



SAM/MP 2015

INTERNATIONAL CIVIL AVIATION ORGANIZATION

South American Regional Office



**MEETING ON GREPECAS MET
PROGRAMME PROJECTS FOR THE
SAM REGION**

FINAL REPORT

(Lima, Peru, 23 to 27 November 2015)

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HISTORY OF THE MEETING

ii-1 PLACE AND DURATION OF THE MEETING

The Meeting on GREPECAS MET Programme Projects for the SAM Region (SAM/MP 2015) was held at the ICAO South American Regional Office, Lima, Peru, from 23 to 27 November 2015.

ii-2 OPENING CEREMONY AND OTHER MATTERS

Ms. Veronica Chavez, on behalf of the Director of the ICAO South American Regional Office, welcomed the participants and highlighted the importance of the objectives of the Meeting, giving a brief explanation of the issues to be reviewed. She also expressed her satisfaction for the convening of this event, wishing the participants all success in their discussions and inaugurating the Meeting.

ii-3 ORGANIZATION OF THE MEETING

The Meeting was chaired by Ms. Xenia Guardia Baule (Panama). Mr. Jorge Armoa, Aeronautical Information Management and Aeronautical Meteorology Regional Officer of the ICAO South American Office (SAM), acted as Secretary.

Mr. Scylla M. Sillayo, Senior Scientific Officer of the World Meteorological Organization (WMO) attended the Meeting and made a presentation on the Status of Compliance with the International Regulations of the Quality Management System, and the situation of personnel competency assessment.

ii-4 WORKING LANGUAGES

The working language of the Meeting was Spanish, with simultaneous interpretation into English. The documentation was presented in both languages.

ii-5 AGENDA

The following agenda was adopted:

- | | |
|----------------|--|
| Agenda Item 1: | Review of Project H2 – Implementation of the International Airways Volcano Watch (IAVW) |
| Agenda Item 2: | Review of Project H3 – Implementation of the MET Information Quality Management System (QMS/MET) |
| Agenda Item 3: | Review of Project H4 – OPMET Exchange |

Agenda Item 4: Study the a new project related to MET Services improvement in support of ATM

Agenda Item 5: Other business

ii-6 **SCHEDULE AND WORKING METHODOLOGY**

The Meeting agreed to conduct its sessions from 08:30 to 15:30 hours, with suitable breaks.

ii-7 **ATTENDANCE**

The Meeting was attended by 16 participants from 9 SAM States and one international organization, WMO, which are shown in the List of participants presented in page iii-1.

ii-8 **LIST OF CONCLUSIONS AND RECOMMENDATION**

NUMBER	TITLE	PAG
15/1	MODIFICATION OF THE PROTOCOLS OF VOLCANIC ASH SIGMET EXERCISES	1-1
15/2	EXTENSION OF THE WORK PROGRAMME OF PROJECT H2 – IMPLEMENTATION OF IAVW FOR THE SAM REGION	1-2
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15/5	DRAFT PROJECT H5 – IMPROVEMENTS TO MET SERVICES IN ACCORDANCE WITH THE NEW OPERATIONAL REQUIREMENTS IN SUPPORT OF ATM	4-2

LIST OF PARTICIPANTS**ARGENTINA**

1. Claudia Marcela Campetella
2. Claudio Alfredo Mattio

BOLIVIA

3. Aníbal Castro Cárdenas

CHILE

4. Reinaldo Gutiérrez

COLOMBIA

5. Jorge Enrique Saltarín Sanchez

ECUADOR

6. Eduardo Recalde
7. Lidia Boada Puga

PANAMA

8. Xenia Guardia Baule
9. Celestino Lamboglia

PARAGUAY

10. Carlos Roberto Salinas

PERU

11. Juana Ravines Ruiz
12. Julio Quezada Pacheco
13. Ricardo Reyes Távara
14. Rafael Narvaja Zarate

VENEZUELA

15. Alexander Gregorio Quintero Mercado

OMM/WMO

16. Scylla M. Sillayo

OACI/ICAO

17. Jorge Armoa

Agenda Item 1: Review of Project H2 – Implementation of the International Airways Volcano Watch (IAVW)

Under this Agenda Item, the following working papers were presented:

- WP/02 – Secretariat
- WP/03 – Secretariat
- WP/04 – Secretariat
- WP/05 – Secretariat

1.1 The Meeting reviewed the development of Project H2 - Implementation of the International Airways Volcano Watch (IAVW).

1.2 The Meeting considered that, since the approval of the project by the Programmes and Projects Review Committee (PPRC) of the CAR/SAM Regional Planning and Implementation Group (GREPECAS), the activities contemplated in the approved work plan had been conducted.

1.3 The Secretariat informed on the results of volcanic ash SIGMET tests, which, according to the initially approved timetable, should have been carried out by December 2014. The Secretariat also reminded the Meeting that GREPECAS/17, upon reviewing the status of Project H2 – Implementation of IAVW, had recommended, through Conclusion 17/11, paragraphs a) and b), to continue with these exercises, and had invited the NOTAM international offices (NOF) to participate actively. When reviewing the results of these exercises, the Meeting considered that the protocols currently being used in the exercises did not truly reflect the responsiveness of States upon the occurrence of volcanic activity, since everything was programmed and announced. The Meeting felt that, in order to measure these parameters, exercises should be conducted unannounced.

1.4 Regarding the above, the Secretariat noted that, in order to carry out these exercises, official letters had to be sent and, thus, the probable dates had to be known. With this clarification, the Meeting considered defining a period of time in which exercises would be conducted, but without specifying the exact date and time. Accordingly, the Meeting formulated the following draft conclusion:

DRAFT CONCLUSION

SAM/MP 15/01:

MODIFICATION OF THE PROTOCOLS OF VOLCANIC ASH SIGMET EXERCISES

That, in order to measure the responsiveness of States in the presence of volcanic activity or volcanic ash clouds in the FIR, the Secretariat should:

- a) modify the protocols so as to define the period of time in which the volcanic ash exercises would be conducted;
- b) establish a team of experts to review and modify the protocol currently used in volcanic ash exercises, under the coordination of the representative of Argentina and with the collaboration of the representatives of Peru and Ecuador;
- c) request that this task be included in the future work of Project H2 – Implementation of IAVW in the SAM Region.

1.5 The Meeting took note of a Special Implementation Project (SIP) carried out by the Secretariat in 2014 for the implementation of VONA (Volcano Observatory Notice to Aviation) by Volcano Observatories of the States in their communications with aviation. In this regard, work had been done with the authorities of Argentina, Colombia, Ecuador, Panama and Guyana for VONA implementation.

1.6 The Meeting took note of the review of the Guide for the preparation and dissemination of SIGMET messages for the Caribbean and South American Regions carried out by the COM/MET/2015 meeting, and informed of the existence of a template recommended by ICAO for SIGMET Guides for the Regions, as a result of **Agreed Action 5/4 of METWSG/5**. Taking into account the need to align the current guide to the template recommended by ICAO, and also considering that the document had not been reviewed in light of Amendment 76 and the future Amendment 77 to ICAO Annex 3, the Meeting deemed it advisable to recommend that the aforementioned template be reviewed, updated and adjusted. To this end, a team of experts made up by the representatives of Panama (Coordinator), Argentina, Ecuador, Paraguay, Peru and Venezuela was established. The Meeting also considered important to include this task in a future work programme of Project H2.

1.7 The Meeting took note of the concern expressed by the Secretariat regarding the absence of ATS/MET procedures in the States to address a possible release of radioactive material in any FIR of the SAM Region. In this regard, the Meeting agreed that any future programme of Project H2 should contemplate the drafting of a Regional Contingency Plan in case of release of radioactive material.

1.8 The Meeting was informed that the Volcanic Ash Contingency Plan had been completed and approved by the States as a reference manual for the drafting of national contingency plans for volcanic ash events.

1.9 The Secretariat informed that, at its third meeting, the PPRC had reviewed the status of Project H2 and had deemed it important to extend it, taking into account the tasks still pending.

1.10 The Meeting requested the Secretariat to inquire HQ about the headers that should be used for SIGMET for radioactive material. This issue is requested considering that Regulation No. 386 – Manual on the Global Telecommunication System of the World Meteorological Organization, in its 2015 version, Attachment II-5, has deleted the option “X” when T₁ is “W”, and does not present any option for “radioactive material”.

1.11 In view of the above, the Meeting felt the need to continue with Project H2 until 2017, with the modifications presented in **Appendix A** to this part of the report. Accordingly, it formulated the following draft conclusion:

DRAFT CONCLUSION
SAM/MP 15/02:

**EXTENSION OF THE WORK PROGRAMME OF
PROJECT H2 – IMPLEMENTATION OF IAVW FOR
THE SAM REGION**

That, in order to extend the work programme of Project H2 – Implementation of IAVW for the SAM Region, the States should:

- a) consider extending Project H2 until 2017, taking into account the tasks to be carried out under this project; and
- b) adopt the modifications to the tasks of the project as shown in Appendix A to this part of the report.

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
<p>Aeronautical meteorology</p> <p>(Programme coordinator: Jorge Armoa)</p>	<p style="text-align: center;">Implementation of the international airways volcano watch (IAVW)</p> <p><i>Project coordinator:</i> Roxana Vasquez Ferro (Argentina)</p> <p><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)</p>	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 radiactive 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	<ul style="list-style-type: none"> 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

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

Agenda Item 2: Review of Project H3 – Implementation of the MET Information Quality Management System (QMS/MET)

Under this Agenda Item, the following working papers and presentation were presented:

- WP/06 – Secretariat
- WP/07 – Secretariat
- WP/08 – Secretariat
- WMO Presentation
- Presentation on the Introduction to the ASBU - Secretariat

2.1 The Meeting was informed of the status of implementation of the QMS/MET in the SAM Region, as reflected in **Appendix A** to this part of the report.

2.2 The Meeting was aware that these results did not reflect the efforts made by the Secretariat and the support provided by the World Meteorological Organization (WMO), which should have resulted in a higher percentage of States with an implemented and certified QMS/MET.

2.3 The WMO representative emphasized the importance of QMS/MET implementation and of competency assessment for aeronautical meteorology personnel (ACP) and pointed out some important dates to be considered for these tasks.

2.4 The Meeting highlighted the impulse given to the Project during 2014 and 2015, period in which, with the support of the Secretariat and of the WMO, technical assistance had been provided to five States of the Region for the completion of QMS/MET implementation and ACP.

2.5 The Secretariat submitted to the consideration of the Meeting the changes made to standard ISO 9001 since September 2015. In this regard, it analysed the impact of the new standards on the QMS/MET systems already implemented and in process of implementation. The Meeting also took note of the recommendation of the WMO representative regarding completion of QMS/MET implementation based on ISO 9001:2008, since this would facilitate the transition to version 2015 of the aforementioned standard.

2.6 The Meeting also analysed the impact of the change made to standard ISO 9001 on the QMS/MET Guide, and concluded that it would be advisable to establish guidelines instead of modifying the Guide, since the approach of version 2015 of standard ISO 9001 was no documentary.

2.7 The Meeting took note of the methodology proposed by the WMO Representative to establish associations between States with mature QMS in order to assist States which have not completed QMS/MET implementation.

2.8 The Meeting also considered that all future tasks should be aligned with the ASBU and apply a holistic approach to contribute to improving the efficiency of the ATM community.

2.9 The Meeting also considered important to create an *ad-hoc* committee to develop a new work programme for Project H3 – QMS/MET Implementation. This team was made up by the representatives of Argentina, Panama, Paraguay, and Peru, and coordinated by the representative of Peru. The final project was discussed by the Meeting in a plenary session, and approved as shown in **Appendix B** to this part of the report.

2.10 In view of the above, the Meeting formulated the following draft conclusion:

DRAFT CONCLUSION
SAM/MP 15/03

**REVIEW AND UPDATING OF THE TASK
PROGRAMME OF PROJECT H3 – QMS/MET
IMPLEMENTATION**

That, in order to align the tasks to the changes made to standard ISO 9001 and to the ASBU methodology, the States should:

- a) extend the work programme of Project H3 until 2019; and
- b) modify the task programme of Project H3 in the terms established in Appendix B to this part of the report.

APPENDIX A**CURRENT STATUS OF QMS/MET IMPLEMENTATION IN THE SAM REGION**

QMS/MET Implementation – SAM Region			
STATE	Implemented	Certified	In process of certification
Argentina	✓	✓	
Bolivia	In process of implementation		20%
Brazil	✓	✓	
Chile	✓	✓	
Colombia	✓		Not initiated
Ecuador	In process of implementation		Not initiated
Guyana	✓		Not initiated
Guyana Francesa	✓	✓	
Panama	In process of implementation		30%
Paraguay	✓	✓	
Peru	✓	✓	
Suriname	✓	✓	
Uruguay	In process of implementation		30%
Venezuela	✓		Not initiated

APPENDIX B

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>

Agenda Item 3: Review of Project H4 – OPMET Exchange

Under this Agenda Item, the following working papers and presentations were presented:

- WP/09 – Secretariat
- WP/10 – Secretariat
- Presentation on the Transmission of OPMET data in XML format (Venezuela)
- Presentation on OPMET Exchange – XML (Venezuela)

3.1 Upon reviewing the working papers, the Meeting recalled that GREPECAS/17, when analysing the status of Project H4 – OPMET Exchange, formulated Conclusion 17/11, paragraph e), whereby the Brasilia International OPMET Databank (IODB) was invited to continue performing the quarterly OPMET exchange controls.

3.2 The Meeting also recalled that the COM/MET/2015 had analysed the results of the efficiency and quality controls of the data received at the IODB, and had taken note of the low levels of efficiency in some States, in addition to format errors and mutilated messages due to the fact that the information contained more characters than those allowed by transmission circuits. In this regard, the Secretariat noted that the concept of efficiency falls within the framework of the Recommendation contained in paragraph 1.1 of Appendix 10 to ICAO Annex 3.

3.3 The Meeting took note that the PPRC/3 had reviewed the status of Project H4 and, upon noting the errors identified in the OPMET controls carried out by the IODB, had highlighted the importance of the complaints of the industry regarding format errors in OPMET information, the absence of information on en-route phenomena in some States, and proposed amendment 77 to ICAO Annex 3, which recommended the transmission of OPMET data in digital format.

3.4 The Meeting requested the Secretariat to work with the representative of Ecuador in the review and updating of the Guide for the preparation and transmission of OPMET messages for the CAR/SAM Region.

3.5 The Meeting deemed it important to continue with the work programme of Project H4 – OPMET Exchange, in order to increase the efficiency and quality of the data distributed through the international OPMET information exchange circuits. In addition, the Meeting deemed it appropriate to include an approach for the transmission of data in digital format, so as to prepare States for OPMET data exchange in a globally interoperable format, thus facilitating the integration of data generated by the aeronautical meteorological services into a SWIM environment.

3.6 Accordingly, the Meeting established a team of experts to redefine the task programme of Project H4 - OPMET Exchange, under the coordination of the representative of Venezuela and made up by representatives of Argentina, Bolivia, Ecuador, Panama, and Peru. The programme prepared by this group of experts was subsequently discussed in plenary session and approved as shown in **Appendix A** to this part of the report.

3.7 Taking into account items 3.5 and 3.6 above, the Meeting formulated the following draft conclusion:

**DRAFT CONCLUSION
SAM/MP 15/04**

**REVISION AND EXTENSION OF THE TASK
PROGRAMME OF PROJECT H4 – OPMET EXCHANGE**

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

- a) extend the work programme of Project H4 until 2018; and
- b) adopt the changes proposed for the task programme of Project H4, in the terms established in Appendix A to this part of the report.

APPENDIX A

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
Aeronautical meteorology (Programme coordinator: Jorge Armoa)	<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	<p>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;</p> <p>b) Reach 70% OPMET data reception in XML/GML formats in the SAM Region in the Brasilia IODB by 31/10/18;</p> <p>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;</p> <p>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.</p>
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 *GreyTask 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

Agenda Item 4: Study the new project related to MET Services improvement in support of the ATM

Under this Agenda Item, the following working papers and presentations were presented:

- WP/11 – Secretariat
- Presentation: CDM (Secretariat)
- Presentation: Implementation of B0-105 module, AMET (Colombia)

4.1 Upon reviewing the working papers, the Meeting recalled that, in 2012, ICAO had produced the Fourth Edition of the Global Air Navigation Plan, which included the ASBU Methodology.

4.2 The Meeting took note of that expressed at the Meteorology Divisional Meeting (MET/2014) regarding all the ASBU Block modules for which meteorological information was important. These modules are listed in **Appendix A** to this part of the report.

The Meeting took note of the benefits provided by meteorological information to the ATM system under the Global ATM Operational Concept.

4.3 The Meeting noted that, in performance improvement area 2 (PIA 2), the ASBU methodology states that meteorological information is an integral component of the future system-wide information management environment, together with aeronautical information, flight and flow information, and other sources of information.

4.4 Furthermore, the Meeting took note of the implementations and automations carried out by Colombia within the ASBU Block 1 module B0-105 AMET implementation plan.

4.5 The Meeting noted that, within CDM and A-CDM processes, and taking into account the significant volume of additional air traffic foreseen for the next few years, it would be necessary to assign more importance to the impact of meteorological conditions on capacity and efficiency, and to the possibility of reducing some of the environmental impacts of aviation, while continuing to operate in a safe manner.

4.6 Accordingly, the Meeting agreed to establish an *ad-hoc* group to develop a draft project to assess the necessary improvements in the provision of meteorological information in support of an evolving ATM, collaborative decision-making (CDM), and airport collaborative decision-making (A-CDM). This group was made up by representatives of Colombia, Argentina, Chile, Ecuador, Panama, Paraguay, and Peru, with the advice of the representative of the World Meteorological Organization (WMO). The draft project is shown in **Appendix B** to this part of the report.

4.7 The Meeting considered that this draft should be submitted to the consideration of States in order to enrich its content, and then be presented as a Project to GREPECAS for its approval.

4.8 Accordingly, the Meeting requested the Secretariat to establish a suitable methodology for further study of the draft project through teleconferences or by mail. The Secretariat was also requested to ask States to designate focal points for the analysis of MET requirements in support of ATM CDM and A-CDM processes, as well as the implementation of ASBU modules in which meteorological information is important, so as to contribute to the safety, efficiency, and regularity of aircraft operations.

4.9 Taking into account that stated in 4.8 above, the Meeting formulated the following recommendation:

**RECOMMENDATION
SAM/MP 15/05**

**DRAFT PROJECT H5 – IMPROVEMENTS TO MET
SERVICES IN ACCORDANCE WITH THE NEW
OPERATIONAL REQUIREMENTS IN SUPPORT OF
ATM**

That, in order to implement MET products in support of the new ATM operational requirements, the Secretariat should:

- a) establish mechanisms to improve draft Project H5 shown in Appendix B; and
- b) once its final format and content has been defined, submit it to the approval of GREPECAS.

APPENDIX A

NON-MET SPECIFIC ASBU MODULES WHERE AERONAUTICAL MET SERVICE WILL BE OF RELEVANCE

<i>Performance improvement area</i>	<i>Module reference</i>	<i>Module scope</i>
Airport operations	B0-ACDM	Improved Airport Operations through Airport-CDM
	B0-APTA	Optimization of Approach Procedures including Vertical Guidance
	B0-WAKE	Increased Runway Throughput through Optimized Wake Turbulence Separation
	B1-WAKE	Increased Runway Throughput through Dynamic Wake Turbulence Separation
	B2-WAKE	Advanced Wake Turbulence Separation (Time-based)
Globally interoperable systems and data	B1-DATM	Service Improvement through Integration of all Digital ATM Information
	B1-FICE	Increased Interoperability, Efficiency and Capacity through Flight and Flow Information for a Collaborative Environment Step-1 (FF-ICE/1) application before Departure
	B1-SWIM	Performance Improvement through the Application of System-Wide Information Management (SWIM)
	B2-FICE	Improved Coordination through multi-centre Ground-Ground Integration (FF-ICE/1 and Flight Object, SWIM)
	B2-SWIM	Enabling Airborne Participation in collaborative ATM through SWIM
	B3-FICE	Improved Operational Performance through the introduction of Full FF-ICE
Optimum capacity and flexible flights — through global collaborative ATM	B0-FRTO	Improved Operations through Enhanced En-Route Trajectories
	B1-FRTO	Improved Operations through Optimized ATS Routing
	B1-NOPS	Enhanced Flow Performance through Network Operational Planning
	B3-NOPS	Traffic Complexity Management

<i>Performance improvement area</i>	<i>Module reference</i>	<i>Module scope</i>
Efficient flight path — through trajectory-based operations	B0-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDO)
	B0-CCO	Improved Flexibility and Efficiency in Departure Profiles — Continuous Climb Operations (CCO)
	B1-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDOs) using VNAV
	B1-TBO	Improved Traffic Synchronization and Initial Trajectory-Based Operation
	B2-CDO	Improved Flexibility and Efficiency in Descent Profiles (CDOs) using VNAV, required speed and time at arrival
	B3-TBO	Full 4D Trajectory-based Operations

APPENDIX B

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
Aeronautical Meteorology (Programme coordinator: Jorge Armoa)	Improvements to MET services in accordance with the new operational requirements in support of ATM <i>Project coordinator: Jorge Saltarin Sanchez (Colombia)</i> <i>Experts contributing to the project: Claudio Mattio (Argentina)</i> <i>Reinaldo Gutierrez (Chile)</i> <i>Arturo Lomas (Ecuador)</i> <i>Eduardo Recalde (Ecuador)</i> <i>Xenia Guardia Baude (Panama)</i> <i>Carlos Roberto Salinas (Paraguay)</i> <i>Ricardo Reyes Távora (Peru)</i>	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	Number of States that responded to the survey. Submission by States of an implementation programme to improve MET services, including human and technological factors.		
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	Completion of the proposed survey by 100% of States. Submission of a continuous improvement programme in the provision of MET services by 100% of States.		
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>

Agenda Item 5: Other business

5.1 Under this agenda item, no working papers were presented.