



Agenda Item 3: Review of the GREPECAS' Programmes and Projects

3.7 Projects under the Aeronautical Meteorology Programme (B0-AMET)

(Presented by the Secretariat)

SUMMARY	
This working paper presents the progress to date of GREPECAS Programmes and Projects of the CAR/SAM Region.	
REFERENCES	
<ul style="list-style-type: none">- Report of the Seventeenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/17), Cochabamba, Bolivia (Plurinational State of), 21 to 25 July 2014- Report of the Second Meeting of the Programmes and Projects Review Committee (PPRC/2) of GREPECAS, Lima, Peru, 16 to 18 July 2013- Summary of QMS/MET Seminar, Lima, Peru, 20 to 24 September 2014- CIAC/14 Meeting, Bogota, Colombia, 24 to 28 November 2014	
<i>ICAO Strategic Objectives:</i>	<ul style="list-style-type: none"><i>A – Safety</i><i>B – Air navigation capacity and efficiency</i><i>C – Environmental protection</i>

1. Introduction

1.1 During GREPECAS/17 Meeting note was taken on the execution of GREPECAS MET Projects, highlighting:

- Termination of Projects H1 of the CAR/SAM Regions – WAFS Implementation, since WIFS was successfully implemented in the dates proposed.
- Due to the lack of Coordinator Project H2 – IAVW Implementation for the CAR Region was cancelled.
- Considering QMS/MET implementation in CAR States, Project H3 – QMS/MET Implementation was finalized.
- Note was taken of the progress of Projects H4 – OPMET exchange optimization for the CAR and SAM Regions, as well as of the progress achieved by Projects H2 and H3 of the SAM Region.

1.2 Also, GREPECAS 17 formulated the following Conclusion 17/11, regarding MET Programme Projects:

CONCLUSION 17/11 IMPROVEMENTS IN MET ACTIVITIES

That CAR/SAM States, Territories and International Organisations:

- a) continue conducting periodic volcanic ash tests;
- b) urge the AIS areas to prepare and disseminate, in coordination with the MET areas, ASHTAM messages when conducting volcanic ash exercises;
- c) urge Civil Aviation Training Centres (CATCs) to implement training programmes for MET personnel in accordance with the principles emanating from the World Meteorological Organization (WMO), contained in Publication No.1083 – WMO (PIB-M);
- d) secure the funds required for lead auditors to visit other States of the Region to audit the MET/QMS implemented in the CAR/SAM Regions; and
- e) urge the Brasilia OPMET Databank to continue conducting OPMET exchange controls on a quarterly basis.

2. Analysis

CAR Region

2.1 With regard to **Project H2 – IAVW Implementation**, it is worth to mention that a multidisciplinary task force was created with the purpose of developing a model for the preparation of risk maps on volcanic ash dispersion, according to the intensity of the eruption and seasonal winds of Popocatepetl volcano, which is active in Mexico. In respect of IAVW implementation, this activity will be resumed by the new RO/MET.

2.2 Regarding **Project H3 – QMS/MET Implementation** and considering the map of QMS/MET implementation status presented by the WMO representative in the QMS/MET Seminar for the SAM Region, the implementation status for the CAR/SAM Regions to September 2014 indicated that only one State of the CAR Region had completed the QMS/MET implementation process. Unfortunately, this assertion does not reflect reality since based on the missions carried out to several CAR States, from the information provided to ICAO by the States with the corresponding documentation, it was concluded that the standard was completed and implemented. The States that completed and implemented in the NACC Region are: Aruba, Antigua and Barbuda, Canada, Cuba, Dominican Republic, Mexico, Nicaragua, Trinidad and Tobago and United States. Many States of the CAR Region have almost completed this process and subsequently the implementation, such as the States of Eastern Caribbean and Central Caribbean. Central America is showing a great delay after verifying the progress level.

2.3 The map of QMS/MET implementation status is presented in **Appendix A** to this working paper. Thus, the Meeting is urged to accept the report presented by WMO, review the current QMS/MET implementation status in the CAR Region and act consequently, or to consider the task completed. In addition, the Meeting should take into account that, in the WMO Congress, carried out in June 2015; the RA IV President (Caribbean and North America) indicated that they have the challenge to review the plans for QMS/MET implementation in aeronautical meteorological services.

2.4 The Meeting shall consider including a new metric in Project H3 - ***QMS/MET Implementation***, which could be to request States the submission of the certifications of QMS/MET systems implementation in aeronautical meteorological services and, once obtained, publish it in GREPECAS website.

2.5 With regard to **Project H4 - OPMET exchange optimization including SIGMET (WS, WV and WC), meteorological warnings and alerts**, OPMET exchange messages are still being prepared by the Brasilia Data Bank. The description of the project can be found in **Appendix B** to this working paper.

2.6 Regarding Conclusion 17/11, the following actions have been developed in the CAR Region:

- a) Annual exercises on volcanic ash emission simulation have been carried out in Mexico under the guidance of the Washington D.C. Volcanic Ash Advisory Centre (VAAC), as well as seminars in association with the airlines and the *Centro Nacional de Prevención de Desastres* (CENAPRED).
- b) Several States have implemented the use of ASHTAM and participated in several workshops and seminars in the Region. Also, during AIM missions to the States a wide compilation of related ICAO, WMO, NOAA documents, etc. is provided as well as guidance material allowing AIS NOTAM Officers of visited States to have additional documentary elements for the correct and timely ASHTAM emission.
- c) Aeronautical meteorological needs have been transmitted to civil aviation training centres and specifically to the NAM/CAR Civil Aviation Training Centre Working Group (NAM/CAR CATC/WG) for their consideration, in order to implement training and instruction programmes for MET personnel in line with the principles derived by the World Meteorological Organization (WMO), contained in Publication No. 1083 – WMO (PIB-M). At the same time, the *Instituto Centroamericano de Capacitación Aeronáutica* (ICCAE) pertaining to the *Corporación Centroamericana de Servicios a la Navegación Aérea* (COCESNA) have been informed and have undertaken the preparation of the corresponding course based on the referred publication.
- d) Auditor training has not been implemented in the CAR Region, since it is not necessary in accordance with Annex 3, neither the States that have implemented QMS/MET should certify.
- e) The Brasilia OPMET Data Bank carried out the OPMET exchange controls quarterly.

SAM Region

2.7 The Meeting shall recall that during GREPECAS/17 it was informed that regarding the process related to **Project H2 – IAVW Implementation**, the tasks have been completed, but due to the development of the annual volcanic ash SIGMET exercises, the project has not been finalized.

2.8 The Secretariat considers necessary to inform the Meeting that a Template for the preparation of regional SIGMET Guides has been received from ICAO HQ. Attending this requirement, the Meeting should consider the modification of the tasks of the project in order to introduce the revision

of the SIGMET Guide and its alignment with the suggested template. The proposed task is presented in **Appendix C** to this working paper.

2.9 The Meeting shall recall that the in the report presented in GREPECAS/17 for the SAM Region, the PRCC/2 presented the following table regarding **Project H3 - QMS/MET Implementation**:

QMS/MET Implementation – SAM Region			
STATE	Implemented	Certified	In process of certification
Argentina	✓	✓	
Bolivia	✓		25%
Brazil	✓	✓	
Chile	✓	✓	
Colombia	✓		30%
Ecuador	✓		40%
French Guiana	✓	✓	
Guyana	✓		25%
Panama	✓		35%
Paraguay	✓		90%
Peru	✓	✓	
Suriname	✓		35%
Uruguay	✓		25%
Venezuela	✓		30%

2.10 Regarding this issue, the Secretariat deems it necessary to rectify the information provided to the PPRC/2 and GREPECAS/17, due to an error incurred during the transition of the appointment of the new RO/MET of the SAM Regional Office. This information was updated after the QMS/MET Seminar for the SAM Region, carried out in September 2014, after checking the documentation presented by the States regarding the process of QMS/MET implementation. The information presented in the following table reflects the current status of QMS/MET implementation in the States of the SAM Region:

QMS/MET Implementation – SAM Region			
STATE	Implemented	Certified	In process of certification
Argentina	✓	✓	
Bolivia	In process of implementation		Not initiated
Brazil	✓	✓	
Chile	✓	✓	
Colombia	✓		30%
Ecuador	In process of implementation		Not initiated
French Guiana	✓	✓	
Guyana	✓		Not initiated
Panama	In process of implementation		Not initiated
Paraguay	✓	✓	
Peru	✓	✓	
Suriname	✓	✓	
Uruguay	In process of implementation		Not initiated
Venezuela	✓		Not initiated

2.11 The Meeting shall be aware that Standard ISO 9001:2008 is in the process of change, thus the tasks related to this project should be modified. **Appendix D** presents the tasks that should be modified.

2.12 The Meeting shall note that regarding **Project H4 – OPMET Exchange optimization**, the tasks related to OPMET Exchange Controls have continued. In this sense, the Brasilia International OPMET Data Bank (IODB) reports of Quarterly Controls corresponding to the periods from 10 to 16 September 2014, 10 to 16 November 2014, 10 to 16 March 2015 and 10 to 16 June 2015 have been received. Based on the results of these controls and remarks received from the industry, letters have been sent to some States of the SAM Region to request the revision of their procedures for the preparation and transmission of OPMET messages. In addition, with the support of RLA/06/901 Project, the development of workshops on SIGMET and SIGMET graphic in six States, have been scheduled for the second half of 2015.

2.13 With regard to the monitor of Conclusion 17/11, the SAM Region has taken the following actions:

- a) volcanic ash exercises have been carried out on 11 and 12 December with some difficulties observed in the States under Washington VAAC responsibility, since no results have been received from the States associated to this VAAC. SAM States from which results have not been received are: Colombia, Ecuador, French Guiana, Guyana, Guyana, Panama, Suriname and Venezuela;
- b) AIS/AIM units of the SAM States have fully participated in the volcanic ash SIGMET exercise carried out in December 2014;
- c) during the CIAC/14 Meeting, some States of the SAM Region presented a Meteorologist Training Programme aligned with WMO requirements contained in Publication 1083. Also, through teleconferences, a meteorologist training programme, aligned with World Meteorological Organization, was shared with four States;
- d) regarding this issue, in the SAM Region, during the first semester of 2015 and with the support of RLA/06/901 Project, trial audits to QMS/MET systems in process of implementation in Bolivia, Ecuador, Panama and Uruguay were carried out. Three teleconferences with all the States to follow up QMS/MET implementation and Personnel Competencies Assessment tasks were carried out; and
- e) it was informed that the Brasilia OPMET Data Bank is still developing quarterly controls and the analysis of these results have provided information on the procedures for the preparation and transmission of OPMET messages of the States. Errors have been detected mainly in TAF and SIGMET formats, besides the lack of preparation of SIGMET in some States of the SAM Region. Teleconferences with three States that are not issuing SIGMET were carried out in order to exhort them to comply with this important task.

2.14 Considering the above, the Meeting could formulate the following draft conclusion:

**DRAFT CONCLUSION
PPRC 3/XX**

REVISION OF THE MET PROGRAMME AND ITS TASKS

That,

- a) QMS/MET implementation is measured by its certification, through a QMS certifying firm on aeronautical meteorology services;
- b) States that have obtained QMS/MET certification, submit a copy of their certificates to the Secretariat;
- c) NACC and SAM regional offices should review the procedures of volcanic ash SIGMET exercises to ensure the participation of the States under Washington VAAC responsibility;

- d) NACC and SAM regional offices carry out workshops on SIGMET to ensure the preparation of these messages and the correct utilization of the formats contained in ICAO Annex 3.

3. Suggested action

3.1 The Meeting is invited to:

- a) review the information provided in this working paper and in Appendices A, B, C and D;
- b) consider the adoption of the draft conclusion contained in 2.13 above;
- c) consider the modification of the tasks of projects H2 – IAVW Implementation and H3 – QMS/MET Implementation in the SAM Region; and
- d) agree on any other action it may deem appropriate.

APPENDIX A

MAP OF QMS/MET IMPLEMENTATION STATUS



**PROJECT FOR OPMET EXCHANGE OPTIMIZATION,
INCLUDING SIGMET (WS, WV AND WC) AND WARNINGS**

CAR Region	PROJECT DESCRIPTION (DP)	DP N° H4	
Programme	Title of the project	Start	End
Aeronautical meteorology (Programme coordinator: TBD)	<p align="center"><i>Optimisation of OPMET exchange, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts</i></p> <p align="center"><i>Project Coordinator: Dr. Enrique Camarillo (Mexico)</i></p> <p align="center"><i>Experts contributing to the project: Werner Stolz (Costa Rica), Danilo Ramírez (El Salvador)</i></p>	December 2011	December 2014
Objective	Achieve at least 95% efficiency in the preparation and dissemination of OPMET information to CAR States by 31 November 2013. The current achievement is 90%.		
Scope	Correct preparation and timely dissemination of OPMET information involves all MET service units [(EMA(s), OMA(s), MWO(s) and OPMET data banks] of all CAR aerodromes listed in the CAR/SAM ANP.		
Metrics	The percentage of OPMET messages received on time at the Brasilia International OPMET Data Bank (according to Annex 3, Appendix 10, OPMET control considers as messages received those OPMET messages with transit times of 10 minutes) and verification of proper and standard production (quality) of OPMET information at MET services [(EMA(s), OMA(s), and MWO(s)] (Annex 3, in Appendices 3, 4, 5, and 6, contains the (OPMET) message planning tables.		
Goals	a) Reach 85% in the reception of OPMET data of the CAR Region in the Brasilia International OPMET Data Bank on 31/12/12; and 95% on 31/10/13; and b) Reach 85% in the reception of OPMET data in each CAR State on 31/12/12; and 95% on 28/02/2015.		
Strategy	All tasks will be carried out by experts nominated by CAR States (Points of Contact – POC) and by experts contributing to the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through State letters sent by the ICAO Mexico Office, by e-mail, and the “GoToMeeting” tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.		
Rationale	More timely meteorological information will optimise flight path planning and prediction, thus improving ATM system safety and efficiency, pursuant to GREPECAS Conclusion 12/64 (CAR/SAM OPMET EXCHANGE CONTROLS). Meteorological information will also minimise the environmental impact of air traffic.		
Related projects	<ul style="list-style-type: none"> ➤ Automation ➤ Implementation of ATFM ➤ Installation of AMHS at MET units having an international OPMET requirement ➤ Implementation of the MET information quality management system (QMS/MET) ➤ Enhanced ATM situational awareness ➤ Implementation of the new flight plan format (FPL) 		

Project Deliverables	Relationship with the performance-based regional plan (PFF) ⁱ	Responsible Party	Status of Implementation ⁱⁱ	Date of Delivery	Comments
OPMET guide revised and updated	PFF CAR MET 02	MET programme coordinator and project coordinator		September 2012	The OPMET guide prepared by the SAM Office will include procedures for preparing OPMET data and tables containing the AFTN addresses to which OPMET information must be sent worldwide in accordance with the CAR/SAM FASID, thus facilitating the preparation and issuance of MET messages.
Results of coordinated controls of annual SIGMET WV tests	PFF CAR MET 02	POC and BR OPMET data bank		February 2013	The measurement of SIGMET WV messages received on time at the Brasilia International OPMET Data Bank will give the actual percentage of OPMET data, and the verification of the proper preparation of SIGMET WV messages at MWO(s) will permit an assessment of OPMET information quality.
Results of the analysis of coordinated controls of annual SIGMET WV tests	PFF CAR MET 02	MET programme coordinator and project coordinator		August 2014	The results obtained from the coordinated controls of annual SIGMET WV tests will allow programme and project coordinators to adopt, if necessary, corrective action for subsequent coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts.
Results of coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts	PFF CAR MET 02	POC and BR OPMET data bank		August 2014	Timely measurements at the Brasilia International OPMET data bank will provide the actual percentage of OPMET data received, and the verification of the proper preparation of OPMET information at MET services [(EMA(s), OMA(s), and MWO(s))] will permit to assess the quality of OPMET information.
Results of the analysis of coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts	PFF CAR MET 02	MET programme coordinator and project coordinator		September 2014	The results obtained from coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts will give programme and project coordinators an idea of project results.

Project Deliverables	Relationship with the performance-based regional plan (PFF) ⁱ	Responsible Party	Status of Implementation ⁱⁱ	Date of Delivery	Comments
Final project report	PFF CAR MET 02	MET programme coordinator and project coordinator		February 2015	The purpose of the final project report to be submitted by the programme coordinator is to enable the NACC Office, Mexico to check the achievements of the project and propose to the States future measures to maintain the level attained through OPMET controls.
Resources needed	Funds for meetings with project members in order to assess the results and propose corrective actions. States could use their human resources to conduct the foreseen OPMET tests and controls, 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 GoToMeeting.				

ⁱ Air navigation system Performance-Based Implementation Plan for the CAR Region

ⁱⁱ

<i>Grey</i>	<i>Task not started yet</i>
<i>Green</i>	<i>Activity being implemented as scheduled</i>
<i>Yellow</i>	<i>Activity started with some delay, but will be implemented on time</i>
<i>Red</i>	<i>Activity not implemented on time; mitigation measures are required</i>

APPENDIX C

PROJECT FOR THE IMPLEMENTATION OF THE INTERNATIONAL AIRWAYS VOLCANO WATCH (IAVW)

SAM Region	PROJECT DESCRIPTION (DP)	DP N° H2	
Programme	Title of the project	Start	End
Aeronautical meteorology (Programme coordinator: Jorge Armoa)	Implementation of the international airways volcano watch (IAVW) <i>Project coordinator: Jorge Oscar Leguizamón (Argentina):</i> <i>Experts contributing to the project: Olver Boolsen (Argentina) Walter Ríos (Bolivia) Lourdes Martínez (Peru)</i>	December 2011	December 2017
Objective	Ensure that States in the implement the IAVW and the standards and recommended practices of Annex 3 and Part VI – MET of the CAR/SAM ANP, Basic and FASID, concerning the issuance and distribution of the reports of en-route weather phenomena likely to affect the safety of aircraft operations, and the evolution of such phenomena in time and space (SIGMET WS, WV, WC, and WR).		
Scope	The project will comprise all meteorological watch offices (MWO) of the SAM Region listed in Table MET 1B of the CAR/SAM FASID, in coordination with the ACCs/FICs/NOFs, and Volcanic Ash Advisory Centres (VAAC) Buenos Aires and Wellington (New Zealand). Procedures for the issuance of reports and coordination among the affected areas should be defined, as well as transfer of responsibilities between one MWO and others. Procedures will be defined for the transfer of responsibilities and assistance among the CMRE and the MWOs.		
Metrics	Testing of volcanic ash SIGMETs shall result in continuous improvements once project deliverables are available to the States.		
Strategy	All tasks will be carried out by experts nominated by SAM States participating in the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through the “GoToMeeting” tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.		
Goals	a) 100% of acceptance of SIGMET tests, regarding transmission and reception of SIGMET WV; and b) No aircraft encounters with volcanic ash clouds in the SAM Region in 2012 and 2013.		
Rationale	The severity, persistence, and increased frequency of volcanic events with ash dispersion in the SAM 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. Likewise, based on Japan’s experience, contingency plans are needed not only for this type of events but also for radioactive clouds when more than one FIR in the Region is involved.		
Related projects	<ul style="list-style-type: none"> ➤ Optimisation of the en-route airspace structure ➤ Implementation of the new flight plan format (FPL) ➤ Implementation of ATFM 		

Project Deliverables	Relationship with the performance-based regional plan (PFF)	Responsible Party	Status of Implementation ¹	Date of Delivery	Comments
SIGMET guide revised and updated and aligned to the template provided by HQ.	PFF SAM MET 03	MET programme coordinator and project director		December 2016	The guide will include MWO responsibility handover procedures. The guide is in continuous revision
Regional contingency plan for volcanic activity events	PFF SAM MET 03	MET programme coordinator and project director		November 2012	Prior to its approval by GREPECAS, the ATM, MET, and AIM personnel of the Region shall approve the plan, for which a meeting will be held. This task has been passed to the ATM responsibility
Regional contingency plan for accidental release of radioactive material.	PFF SAM MET 03	MET programme coordinator and project director		November 2013	Prior to its approval by GREPECAS, the ATM, MET, and AIM personnel of the Region shall approve the plan, for which a meeting will be held. This task has been passed to the ATM responsibility
Protocol for the volcanic ash SIGMET exercise	PFF SAM MET 03	MET programme coordinator and project director		December 2012	The protocol for the volcanic ash SIGMET exercise reviewed and updated. On 1 and 2 December 2012 the test was carried out
Results of the exercise	PFF SAM MET 03	MET programme coordinator and project director		December 2012	Based on the results, values may be assigned to the quality of SIGMETs and their exchange as compared with previous exercises.

Project Deliverables	Relationship with the performance-based regional plan (PFF)	Responsible Party	Status of Implementation ¹	Date of Delivery	Comments
Protocol for the volcanic ash SIGMET exercise	PFF SAM MET 03	MET programme coordinator and project director		December 2015 December 2016 December 2017	The protocol for the volcanic ash SIGMET exercise reviewed and updated. The exercises should be carried out each year to keep personnel in continuous training. On 7 and 8 December 2012 the test was carried out
Results of the exercise	PFF SAM MET 03	MET programme coordinator and project director		December 2015 December 2016 December 2017	Based on the results, values may be assigned to the quality of SIGMETs and their exchange as compared with previous exercises.
Resources needed	Funds to conduct the meetings and to translate the regional volcanic ash contingency plan and the regional contingency plan in case of accidental release of radioactive material. Likewise, participants must be given facilities to participate in GoTo Meetings.				

¹

Grey Task not started yet
Green Activity being implemented as scheduled
Yellow Activity started with some delay, but will be implemented on time
Red Activity not implemented on time; mitigation measures are required

APPENDIX D

PROJECT FOR THE IMPLEMENTATION OF THE MET INFORMATION QUALITY MANAGEMENT SYSTEM (QMS/MET)

SAM Region	PROJECT DESCRIPTION (DP)	DP N° H3	
Programme	Title of the Project	Start	End
Aeronautical Meteorology (Programme coordinator: Jorge Armoa)	Implementation of the QMS/MET <i>Project coordinator: Ricardo Reyes (Peru)</i> <i>Experts contributing to the project: Olver Boolsen (Argentina) Fernando de Abreu Pinto (Brazil) Xenia Guardia (Panama) Roberto Salinas (Paraguay) Lourdes Martínez (Peru)</i>	December 2011	November 2017
Objective	Assist States in the implementation of the QMS/MET and certification where applicable. Update and improve the QMS/MET guide to assist States in the production of MET documentation under ISO 9001: 2015, the implementation of Annex 3 and Part VI – MET of the CAR/SAM ANP, and the conduction of audit trials.		
Scope	Establishment and application of a duly organised MET service quality system at each MET unit of all SAM aerodromes listed in CAR/SAM ANP, and compliance with the standards and recommended practices of Annex 3 and the CAR/SAM ANP, Vol. I, Basic, and Vol. II, FASID, Part VI – MET.		
Metrics	Number of AOP aerodromes certified under ISO 9000: 2015, and list of aerodromes and their status of implementation of QMS/MET in each of their units.		
Strategy	All tasks will be carried out by experts nominated by SAM States participating in the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through the “GoToMeeting” tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.		
Goals	a) 100% of SAM States have established QMS/MET system in accordance with standard ISO 9001:2008 on 31 October 2012; b) 70% of SAM States apply QMS/MET system in accordance with standard ISO 9001:2008 on 31 December 2015; c) 70% of SAM States have QMS/MET system certified by an organization in accordance with standard ISO 9001:2015 on 31 June 2017; and d) 100% of SAM States have QMS/MET system certified by an organization in accordance with standard ISO 9001:2015 on 31 October 2017.		

Rationale	More accurate and timely meteorological information will optimise 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 minimise the environmental impact of air traffic. Performance management will be an important part of meteorological information quality assurance.
Related projects	<ul style="list-style-type: none"> ➤ Automation ➤ Improved ATM situational awareness

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation	Date of Delivery	Comments
Revised and updated QMS/MET guide.	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		December 2016	The practical guide will facilitate the drafting of ISO 9000: 2015 documentation by MET service provider States.
Development of a State survey on MET personnel	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		November 2014	One of the main problems facing MET service provider States is the lack of personnel with the competencies required by WMO and ICAO. State requirements will be officially communicated to ICAO contracting States.
Table of compliance with Annex 3 standards and MET procedures	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		June 2017	In the first instance, strict compliance with ICAO standards related to the provision of MET services will be monitored.

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation ¹	Date of Delivery	Comments
Table of compliance with the CAR/SAM ANP, Part VI - MET.	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		June 2016	Close monitoring of strict compliance with Part VI- MET of the CAR/SAM ANP.
Audit trials	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		November 2015	Audit trials will be conducted to identify QMS/MET implementation issues and to propose strategies for their resolution.
Resources needed	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.				

¹

<i>Grey</i>	<i>Task not started yet</i>
<i>Green</i>	<i>Activity being implemented as scheduled</i>
<i>Yellow</i>	<i>Activity started with some delay, but will be implemented on time</i>
<i>Red</i>	<i>Activity not implemented on time; mitigation measures are required</i>