



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 Third Meeting of the Programmes and Projects Review Committee (PPRC/3) of GREPECAS, Mexico City, Mexico, 21 to 23 July 2015• Conclusions of the Seminar on MET Quality Management System (QMS/MET) and Personnel Competency for the SAM Region, Lima, Peru, 21 to 25 September 2015• Report of the Meeting on GREPECAS MET Programme Projects for the SAM Region, Lima, Peru, 23 to 27 November 2015	
ICAO Strategic Objectives:	<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 – Optimization of 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 PPRC/3 Meeting reviewed the development of GREPECAS MET Projects and follow up on the activities carried out in the CAR/SAM regions to comply with GREPECAS Conclusion 17/11.

1.3 GREPECAS MET projects for the SAM Region were reviewed during the meeting held between 23 and 27 November 2015.

2. Analysis and follow up on Conclusion PPRC 3/9

2.1 Analysis

2.1.1 The meeting shall recall that during PPRC/3 the tasks carried out within GREPECAS MET projects were reviewed. During the referred meeting, CAR and SAM regions informed on the activities performed for the development of the projects, as well as to comply with GREPECAS Conclusion 17/11. In this regard, PPRC/3 took note of the activities, both in the CAR and SAM regions in order to give continuity to GREPECAS MET Projects.

2.1.2 The meeting may recall that, after analyzing the activities carried out by the regional offices to follow up GREPECAS Conclusion 17/11, the PPRC/3 formulated Conclusion 3/9 - *Revision of the MET Programme and its tasks*, which reads as follows:

That,

- QMS/MET implementation be measured by certification, through a QMS certifying firm on aeronautical meteorology services;
- States that have obtained QMS/MET system certification, submit a copy of their certificates to the Secretariat;
- The ICAO NACC and SAM regional offices review the procedures of volcanic ash SIGMET exercises to ensure the participation of those under the Washington VAAC responsibility; and
- The ICAO 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.

2.2 Follow up to PPRC Conclusion 3/9

2.2.1 The following activities were developed in the CAR Region in order to follow up the referred conclusion:

- Based on the on the estimation of the World Meteorological Organization, socialized in GREPECAS MET Projects Meeting for the SAM Region, November 2015, Region RA IV (North America, Central America and the Caribbean) presented a 36% implementation of QMS/MET to 1st November 2015, which confirms the data registered through USOAP audits and GANDD updates, which identify more than 13 States that would accomplish the requirement.

- b) Up to date, copies of the certifications of the QMS/MET system of States that have completed their implementation have not been received directly or through the Secretariat.
- c) Washington VAAC, at the request of the NACC Office and in coordination with SAM Office, launched FICTITUS exercised on 12 and 13 December 2015, obtaining the following results:
 - i. the exercise count on the participation of 8 States (Argentina, Chile, Cuba, Honduras, Jamaica, Mexico, United States of America and Uruguay);
 - ii. participation of both VAACs was identified, as well as the NOTAM and MWO Offices of the States involved;
 - iii. units involved generated volcanic ash advisories, NOTAM-ASHTAM and SIGMET messages, respectively;
 - iv. the most significant findings were: errors in headings and numbering, intermittency in AMHS terminals, omission in coordination procedures.
- d) Between 26 and 28 July 2016, a meeting will be held to improve the coordination among aeronautical meteorological, aeronautical information management and air traffic management areas, through which the procedures for the preparation of SIGMET and its relation with the units involved, will be presented.

2.2.2 In the SAM Region, with the purpose of following PPRC Conclusion 3/9, the following activities were carried out:

- a) States of the SAM Region that have implemented QMS/MET (8 in total), so far have implemented it through a certifying organization.
- b) States of the SAM Region that have implemented QMS/MET have submitted copy of the certification to the SAM Regional Office.
- c) NACC and SAM Offices have coordinated the 2015 volcanic ash exercise and there was a higher participation of SAM States under Washington VAAC responsibility.
- d) A SIGMET Workshop to be held in ICAO SAM Regional Office has been scheduled from 16 to 18 August 2016. In addition, and with a SIP support, workshops on SIGMET preparation were carried out in Colombia, Guyana, Suriname and Venezuela.

3. **Current situation of MET Projects**

CAR Region

3.1 **Project H2 – IAVW Implementation:** In accordance with Conclusion 17/11, currently volcanic ash periodic tests are still developing, these tests enable to verify the communication channels and the suitability of the information, its frequency, format and content, however, the current design of the exercise does not assess the preparation and operational response in terms of planning, processes and procedures of the operators and air traffic services, also uses a high operational capacity of Washington VAAC; these situations require the design of new scenarios that include the objectives and concepts formulated in Document 9766. In view of the above:

- a) in accordance with the recommendation of Document 9766, the regional group for the management of volcanic ash exercises will be created, convening each interested party in all the States; and
- b) the work programme of Project H2 will be extended until February 2019.

3.2 **Project H3 – Implementation of the Quality Management System of Meteorological Information (QMS/MET);** the following is presented for the meeting's consideration:

- a) That in accordance with the assessed criteria, approximately only 36% of States have achieved implementation.
- b) The change in Standard ISO 9001 in September 2015, including a risk based approach, among other changes, implies the beginning of a transition period for those organizations with ISO 9001:2008 certifications and the need to anticipate for those that are still in the implementation process.
- c) Starting 2013 and in accordance with the Manual on the Implementation of Education and Training Standards in Meteorology and Hydrology WMO-No. 1083, the new classification of aeronautical meteorology personnel was in force: Meteorologist and Meteorological Technician, these competency requirements should be considered as an essential factor in QMS/MET construction. Considering the above:
 - i. the meteorological authorities and service providers will be convened as contributor experts that allow the reformulation of the project tasks;
 - ii. the work programme of Project H3 will be extended until November 2018.

3.3 **Project H4 – Optimization of OPMET exchange, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts;** the following is presented for the meeting's consideration

- a) Restore the periodic submission to NACC Office of OPMET controls carried out by the Brasilia International OPMET Databank, allowing to arrange with States the necessary actions to optimize the processes, as well as to reduce the impacts expressed by operators through IATA.
- b) Consider the implications of amendment 77 to ICAO Annex 3, which includes as Recommendation, the transmission of OPMET data in digital format, aimed at preparing States for OPMET data exchange in a global interoperable format and, in this way, facilitate the integration of the data generated by aeronautical meteorological services to a SWIM environment.
- d) The need recently exposed by the SAM Region, consisting in updating the Guide for the preparation, dissemination and use of SIGMET messages for the CAR/SAM Regions. Considering the above:
 - i. the meteorological authorities and service providers will be convened as contributor experts that allow the reformulation of the project tasks;
 - ii. the work programme of Project H4 will be extended until February 2019.

SAM Region

3.4 The SAM Region organized a GREPECAS MET Projects Meeting in order to review the development of MET projects and update their work programme and, if necessary, prepare preliminary projects for the PPRC consideration. In this regard, States' MET experts that participated in the meeting, analyzed all the issues of MET projects currently under development and agreed to request the PPRC the following:

- a) With regard to **Project H2 - IAVW Implementation**, the meeting considered that the Guide for the preparation and dissemination of SIGMET messages for the CAR/SAM Regions was out of date, besides the need to adjust it to the format requested by HQ and the need to continue with SIGMET exercises. Taking into account the above, the meeting requested to submit the following to PPRC consideration:
 - i) the extension of Project H2 until 2017, taking into account the tasks to be developed by this project; and
 - ii) to adopt the modifications of the task programme of the project as shown in **Appendix A** to this working paper.
- b) Regarding **Project H3 – Implementation of the MET Information Quality Management System (QMS/MET)**, when analyzing the development of this project, note was taken of the current QMS/MET implementation status presented in **Appendix B**. In view of this situation, the meeting considered that the States that are in process of QMS/MET implementation should complete it before the transition period of validity of the certifications, established after the change of Standard ISO 9001 in September 2015, thus guidelines will be necessary. The meeting observed that Amendment 77 to Annex 3 turns to Standard the Recommendation 2.2.6, which requests the demonstration by audit of compliance of the quality system applied, but does not specify if it should be done by the same institution (internal audit) or by an external audit (civil aviation authority or an external certification audit). Also, an important element of QMS/MET is personnel competency assessment, which is an emerging task in the region and need to be conducted for its total application. In view of the above, the meeting decided to request the PPRC:
 - i) to extend the work programme of Project H3 until 2019; and
 - ii) to modify the task programme of Project H3 as presented in **Appendix C**.
- c) With regard to **Project H4 - Optimization of OPMET Exchange, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts**, the meeting noted the low efficiency of States, results obtained from the OPMET controls carried out by the Brasilia International OPMET Databank, and observed with concern the complaints of the industry due to the format errors in OPMET messages. In addition, the meeting considered proposal for amendment 77 to ICAO Annex 3, which includes, as Recommendation, the transmission of OPMET data in digital format, with the purpose of preparing States for OPMET data exchange in a globally interoperable format and, in this way, enable the integration of the data generated by aeronautical meteorological services to a SWIM environment. When analyzing this matter, the meeting considered that the participation of Brazil would be very important considering the essential role developed by the Brasilia International OPMET Databank regarding the transmission of data in XML/GML format, according to the project presented in the SAM COM/MET Meeting – 2015,

but, unfortunately, during the last meetings there was no participation of delegates from Brazil. Considering the above, the meeting agreed to request the PPRC the following:

That, aimed at updating the task programme of Project H4 – Optimization of OPMET Exchange for a transition to a digital environment, and to assist States in their preparation for the OPMET data management in a SWIM environment, States should:

- i) extend the work programme of Project H4 until 2018; and
- ii) adopt the changes proposed for the task programme of Project H4, as presented in **Appendix D**.

3.5 The Meeting on GREPECAS MET Programme Projects for the SAM Region also took into account the considerations of the MET Divisional Meeting (MET /2014) regarding all the modules of ASBU Blocks in which meteorological information is important. In this sense, it was noted that within the ASBU methodology, in the Performance improvement area 2 (PIA 2), is emphasized that meteorological information is an integral component of the information management environment of all the future system, together with aeronautical information, the information about flights and flow and other information sources.

3.6 The referred meeting also emphasized that within the CDM and A-CDM processes, it will be necessary to give more importance to the impact of meteorological conditions in capacity and efficiency and to the possibility of reducing some of the aviation environmental impacts. Taking into account these considerations, the meeting considered important to prepare a draft project that could assess the necessary improvements in the provision of meteorological information in support to an ATM in evolution and to the processes of collaborative decision making (CDM), as well as the collaborative decision making at the airports (A-CDM). In view of the above, the meeting decided to request the PPRC authorization to:

- i) prepare a draft project which could be called: **DRAFT PROJECT H5 – IMPROVEMENTS TO MET SERVICES IN ACCORDANCE WITH THE NEW OPERATIONAL REQUIREMENTS IN SUPPORT OF ATM**
- ii) consider the approval of the draft project, in the terms presented in **Appendix E**.

3.7 In the SAM Region, follow up to all the activities scheduled in the Meeting on GREPECAS MET Programme Projects has been made, through teleconferences and request for programmes of activities to the Project Coordinators. So far, two teleconferences have been carried out and follow up to the accomplishment of the task schedules is made.

4. Conclusion

4.1 The meeting, when analyzing the information presented, could formulate the following draft conclusion:

**DRAFT CONCLUSIÓN
PPRC 4/XX**

UPDATE OF THE MET PROGRAMME AND ITS TASKS

That,

- a) the NACC and SAM regional offices coordinate procedures to update the CAR/SAM Guide on OPMET Exchange and the Guide for the preparation, dissemination and use of SIGMET messages;
- b) with the purpose of reactivating projects H2, H3 and extend project H4 in the CAR Region, NACC Regional Office should create the regional management group of volcanic ash exercises and convene meteorological authorities and service providers to act as contributor experts, developing the necessary activities to ensure the achievement of the objectives and the accomplishment of the scope of each project; and
- c) encourage Brazil to actively participate in Project H4 – Optimization of OPMET Exchange, since it is necessary to count with their contribution regarding OPMET Exchange controls and the transmission of OPMET messages in digital format (XML/GML).

5. Suggested action

5.1 The Meeting is invited to:

- a) review the information proved in this working paper and in Appendices A, B, C, D and E;
- b) consider the adoption of the draft conclusion contained in 4.1 above;
- c) consider the modification of the tasks of projects H2 – *IAVW Implementation*, H3 – *QMS/MET Implementation* and H4 – *Optimization of OPMET Exchange* of the SAM Region;
- d) consider the authorization for the preparation and implementation of Project H5 - *Improvements to MET services in accordance with the new operational requirements in support of ATM*; and
- e) agree on any other actions it may deem appropriate.

APPENDIX A

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:</i> Roxana Vasquez Ferro (Argentina) <i>Experts contributing to the project:</i> Jorge Leguizamon (Argentina) Lourdes Martínez (Peru) Walter Rios (Bolivia) Rodrigo Fajardo Rosell (Chile) Marco Ortiz (Ecuador) Celestino Lamboglia (Panama)	December 2011	December 2017
Objective	Ensure that States in the implement the IAVW and the standards and recommended practices of Annex 3 and of Volume I, Part MET of the CAR/SAM electronic Air Navigation Plan (replaces Doc 8733 Basic), concerning the issuance and distribution of the reports of en-route weather phenomena and of release of radiative material likely to affect the safety of aircraft operations, and the evolution of such phenomena in time and space (SIGMET WV).		
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. Number of States that have established national responsibility procedures and assistance among the civil aviation authorities, the national nuclear authority and the WMO.		
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 ASHTAM; b) full availability of the information to avoid aircraft encounters with volcanic ash clouds in the SAM Region; and c) 100% of States States with national responsibility procedures and assistance among the civil aviation authorities, the nuclear authority and the MET service provider.		

Rationale	The severity, persistence, and increased frequency of volcanic events with ash dispersion and radioactive clouds in the SAM Region and their repercussions on the provision of air navigation services call for tools to provide information that collaborates with the improvement or increase in safety levels.
Related projects	<ul style="list-style-type: none"> ➤ Optimisation of the en-route airspace structure ➤ Implementation of ATFM

Project Deliverables	Relationship with the performance-based regional plan (PFF)	Responsible Party	Status of Implementation¹	Date of Delivery	Comments
SIGMET guide revised and updated and aligned to the template provided by ICAO	PFF SAM MET 03	MET programme coordinator and project coordinator		December 2016	The guide will include the procedures for the transition of responsibilities of the MWO. This task will be developed by a working group established in the GREPECAS MET Projects Meeting, November 2015.
Regional contingency plan for the release of radioactive material.	PFF SAM MET 03	MET programme coordinator and project coordinator		December 2017	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.
Update of the protocol for the volcanic ash SIGMET exercise	PFF SAM MET 03	MET programme coordinator and project coordinator		March 2016	The protocol for the volcanic ash SIGMET exercise reviewed and updated by a group integrated by Argentina, Ecuador and Peru.
Results of the FICTITUS exercise	PFF SAM MET 03	MET programme coordinator and project coordinator		February 2016 February 2017 February 2018	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
Review of the protocol for the volcanic ash SIGMET exercise	PFF SAM MET 03	MET programme coordinator and project coordinator		June 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.
Development of workshops and courses	PFF SAM MET 03	MET programme coordinator and project coordinator		2016 and 2017	Development of training workshops and courses such as SIGMET
Final Report of the Project		MET programme coordinator and project coordinator		1 st half of 2018	
Recursos necesarios	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

<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 B**CURRENT STATUS OF QMS/MET IMPLEMENTATION IN THE SAM REGION**

QMS/MET Implementation – SAM Region			
STATE	Implemented	Certified	In process of certification
Argentina	✓	✓	
Bolivia	✓	No	60%
Brazil	✓	✓	
Chile	✓	✓	
Colombia	✓	✓	
Ecuador	In process of implementation	No	Not initiated
Guyana	✓	No	Not initiated
Guyana Francesa	✓	✓	
Panama	✓	No	70%
Paraguay	✓	✓	
Peru	✓	✓	
Suriname	✓	✓	
Uruguay	✓	No	90%
Venezuela	In process of implementation		Not initiated

APPENDIX C

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:</i> Claudio Mattio (Argentina) <i>Experts contributing to the project:</i> Arturo Lomas (Ecuador) Xenia Guardia (Panamá) Edward León (Venezuela) Roberto Salinas (Paraguay) Ricardo Reyes (Perú)	January 2016	June 2019
Objective	Assist States in the implementation of the QMS/MET and certification, where applicable, and establish guidelines for the transition to the standard ISO 9001: 2015, aligned to ASBU and projected to the interoperability of meteorological information, in compliance with Annex 3, Part VI – MET of the CAR/SAM ANP.		
Scope	Establishment and application of a quality management system of meteorological data safety-oriented 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 e-ANP, Vol. I and Vol. II.		
Metrics	Number of AOP aerodromes certified under ISO 9001 in force.		
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 30 June 2016; b) 70% of SAM States apply and certify QMS/MET system in accordance with standard ISO 9001:2015 on 31 December 2017; and c) 100% of SAM States have QMS/MET system certified by an organization in accordance with standard ISO 9001:2015 in June 2019.		
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 ¹ Implementation	Date of Delivery	Comments
Guidelines for the transition to Standard ISO 9001:2015	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		September 2016	The guidelines will facilitate the drafting of ISO 9001: 2015 documentation by MET service provider States.
Survey to States on MET personnel completed	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		November 2016	One of the main problems facing MET service provider States is the lack of personnel with the qualifications and competencies required by WMO and ICAO. State requirements will be officially communicated to ICAO contracting States.
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 compliance with Part MET of Volume I of the e-ANP CAR/SAM.
Report of the MET service risk management workshop		MET programme coordinator and project director		August 2016	June 2016 has been scheduled as a possible date for the development of the workshop seminar on "Risk Analysis".
Update course in Leader Auditor				March 2018	An update course for the auditors trained under the standards of ISO 9001:2008 should be developed in order to have the required knowledge in the new standards introduced in version 2015.
Resources needed	Availability for GoTo Meeting teleconferences is required.				

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>

APPENDIX D

PROJECT FOR THE OPTIMISATION OF OPMET EXCHANGE, INCLUDING SIGMETs (WS, WV, WC, AND WR), WARNINGS AND METEOROLOGICAL ALERTS

SAM Region	PROJECT DESCRIPTION (DP)	DP N° H4	
Programme	Title of the project	Start	End
<p>Aeronautical meteorology</p> <p>(Programme coordinator: Jorge Armoa)</p>	<p><i>Optimisation of OPMET exchange, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts</i></p> <p><i>Project coordinator: Alexander Quintero (Brasil)</i></p> <p><i>Experts contributing to the project: Aníbal Castro Cárdenas (Bolivia)</i> <i>Rafael Narvaja Zárate (Peru)</i> <i>Rodrigo Cortes (Argentina)</i> <i>Valdeci Donizeti Juliar da Franca (Brazil)</i> <i>Edison Lagos (Ecuador)</i> <i>Celestino Lamboglia (Panama)</i> <i>Orlando Sánchez (Venezuela)</i> <i>Antonio Espinoza (Venezuela)</i> <i>Warsodikromo Truusje Soetinie (Suriname)</i></p>	December 2015	December 2018
Objective	<ul style="list-style-type: none"> - Achieve at least 95% efficiency in the reception of OPMET information by the Brasilia IODB by 31 December 2018 - Achieve at least 95% efficiency in the transmission of OPMET information in XML/GML formats in SAM States by 31 December 2018 		
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 SAM 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)] in standardized format (Annex 3, in Appendices 3, 4, 5, and 6, contains the OPMET message planning tables).		
Strategy	All tasks and previous exchange exercises necessary for the compliance of the objectives will be carried out by experts nominated by SAM 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 Lima 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.		
Goals	<ul style="list-style-type: none"> a) Reach 85% in the reception of OPMET data in standardized format of the SAM Region in the Brasilia IODB by 31/12/17; and 95% by 31/10/18; b) Reach 70% OPMET data reception in XML/GML formats in the SAM Region in the Brasilia IODB by 31/10/18; c) Reach 85% in the reception of OPMET data in standardized format among the States of the SAM Region by 31/12/17; and 95% by 		

	31/10/18; d) Reach 30% in the reception of OPMET data in XML/GML formats among the States of the SAM Region by 31/12/17; and 70% by 31/12/18.
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 ➤ Implementation of the MET information quality management system (QMS/MET) ➤ Enhanced ATM situational awareness

Project Deliverables	Relationship with the performance-based regional plan (PFF)¹	Responsible Party	Status of Implementation²	Date of Delivery	Comments
OPMET guide revised and updated	PFF SAM MET 02	MET programme coordinator and project coordinator		March 2016	The OPMET guide prepared by the SAM Office will include procedures for preparing OPMET data and tables containing the AFTN/AMHS addresses to which States must send OPMET information worldwide in accordance with the CAR/SAM FASID, thus facilitating the preparation and issuance of MET messages.
Controls of efficiency and quality of OPMET information available in the Brasilia International OPMET Databank	PFF SAM MET 02	Brasilia International OPMET Databank		March, June, August, November 2016, 2017, 2018 October 2018	Measurement of the time of reception of OPMET information by the Brasilia International OPMET Databank will be carried out every three months during the duration of the project.

Project Deliverables	Relationship with the performance-based regional plan (PFF) ¹	Responsible Party	Status of Implementation ²	Date of Delivery	Comments
Results of the analysis of coordinated controls of exchange of information	PFF SAM MET 02	MET programme coordinator and project coordinator		April, July, October and December 2016, 2017 and 2018	The results obtained from coordinated controls of OPMET information exchange, will allow SAM States, as necessary, to implement corrective actions to comply with the goals scheduled for the sake of continuous improvement.
OPMET information exchange tests in XML/GML format	PFF SAM MET 02	States in technical capacity of developing the test		October 2016 March 2017 October 2017	The OPMET information exchange tests will be carried out initially with the States that are in a capacity of doing so, at least twice a year.
Results of the Analysis of the OPMET exchange tests in XML/GML format	PFF SAM MET 02	MET programme coordinator and project coordinator		December 2016 December 2017	The results obtained with the biannual OPMET information exchange controls will allow SAM States, as necessary, to implement corrective actions to comply with the goals scheduled for the sake of continuous improvement.
Final project report	PFF SAM MET 02	MET programme coordinator and project coordinator		March 2019	The purpose of the final project report to be submitted by the programme coordinator is to enable the Lima SAM Office 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 GoToMeetings.				

¹ Air navigation system Performance-Based Implementation Plan for the SAM Region

² *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 E

**NAME OF THE DRAFT PROJECT: IMPROVEMENTS TO MET SERVICES IN ACCORDANCE WITH THE NEW
OPERATIONAL REQUIREMENTS IN SUPPORT OF ATM**

SAM Region	DESCRIPTION OF PROJECT (DP)	DP N° H5	
Programme	Title of the Project	Start date	End date
<p>Aeronautical Meteorology</p> <p>(Programme coordinator: Jorge Armoa)</p>	<p>Improvements to MET services in accordance with the new operational requirements in support of ATM</p> <p><i>Project coordinator:</i> Jorge Saltarin Sanchez (Colombia) Arturo Lomas (Ecuador)</p> <p><i>Experts contributing to the project:</i> Claudio Mattio (Argentina) Reinaldo Gutierrez (Chile) Arturo Lomas (Ecuador) Eduardo Recalde (Ecuador) Xenia Guardia Baude (Panama) Carlos Roberto Salinas (Paraguay) Ricardo Reyes Távara (Peru)</p>	January 2016	December 2018
Objective	Implement MET services within the framework of the ATM operational concept, CDM, and ASBU blocks related to improvements favouring data and system interoperability (SWIM) by December 2018.		
Scope	Deliver quality and timely MET information to all stakeholders of the SAM Region, in alignment with the Global Air Navigation Plan.		
Metrics	<p>Number of States that responded to the survey.</p> <p>Submission by States of an implementation programme to improve MET services, including human and technological factors.</p>		
Strategy	All the work will be carried out by experts designated by SAM States participating in the project, under the leadership of the Project Coordinator and the supervision of the MET Programme Coordinator through the GoTo Meeting system. Once the tasks have been completed, the results will be delivered to the MET Programme Coordinator as a final document, for its submission to, and, if necessary, approval by, the GREPECAS PPRC through the GREPECAS fast-track procedure. To support collaborative decision-making, meetings will be held with the areas involved.		
Goals	<p>Completion of the proposed survey by 100% of States.</p> <p>Submission of a continuous improvement programme in the provision of MET services by 100% of States.</p>		
Rationale	Through more precise and timely meteorological information, it will be possible to optimise flight path planning and prediction, thus enhancing the safety and efficiency of the ATM system; improved reports and aerodrome forecasts will optimise the use of available aerodrome capacity; and meteorological information will contribute to 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 ➤ A-CDM implementation ➤ ATFM implementation ➤ PBN implementation ➤ Improvement of ATM situational awareness
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Project deliverables	Relationship with PFF of the SAM PBIP ⁱ	Responsible party	Status of implementation ⁱⁱ	Delivery date	Comments
Design and drafting of a survey of international air navigation to identify MET services required for the CDM and A-CDM environment		MET Programme Coordinator and Project Director		June 2016	The group will send the survey to the Secretariat for circulation to the States.
Reception of the survey duly completed by the States				December 2016	
Analysis and assessment of results obtained from the survey and identification of gaps for improving MET services in order to increase efficiency, safety, and regularity.		MET Programme Coordinator and Project Director		June 2017	Communicate the results to the States through the Secretariat, so that each may prepare its MET service improvement programme.
Follow-up to programmes submitted by States on the basis of the gaps identified.		MET Programme Coordinator and Project Director		December 2017	
Required resources	Availability of GoToMeeting to define the content of the survey and analyse its results. The States could use their human resources to plan the implementation of requirements in support of ATM. Availability of resources to hold meetings on the second year in order to review the project.				

ⁱ Performance-Based Air Navigation Implementation Plan for the SAM Region

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<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 expected to be implemented on time</i>
<i>Red</i>	<i>Activity not implemented on time; mitigation measures are required</i>