedial action plans developed by concerned States					
	a) An updated list of States with active volcanos not implementing IAVW (volcano observatories and VONA), established and b) Remedial action plans developed by the concerned States	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader	☐	c) 2015/Annually d) December 2016	☐
	Report of AFI volcanic ash contingency plan (AFI VACP) exercises distributed and placed on the ICAO website	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader		December 2015	☐

AMBEX	a) A report on annual assessment of the availability and quality of OPMET data in the region, issued, distributed and placed on ICAO website and b) Remedial action plans developed by the concerned States	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader	☐	e) 2015/Annually f) December 2018	☐
	Two seminars in French and English on the implementation of AMBEX procedures including RODBs, conducted and the report distributed	**AFI B0-AMET PFF-2**	☐ AFI B0-AMET PFF Project Coordinator ☐ AFI B0-AMET-2 Project Team Leader	☐	December 2016	☐
✓ Funds to conduct the meetings, missions and to translate reports, regional guides and manuals. Likewise, participants must be given facilities to participate in Go To Meetings. ✓ Funds for meetings with project Team Members in order to assess the results and propose corrective actions. States could use their human resources to conduct the foreseen OPMET tests and monitoring, and, if necessary, cover the financial costs, since the experience gained will result in an improvement of their own systems. Likewise, participants must be given facilities to participate in GoToMeetings.						