



**SAM COM/MET 2012**

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**South American Regional Office**

**COM/MET 2012  
IMPLEMENTATION MEETING**

**FINAL REPORT**

**(Lima, Peru, 1 to 3 August 2012)**

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Tables MET 1A and MET 2A, information availability and quality
- b) Review of the results of the 2010 and 2011 OPMET exchange coordinated controls
- c) Reception of OPMET products through the WIFS

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## HISTORY OF THE MEETING

### ii.1 PLACE AND DURATION OF THE MEETING

The SAM COM/MET 2012 Implementation Meeting was held from at the premises of the ICAO South American Office. The Meeting commenced on 1 August and, after reviewing all Agenda Items, ended on 3 August 2012.

### ii.2 OPENING CEREMONY

Mr. Franklin Hoyer, ICAO South American Regional Director, welcomed the participants and highlighted the objectives of the meeting, providing a brief explanation of the subjects to be examined. In addition, he welcomed the participants and expressed his satisfaction for the holding of this event, wishing it success and declaring the meeting officially opened.

### ii.3 ORGANIZATION OF THE MEETING

The Meeting was chaired by Mr. Jorge Leguizamón (Argentina), and Mrs. Nohora Arias, Aeronautical Meteorology Regional Officer of the ICAO South American Office, acted as Secretary of the meeting, assisted by Mr. Onofrio Smarrelli, Communications, Navigations and Surveillance Regional Officer of the ICAO SAM Office.

### ii.4 WORKING LANGUAGES

The working language of the Meeting was Spanish, with simultaneous interpretation services into English.

### ii.5 AGENDA

The following agenda was adopted:

Agenda Item 1: OPMET exchange

- a) Review of OPMET exchange requirements on the basis of CAR/SAM FASID Tables MET 1A and MET 2A, information availability and quality
- b) Review of the results of the 2010 and 2011 OPMET exchange coordinated controls
- c) Reception of OPMET products through the WIFS

Agenda Item 2: Follow up to the implementation of the ATN architecture and its applications in the SAM Region and considerations to support the meteorology service in the aeronautical applications

Agenda Item 3: Proposal for amendment to Annex 3 – *Meteorological service for International air navigation* – Follow up to the analysis on requirements for the new OPMET (METAR/SPECI and TAF) messages format

Agenda Item 4: Review to the updating of the OPMET Guide with respect to the SAM Region

Agenda Item 5: Introduction to *Aviation System Block Upgrade* (ASBU) initiative, and its impact in the planning of meteorology and communications systems and services

Agenda Item 6: Other business

## ii.6 **SCHEDULE AND WORKING METHODS**

The Meeting agreed to carry out its working sessions from 0900 to 1530 hours, with appropriate breaks.

## ii.7 **ATTENDANCE**

The Meeting was attended by 20 delegates of 8 SAM States. The list of participants is shown on page iii-1.

## ii.1 **LIST OF CONCLUSIONS**

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13. José Castillo Espinoza
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15. Raúl Anastacio Granda
16. Jorge Otiniano
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**Agenda Item 1: OPMET exchange****a) Review of OPMET exchange requirements on the basis of CAR/SAM FASID Tables MET 1A and MET 2A, information availability and quality**

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

- WP/02 – Secretariat
- WP/03 – Secretariat
- WP/09 – Argentina

1.1 The Meeting reviewed and updated OPMET data requirements in CAR/SAM FASID Tables MET 1A and MET 2A and the list of points of contact for OPMET exchange, which is included as **Appendix** to this part of the report.

1.2 With respect to the availability and quality of OPMET information, the Meeting agreed that as a complement to the procedures and processes regarding the quality of OPMET information, the OPMET focal points would inform the Secretariat on any deviation found in OPMET information received in their States and approve the following conclusion:

**CONCLUSION COM/MET 12/01 - AVAILABILITY AND QUALITY OF OPMET INFORMATION**

That, as a complement to the procedures and processes regarding the quality of meteorological information:

- a) the OPMET Focal Points inform the MET Programme Coordinator on any deviation found in OPMET information received in their States; and
- b) the Secretariat inform the corresponding MET department so that the necessary corrective measures are taken.

**b) Review of the results of the 2010 and 2011 OPMET exchange coordinated controls**

1.3 The Meeting made a detailed analysis of the results of OPMET exchange controls corresponding to the period from 10 to 16 June 2011 and 2012 of the States of the SAM Region participating in the control and of the controls of OPMET data carried out by the Brasilia International OPMET Databank.

1.4 Taking into consideration that, in general terms, the States of the SAM Region are not having operational problems due to the lack of OPMET data and that, when necessary, they are using without problems the Brasilia International OPMET databank, the Meeting considered that it was not necessary to continue with the OPMET exchange coordinated controls in the SAM Region, therefore, the following Conclusion was approved:

## **CONCLUSION COM/MET 12/02 – SUSPENSION OF OPMET DATA COORDINATED CONTROLS**

That, starting 2014, the OPMET data coordinated controls carried out the by the States of the SAM Region be suspended.

1.5 When analyzing the results of the OPMET data controls carried out by the Brasilia International OPMET Databank four times a year, the Meeting considered necessary to call the attention of the referred Bank so that they:

- carry out the controls 4 times a year, only of the States of the CAR and SAM Regions;
- take into consideration only the AOP aerodromes of CAR/SAM FASID Table 1A;
- take into consideration the hours of operation of the aerodromes to determine the efficiency of the control; and
- review the procedures to determine the efficiency of the controls.

### **c) Reception of OPMET products through WIFS**

1.6 Under this Agenda Item, the meteorologist Jorge Otiniano of the Peruvian delegation, made an excellent presentation to the Meeting on the arrangements carried out in his State to extract OPMET data from WAFS through the WAFS Internet File Services (WIFS), which was highly appreciated by the participants.

## APPENDIX

## LIST OF POINTS OF CONTACT FOR OPMET EXCHANGE

## SAM REGION

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**Agenda Item 2: Follow up to the implementation of the ATN architecture and its applications in the SAM Region and considerations to support the meteorology service in the aeronautical applications**

2.1 The Meeting took note that, with AMHS implementation completed by Bolivia and Ecuador at the end of 2011, all SAM States, with the exception of French Guiana (France) and Uruguay, have AMHS installed.

2.2 **Appendix A** to this Agenda Item shows the current AMHS installed in the SAM Region.

2.3 In addition, the Meeting noted the status of implementation of the MTA interconnections in the SAM Region using P1 Protocol, being the following implemented to date:

- a) Argentina-Paraguay;
- b) Colombia-Peru; and
- c) Guyana-Suriname.

2.4 The AMHS interconnection between Guayaquil and Lima was conducted during the first week of July 2012, and is the first AMHS interconnection between equipment from different manufacturers. The remaining interconnections were carried out with equipment from a same manufacturer. The swiftness in effecting this interconnection should be highlighted upon, whose activities started in the beginning of 2012, date when a Memorandum of Understanding (MoU) was signed between Ecuador-Peru. All this, due to the excellent work of the technical and operational staff from the States' civil aviation administrations.

2.5 The Meeting also took note that, prior to the interconnection of AMHS, the SAM Region had established the drafting of MoU, describing the technical/operational aspects for the interconnections, as well as naming the focal points to coordinate the implementation activities.

2.6 Finally, the Meeting deemed it important that the AMHS interconnections be completed, taking into account the dates indicated in the action plan shown in **Appendix B** to this Agenda Item.



**APPENDIX A / APENDICE A**

**STATUS OF IMPLEMENTATION OF AMHS IN THE SAM REGION  
 ESTADO DE IMPLANTACION DE LOS SISTEMAS AMHS EN LA REGION SAM**

STATE/ ESTADO	MANUFACTURER/ FABRICANTE	YEAR OF INSTALLATION/ AÑO DE INSTALACION	REMARKS/ OBSERVACIONES
ARGENTINA	RADIOCOM	Dec 2005	Three MTAs installed: Ezeiza, Cordoba and Comodoro Rivadavia/ Se tienen instalados tres MTA: Ezeiza; Córdoba; y Comodoro Rivadavia  Ezeiza MTA connected with MTA Asuncion using P1 protocol (March 2012) / MTA Ezeiza conectado con Protocolo P1 con el MTA de Asunción (Marzo 2012)
BOLIVIA	THALES	Dec 2011	Equipment installed at the end of 2011 / Equipos instalados a finales del 2011
BRASIL	RADIOCOM	Jun 2009	Two MTAs installed: Brasilia; and Manaus / Se tienen instalados dos MTA: Brasilia; y Manaus
CHILE	THALES	Jun 2010	The AMHS system was completed by the end of 2010 / El sistema AMHS se completó a finales del 2010
COLOMBIA	COMSOFT	Dec 2009	AMHS interconnected with Peru. First AMHS interconnection in the CAR SAM Region / Está interconectado con el AMHS con Perú. Primera interconexión AMHS en las Regiones CAR/SAM
ECUADOR	THALES	Feb 2012	A new AMHS from Thales was installed and in operation since February 2012 / Un nuevo sistema AMHS de la marca Thales fue instalado y está en operación desde febrero de 2012
GUYANA	SKYCOM	2011	Operational since May 2011. AMHS interconnected with Surinam, with P1 Protocol / En operación desde finales de mayo 2011. Está interconectado en AMHS con Surinam con protocolo P1
FRENCH GUIANA (FRANCE)	AFTN SIGMA	2009 2012	Version 17 will be installed in June 2012 / La versión V17 se realizará en junio de 2012
PANAMA	COCESNA THALES	End of 2013 / Finales de 2013	Panama approved the acquisition of a new AMHS system from THALES, the same it is expected to be in operation at the end of the first quarter 2013 / Panamá aprobó la adquisición de un Nuevo sistema AMHS de la marca Thales que estará operacionalmente en operación a finales del primer trimestre de 2013
PARAGUAY	RADIOCOM	2007	An update of its AMHS was made in March 2012 / Una actualización del sistema AMHS se realizó en marzo de 2012

STATE/ ESTADO	MANUFACTURER/ FABRICANTE	YEAR OF INSTALLATION/ AÑO DE INSTALACION	REMARKS/ OBSERVACIONES
PERU	COMSOFT	Jun 2009	AMHS interconnected with Colombia since November 2010. First AMHS interconnection in the CAR/SAM Regions / Está interconectado con el AMHS con Colombia desde noviembre de 2010. Primera interconexión AMHS en las Regiones CAR/SAM
SURINAME	SKYCOM	2011	Operational since the start of 2011. Interconnected with Guyana / En operación desde inicios de 2011. Interconectado con Guyana
URUGUAY	AFTN from Global Weather	End of 2013 / Finales de 2013	Currently in the purchasing process / Se encuentra en el proceso de adquisición
VENEZUELA	RADIOCOM	2010	AMHS installed since the end of 2010 / Sistema AMHS instalado desde finales del 2010

## APPENDIX B

## ACTION PLAN FOR THE INTERCONNECTION OF AMHS SYSTEMS IN THE SAM REGION

ITEM	ACTIVITY	RESPONSIBLE	EXPECTED RESULT	STATUS	FINALIZATION DATE
1	2	3	4	5	6
1	Review of the ATN Regional Plan as regards AMHS implementation	Secretariat	Revised ATN ground applications plan (Table CNS 1Bb)	Completed	Jun 2009
2	Review and assignment of intra-regional routers IP addressing	Secretariat	Assignment of IP addressing	Completed	Jun 2009
3	Review of CAAAS addressing plan	SAM States	Revised CAAS addressing Plan	Completed	Jun 2009
4	Prepare interconnection protocol tests to determine bandwidth required for transmission of AMHS messages between MTAs through REDDIG	RLA/06/901 project CNS Expert	Protocol interconnection tests. A guide for the operational interconnection of AMHS systems was drafted	Completed	Dec 2009
5	Preparation of Guide for the Operational Interconnection of AMHS Systems in the SAM Region	RLA/06/901 project CNS Expert	Guide for the operational interconnection of AMHS systems in the SAM Region	Completed	Oct 2009
6	Drafting of a model MoU for the interconnection of AMHS	Argentina	Model MoU for the interconnection of AMHS	Completed	Oct 2009
7	<p>MoU for the interconnection of AMHS currently implemented in the SAM Region:</p> <ul style="list-style-type: none"> <li>a) Argentina-Brazil</li> <li>b) Argentina-Chile</li> <li>c) Argentina-Peru</li> <li>d) Argentina-Paraguay</li> <li>e) Brazil-Colombia</li> <li>f) Brazil-Paraguay</li> <li>g) Brazil-Peru</li> <li>h) Chile-Peru</li> <li>i) Colombia-Peru</li> <li>j) Colombia-Panama</li> <li>k) Colombia-Venezuela</li> <li>l) Peru-Venezuela</li> <li>m) Brazil-Suriname</li> <li>n) Guyana-Venezuela</li> <li>o) Suriname-Venezuela</li> <li>p) Brazil-Guyana</li> <li>q) Guyana-Suriname</li> <li>r) Brazil-Venezuela</li> <li>s) Bolivia-Peru</li> <li>t) Bolivia-Brazil</li> <li>u) Bolivia-Argentina</li> <li>v) Ecuador-Peru</li> <li>w) Ecuador-Colombia</li> <li>x) Ecuador-Venezuela</li> <li>y) Bolivia-Paraguay</li> </ul> <p>The AMHS interconnection MoU in French Guiana (France) and Uruguay should be drafted once AMHS installation is completed at national level.</p>	SAM States involved	MoU for interconnection of AMHS systems between SAM States having AMHS implemented	<b>Valid</b> a), b) c), d), f), g), i), q) & v) completed	<ul style="list-style-type: none"> <li>h) Oct 2012</li> <li>j) Mar 2013</li> <li>k) Oct 2012 SAMIG10</li> <li>l) Jul 2012</li> <li>m) Oct 2012 SAMIG10</li> <li>n) Oct 2012 SAMIG10</li> <li>o) Oct 2012</li> <li>p) Oct 2012</li> <li>r) Oct 2012</li> <li>s) Oct 2012 SAMIG10</li> <li>t) Dec 2012</li> <li>u) Oct 2012 SAMIG10</li> <li>w) Mar 2013</li> <li>x) Mar 2013</li> <li>y) Oct 2012 SAMIG10</li> </ul>

ITEM	ACTIVITY	RESPONSIBLE	EXPECTED RESULT	STATUS	FINALIZATION DATE
1	2	3	4	5	6
8	<p>Phase I Interconnection trials between MTAs of:</p> <ul style="list-style-type: none"> <li>a) Argentina-Brazil</li> <li>b) Argentina-Paraguay</li> <li>c) Brazil-Paraguay</li> <li>d) Colombia-Peru</li> <li>e) Argentina-Chile</li> <li>f) Argentina-Peru</li> <li>g) Brazil-Peru</li> <li>h) Guyana-Suriname</li> <li>i) Ecuador-Peru</li> <li>j) Brazil-Colombia</li> </ul> <p>Types of tests to carry out: Network transportation; Network connectivity; Message exchange; Preparatory phase.</p> <p><b>Note:</b> Inclusion has been made of only the AMHS interconnected between States having implemented and signed the MoU.</p>	<p>Argentina, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname and REDDIG Administration</p>	<p>Interconnection trials between Argentina, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru and Suriname MTAs</p>	<p><b>Valid</b> a) message exchange trials were held between Brasilia (Brazil) and CIPE (Argentina) MTAs c) MoU was updated, as entrance node to Brazil will be Curitiba, and the network connectivity, and transport and exchange of messages tests will be carried out. b), d), h) and i) Operational interconnection trials completed c), e), i), and j) No tests carried out f) operational trial pending</p>	<ul style="list-style-type: none"> <li>a) Jun 2012</li> <li>b) Mar 2012</li> <li>c) Oct 2012</li> <li>d) Oct 2010</li> <li>e) Oct 2012</li> <li>f) Aug 2012</li> <li>g) Jun 2012</li> <li>h) Jun 2011</li> <li>i) Jul 2012</li> <li>j) Dec 2012</li> </ul>
9	<p>Operational interconnection implementation at the following MTAs:</p> <ul style="list-style-type: none"> <li>a) Argentina-Paraguay</li> <li>b) Argentina-Brazil</li> <li>c) Argentina-Chile</li> <li>d) Argentina-Peru</li> <li>e) Brazil-Paraguay</li> <li>f) Brazil-Peru</li> <li>g) Colombia-Peru</li> <li>h) Guyana-Suriname</li> <li>i) Ecuador-Peru</li> <li>j) Brazil-Colombia</li> </ul> <p><b>Note:</b> Inclusion has been made of only the AMHS interconnected between States having implemented and signed the MoU.</p>	<p>Argentina, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru and Suriname</p>	<p>Operational implementation of AMHS systems</p>	<p><b>Valid</b> AMHS interconnection completed between following MTA, using P1 protocol and operational: Colombia-Peru Guyana-Suriname Argentina-Paraguay Ecuador-Peru</p>	<ul style="list-style-type: none"> <li>a) Mar 2012</li> <li>b) Jun 2012</li> <li>c) TBD</li> <li>d) Oct 2012</li> <li>e) Dec 2012</li> <li>f) Oct 2012</li> <li>i) Jul 2012</li> <li>j) Mar 2013</li> </ul>

**Agenda Item 3:            Proposal for amendment to Annex 3 – *Meteorological service for International air navigation* – Follow up to the analysis on requirements for the new OPMET (METAR/SPECI and TAF) messages format**

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

- WP/06 (Secretariat)
- IP/03 (Secretariat)

3.1            The Meeting, when analyzing proposal for amendment to Annex 3, related to the dissemination of OPMET messages (METAR, SPECI, TAF and SIGMET) in digital form, deemed appropriate to make tests among the States of the Region that are in the availability to do so.

3.2            The tests will consist in the exchange between pairs of States of OPMET information in digital form using XML/GML format through the AMHS. In order to make these tests, it is required that the AMHS systems be interconnected through protocol P1 and not through the Gateway (AMHS/AFTN) in view that the AFTN does not accept some characters of XML format. In this regard and taking into account the information presented in Agenda Item 2 on the status of implementation of AMHS systems and their interconnection, the Meeting considered that at the beginning tests could be made between Peru and Ecuador and between Argentina and Paraguay. Other States interested in making the tests could also made them informing the ICAO Regional Office.

3.3            In order to carry out the tests, the MET personnel of each interested State should coordinate with the technical and operational personnel to encapsulate the OPMET information in XML format and insert it in the AMHS through a user terminal. The OPMET information in XML format will be transmitted as a file annexed to the AMHS message. The coordinations for the tests would be made by the points of contact designated for OPMET exchange in the SAM Region and their results would be submitted to ICAO SAM Office to inform all the States of the Region.

3.4            In this regard, the Meeting formulated the following conclusion:

**CONCLUSION COM/MET/12/03    OPMET EXCHANGE TESTS IN DIGITAL  
FORMAT (XML/GML)**

That, the Aeronautical Administrations of Peru and Ecuador / Argentina and Paraguay, as well as other pairs of interested States, in order to accomplish the recommendation presented in Appendix 3 to the proposal for amendment to Annex 3:

- a)            carry out OPMET exchange tests (METAR, SPECI, TAF and SIGMET) using the XML/GML format transmitting the information through the AMHS system;
- b)            submit the results of the tests to ICAO SAM Regional Office not later than 31 December 2012; and
- c)            once the information is received, ICAO disseminates the results of the tests to the States of the Region.





**Agenda Item 4:           Review to the updating of the OPMET Guide with respect to the SAM Region**

4.1                   Under this Agenda Item, the Meeting examined the Brasilia OPMET Data Bank Catalogue and the OPMET Guide for the CAR/SAM Regions.



**Agenda Item 5:           Introduction to *Aviation System Block Upgrade* (ASBU) initiative, and its impact in the planning of meteorology and communications systems and services**

5.1           Under this Agenda Item, the Meeting examined WP/08 and the presentations on the MET contribution to the ATM operational concept and on the introduction of the *Aviation System Block Upgrades* (ASBU) initiative.

5.2           The Meeting took noted of the ICAO ASBU initiative, a programmatic framework that develops a set of air traffic management (ATM) solutions or upgrades taking advantage of current equipage; establishing a transition plan; and enabling global interoperability.

5.2.1        The ASBU comprises suites of modules, each having the following essential elements:

- a)       a clearly defined and measurable operational improvement and success metric;
- b)       necessary equipment and/or systems in aircraft and on the ground, along with an operational approval or certification plan;
- c)       standards and procedures for both airborne and ground systems; and
- d)       a positive business case over a clearly defined period of time.

5.2.2        The modules are organized into flexible and scalable building blocks that can be introduced and implemented in a State or a region depending on need and level of readiness, while recognizing that all the modules are not required in all airspaces.

5.2.3        The four performance improvement areas are as follows:

- e)       Airports operation;
- f)       Globally Interoperable Systems and Data;
- g)       Optimum Capacity and Flexible Flights; and
- h)       Efficient Flight Path.

5.2.4        The block upgrades describe ways to apply the concepts defined in the ICAO Global Air Navigation Plan (Doc 9750) with the goal of achieving regional performance improvements. They will include the development of technology roadmaps to ensure that standards are mature and to facilitate synchronized implementation between air and ground systems and between regions. The ultimate goal is to achieve global interoperability. Safety demands this level of interoperability and harmonization which must be achieved at a reasonable cost with commensurate benefits. Leveraging upon existing technologies, block upgrades are organized in five-year time increments starting in 2013 continuing through 2028 and beyond. Such a structured approach provides a basis for sound investment strategies and will generate commitment from States, equipment manufacturers, operators and service providers.

5.3 The Meeting noted that, as consequence of the ICAO ASBU initiative, the *Air Navigation System Performance-Based Implementation Plan for the SAM Region (SAM PBIP)* needs to be harmonized with the ASBU in order to achieve global airspace interoperability. To carry out this activity, the *Performance Framework Forms (PFF)* in the SAM PBIP will have to be adapted with the Blocks modules, mostly Block 0, as the SAM PBIP covers the 2012-2018 period. To carry out this task, the Meeting was informed that a workshop has been scheduled to be conducted in Lima, Peru, in the second quarter of 2013, with the support of project RLA/06/901.

5.4 The Meeting invited the States to follow-up on the initiative and consider it when planning for the implementation of the regional and domestic meteorological and communications services and systems.

**Agenda Item 6: Other business**

6.1 Under this Agenda Item, the Meeting agreed on the increasing need of the aerodrome meteorological offices to count with the support of information technology personnel, in order to meet current and future users requirements, and approved the following Conclusion:

**CONCLUSION COM/MET 12/04 - INFORMATION TECHNOLOGY SUPPORT AT  
AERODROME METEOROLOGICAL OFFICES**

That, with the aim of complying with the users current and future requirements, the administrations of the MET service providers make all necessary arrangements to guarantee the support of information technology personnel at aerodrome meteorological offices.

6.2 The Meeting recalled that since the application of the quality management system of meteorological information (QMS/MET) on 15 November 2012, States will require, inter alia, that aeronautical meteorological services have a national regulation.

6.3 In this regard, the Meeting took note that based on ICAO Annex 3 and the Regulations of Brazil and Cuba, under the administration of the ICAO Secretariat and the Regional Safety Oversight Cooperation System (SRVSOP) and the resources of RLA/95/003 Project – Development of Continuing Airworthiness and Operational Safety of Aircraft in Latin America, the work for the development of two parts of the LAR MET began, with the assistance of experts from Brazil and Cuba.

6.4 The Meeting agreed to align the method of the LAR MET with the different units of the MET service.

6.5 In addition, the Meeting thanked the quality management expert, Mr. David Díaz, for the excellent presentation he delivered on how MET services should align themselves with ATM under the safety concept approved by the ICAO Eleventh Air Navigation Conference.

6.6 Under this Agenda Item, the Secretariat thanked the participants for their excellent participation and contributions, which will improve the exchange of OPMET information in the SAM Region.