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|       | d) review of the data catalogue of the Brasilia International OPMET Databank;  |   |
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## HISTORY OF THE MEETING

### ii-1 PLACE AND DURATION

The 2019 SAM COM/MET Implementation Meeting was held in Lima, Peru, on 23-25 April 2019.

### ii-2 OPENING CEREMONY AND OTHER MATTERS

Mr. Fabio Rabbani, Director of the ICAO South American Office welcomed the participants, and highlighted the importance of the issues to be addressed in relation to coordination between the COM and MET areas. He underlined the efficiency of OPMET messages and their transition to a digital format. Furthermore, he mentioned the importance of monitoring atmospheric conditions to mitigate risks to aircraft operations. He also noted that projects were currently being carried out in coordination between GREPECAS and RASG-PA for the implementation of measures to mitigate the risk of meteorological phenomena, in view of aircraft incidents occurred in the Region as a result of phenomena with adverse effects on air navigation.

### ii-3 SCHEDULE, ORGANISATION, WORK METHOD, OFFICERS AND SECRETARIAT

Mr. Aníbal Castro, MET expert of the Directorate General of Civil Aviation of Bolivia, was elected as Chairperson of the Meeting. Mr. Jorge Armoa, Aeronautical Information Management and Meteorology Regional Officer of the ICAO South American Office, acted as Secretary, with the support of Mr. Francisco Almeida, Communications, Navigation and Surveillance Regional Officer of the ICAO South American Office.

The Meeting agreed to conduct its sessions from 09:00 to 15:00 hours.

### ii-4 WORKING LANGUAGES

The working language was Spanish, and the documentation for the Meeting was presented in that language.

### ii-5 AGENDA

The following Agenda was adopted:

- Agenda Item 1: OPMET exchange
- a) review of OPMET exchange requirements
  - b) review of the results of OPMET exchange controls for 2017, 2018 and 2019;
  - c) operation, functioning, and use of the Brasilia International OPMET Databank;
  - d) review of the data catalogue of the Brasilia International OPMET Databank;
  - e) review of the CAR/SAM e-ANP, Part V-MET of Vol. I, Vol. II and of the OPMET guide for the CAR/SAM Regions;
  - f) drafting of the MET part of Vol. III of the CAR/SAM e-ANP;
  - g) analysis of opportunities for improvement observed in the transmitted OPMET messages (METAR, SPECI, TAF, SIGMET).

- Agenda Item 2: Follow-up to the regional implementation of the ATN architecture implementation project and of ATN ground-ground applications in the SAM Region (AMHS systems and interconnection thereof).
- Agenda Item 3: Review of SIGMET messages. Analysis of their format and exchange
- Agenda Item 4: Exercises of SIGMET messages for volcanic ash. Evolution and future
- Agenda Item 5: Amendment 78 to Annex 3. Implementation of OPMET data exchange in XML/GML format, model IWXXM, preparation for the exchange of OPMET messages in a SWIM environment and space condition messages (space weather).
- Agenda Item 6: Other business

## ii-6 ATTENDANCE

The Meeting was attended by eight SAM States (Argentina, Bolivia, Colombia, Panama, Paraguay, Peru, Uruguay, and Venezuela), one NACC State (Cuba), one international organisation (IFAIMA), totalling 27 participants. The list of participants appears on page iii-1.

## ii-7 LIST OF RECOMMENDATIONS

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**LIST OF PARTICIPANTS****URUGUAY****ARGENTINA**

1. Fernando Daniel Calvo

18. Andrés Barboza García

19. César Vecino

**BOLIVIA**

2. Aníbal Castro Cárdenas
3. Iver Mijael Vargas Ponce de León

**VENEZUELA**

20. Alfredo Manrique

21. Aura Romero

22. Reidy Zambrano

23. Antonio Espinoza

**COLOMBIA**

4. Milton Balduino Zamudio Guauque

**IFAIMA**

24. Hugo Fernando Cruz Trujillo

**CUBA**

5. Uvaldo René Milián Díaz

**OACI**

25. Jorge Armoa

26. Francisco Almeida

**PANAMA**

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7. René Adilio Colman Torres

**PERÚ**

8. Hugo Rosado Soto
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10. José Sánchez Tejada
11. Raúl Anastacio Granda
12. Jorge Otiniano Rodríguez
13. Marco Bojorquez Luna
14. Harry Jack Alarcón Tambo
15. César Clark Carranza Cabrera
16. Edward La Serna Alfaro
17. Libio Benites Condori

**Agenda Item 1: OPMET Exchange**

- a) review of OPMET exchange requirements
- b) review of the results of OPMET exchange controls for 2017, 2018 and 2019;
- c) operation, functioning, and use of the Brasilia International OPMET Databank;
- d) review of the data catalogue of the Brasilia International OPMET Databank;
- e) review of the CAR/SAM e-ANP, Part V-MET of Vol. I, Vol. II and of the OPMET Guide for the CAR/SAM Regions;
- f) drafting of the MET part of Vol. III of the CAR/SAM e-ANP;
- g) analysis of opportunities for improvement observed in the transmitted OPMET messages (METAR, SPECI, TAF, SIGMET).

1.1 Under this agenda item, the Meeting reviewed the following working and information papers:

- WP/02, WP /03, WP /04, WP /05, IP/04

*WP/02 – OPMET exchange requirements (presented by the Secretariat)*

1.2 The Meeting analysed the OPMET message exchange table contained in Appendix C to the Guide on the production and dissemination of messages in the CAR/SAM Regions, also shown in **Appendix A** to this part of the report.

1.3 In this regard, the Meeting deemed it advisable to consider the need to complete that table based on scheduled and non-scheduled flights conducted between each State pair concerned, and to consider the alternate aerodromes for routes developed by aircraft operators to connect each State pair. Accordingly, the Meeting recommended that States conduct a review and send their updates and comments to the Secretariat by 17 May 2019. It also requested the Secretariat to follow up on the fulfilment of this action in those States that had not attended the Meeting.

1.4 The Meeting also reviewed the results of quarterly OPMET controls conducted by the Brasilia international OPMET databank. In this regard, low efficiency levels have been noted in Colombia, Venezuela, Suriname, Guyana and Panama. The States mentioned occasional difficulties experienced in connections through Atlanta, which could have caused these low efficiency levels.

1.5 Upon analysing this situation, the Meeting considered that two problems could have emerged, namely:

- a) Difficulties in communication systems; or
- b) Outdated tables used for exchange control

Accordingly, the Meeting recommended a review of the tables used for OPMET exchange controls of both aeronautical meteorological offices and meteorological watch offices, and their updating as needed. It also agreed to carry out OPMET data reception tests during 10 days at the Brasilia OPMET bank, requiring three minutes after delivery of the following:

- METARs on 4 schedules;
- SPECIs delivered;
- TAFs, all schedules; and
- SIGMETs delivered.

The results of these tests should be sent to the Secretariat by 31 May 2019.

*WP/03- Review of the data catalogue of the Brasilia international OPMET databank (presented by the Secretariat)*

1.6 The Meeting reviewed the data catalogue of the Brasilia international OPMET databank, noting that it had been updated pursuant to amendments 76, 77 and 78 of Annex 3 – Meteorological service for international air navigation. However, it considered that the tables of the aeronautical meteorological offices and the meteorological watch offices that had to deliver information to the OPMET bank (includes AOP and non-AOP airports) should be reviewed and updated as needed to truly reflect what each State was sending to the Brasilia OPMET bank. The Meeting recommended that States conduct these reviews and updates as required, and send them to the Secretariat by 17 May 2019. Likewise, the Meeting asked the Secretariat to send these new tables, once revised and updated, to the Brasilia OPMET databank to be used as the basis for OPMET exchange control.

*WP/04 – Review of Volumes I and II of the CAR/SAM e-ANP (presented by the Secretariat)*

1.7 The Meeting took note of the restructuring of the Regional Air Navigation Plan. The Meeting noted that the new plan, called CAR/SAM e-ANP, contained three volumes with the following information:

- Volume I, containing the stable elements of the plan, whose amendment required the approval of the Council;
- Volume II, containing the dynamic elements of the plan, whose amendment did not require the approval of the Council (approval is by regional agreement of the relevant PIRG); and
- Volume III, containing the dynamic/flexible elements of the plan, providing guidance for planning the implementation and modernisation of air navigation systems, taking into account emerging programmes, such as ASBU, and the roadmaps of associated technologies described in the GANP.

1.8 The Secretariat informed that Volumes I and II had been approved in 2016 and that Volume III had been postponed by virtue of Conclusion PPRC/4-3 until the approval of the GANP-sixth edition. The Secretariat also noted that, following its approval, it had been subject to constant reviews and updates, as required. Volumes I and II appear as **Appendices B and C** to this part of the report.

1.9 Upon reviewing the MET Tables of both volumes, the Meeting felt it was important to analyse those contained in Vol. II. The Meeting agreed to send comments and updates on 3 June of this year.

1.10 Regarding the development of the MET Table related to the VOLMET service, the Meeting felt that the need for its implementation should be analysed with the stakeholders. Some States noted that they were planning its implementation by 2020. The Meeting recommended consulting with the stakeholders and conducting a cost/benefit study to consider resuming the VOLMET or D-VOLMET service. The results of these analyses would be sent to the Secretariat by 30 August 2019.

1.11 The Meeting also reviewed the CAR/SAM Guide for the production and dissemination of OPMET messages, in line with amendments 76, 77 and 78 of ICAO Annex 3. The Meeting recommended that it be reviewed with the authorities and other areas of each State, and that comments be sent on 30 August this year.

*WP/05- Development of Part MET of Vol. III of the CAR/SAM e-ANP (presented by the Secretariat)*

1.12 The Meeting took note that the Global Air Navigation Plan was being revised and that it would be made available to the ICAO 40<sup>th</sup> Assembly for its review.

1.13 Taking into account that the MET part of Vol. III of the CAR/SAM e-ANP had to be developed based on the elements of the ASBU modules, the Secretariat made a presentation on the GANP portal and the approach taken in the Sixth edition with respect to the elements of the B0-AMET module. Furthermore, it presented the basic building blocks (BBBs) for the MET area.

1.14 The States have committed themselves to complete the Tables in each element of the B0-AMET module by 3 June of this year, giving sufficient time for their review and for preparing the action plans for those elements that had not been implemented.

*IP/04 – Results of OPMET exchange controls in 2018 at the airports of Ecuador (presented by Ecuador)*

1.15 Ecuador reported the results obtained from the OPMET exchange controls conducted by their OPMET databank. Controls were conducted on a monthly basis. The results may be seen in **Appendices D, E, F and G** to this part of the report. By way of conclusion, it may be said that the Quito international airport (SEQM) has the highest efficiency for AOPs, and the Riobamba airport (SERB) does so for NON-AOPs.

**INTERCAMBIO REGIONAL DE INFORMACIÓN METEOROLÓGICA OPERACIONAL  
DENTRO DE LAS REGIONES CAR/SAM**

**REGIONAL EXCHANGE OF OPERATIONAL METEOROLOGICAL INFORMATION  
WITHIN THE CAR/SAM REGIONS**

EXPLICACIÓN DE LA TABLA

- Columna 1: Nombre del aeródromo
- Columna 2: Indicador de lugar
- Columna 3: F = METAR/SPECI + TAF  
T = TAF con 18/24 horas de validez  
X = TAF con 30 horas de validez

EXPLANATION OF THE TABLE

- Column 1: Name of the aerodrome
- Column 2: Location indicator
- Column 3: F = METAR/SPECI + TAF  
T = TAF with 18/24 hours validity  
X = TAF with 30 hours validity

*Note.- Aerodromes not included in Table AOP are in italics/los aeródromos que no están listados en la Tabla AOP aparecen en letra cursiva.*

## **APPENDIX B**

## CAR/SAM ANP, VOLUME I

### PART V – METEOROLOGY (MET)

#### 1. INTRODUCTION

1.1 This part of the **CAR/SAM ANP** constitutes the agreed regional requirements considered to be the minimum necessary for effective planning and implementation of aeronautical meteorology (MET) facilities and services in the **Caribbean and South American** Regions and complements the provisions of the ICAO SARPs and PANS related to MET. It contains stable plan elements related to the assignment of responsibilities to States for the provision of MET facilities and services within the ICAO **Caribbean and South American** regions in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300) and mandatory requirements related to the MET facilities and services to be implemented by States in accordance with regional air navigation agreements.

1.2 The dynamic plan element related to the assignment of responsibilities to States for the provision of MET facilities and services and the mandatory requirements based on regional air navigation agreements related to MET are contained in the **CAR/SAM ANP** Volume II, Part V - MET.

1.3 The **CAR/SAM ANP** Volume III contains dynamic/flexible plan elements related to the implementation of air navigation systems and their modernization in line with the ICAO Aviation System Block Upgrades (ASBUs) methodology and associated technology roadmaps described in the Global Air Navigation Plan. The ASBU modules are aimed at increasing capacity and improving efficiency of the aviation system whilst maintaining or enhancing safety level, and achieving the necessary harmonization and interoperability at regional and global level. This includes the regionally agreed ASBU modules applicable to the specified ICAO region/sub-region and associated elements/enablers necessary for the monitoring of the status of implementation of these ASBU modules.

#### *Standards and Recommended Practices and Procedures for Air Navigation Services*

1.4 The SARPs and PANS and related guidance material applicable to the provision of MET are contained in:

- a) Annex 3 — *Meteorological Service for International Air Navigation*;
- b) *Regional Supplementary Procedures* (Doc 7030);
- c) *Handbook on the IAVW* (Doc 9766);
- d) *Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds* (Doc 9691);
- e) *Manual of Aeronautical Meteorological Practice* (Doc 8896);

#### 2. GENERAL REGIONAL REQUIREMENTS

*World area forecast system (WAFS) and meteorological offices*

2.1 In the **Caribbean and South American** Regions, **WAFC Washington** has been designated as the centre for the operation of the aeronautical fixed service satellite distribution system / WAFS Internet File Service (SADIS and/or WIFS) and the Internet-based Secure SADIS FTP service. The status of implementation of SADIS/WIFS by States in the **Caribbean and South American** Regions is detailed in Volume III.

2.2 In the **Caribbean and South American** Regions, WAFS products in digital form should be disseminated by **WAFC Washington** using the SADIS 2G satellite broadcast and the Secure SADIS FTP service and/or WIFS.

#### *Volcanic Ash*

2.3 Volcanic ash advisory centres (VAACs) **Buenos Aires, Washington and Wellington** have been designated to prepare volcanic ash advisory information for the **Caribbean and South American** Regions, as indicated below. The status of implementation of volcanic ash advisory information is detailed in Volume III.

2.4 Selected State volcano observatories have been designated for notification of significant pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash in the atmosphere for the **Caribbean and South American** Regions to their corresponding ACC/FIC, MWO and VAAC, as indicated at [Table MET I-1](#). The status of implementation of volcano observatory notice for aviation (VONA) is detailed in Volume III.

#### *Tropical Cyclone*

2.5 Tropical cyclone advisory centre (TCAC) **Miami** has been designated to prepare tropical cyclone advisory information for the **Caribbean and South American** Regions, as indicated below. The status of implementation of tropical cyclone advisory information is detailed in Volume III.

### **3. SPECIFIC REGIONAL REQUIREMENTS**

3.1 None

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**TABLE MET I-1 - STATE VOLCANO OBSERVATORIES****Explanation of the Table****Column**

- 1** Name of the State responsible for the provision of a volcano observatory  
**2** Name of the volcano observatory

| <b>State</b>                    | <b>Volcano observatory</b>   |
|---------------------------------|--|
| <b>1</b>                        | <b>2</b>   |
| <b>Argentina</b>                | Servicio Geológico Mínero Argentino, SEGEMAR, Buenos Aires   |
| <b>Chile</b>                    | Southern Andes Volcano Observatory (SAVO), Departamento de Ciencias Físicas, Temuco  |
|                                 | Servicio Nacional de Geología y Minería (SERNAGEOMIN), Santiago  |
| <b>Colombia</b>                 | Servicio Geológico Colombiano, Observatorios Vulcanológicos y Sismológicos de Manizales, Popayán y Pasto                   |
| <b>Costa Rica</b>               | Observatorio de Volcanes y Sismológico de Costa Rica, (OVSICORI-UNA), Heredia  |
| <b>Ecuador</b>                  | Instituto Geofísico y Sismológico, Quito   |
| <b>El Salvador</b>              | Servicio Nacional de Estudios Territoriales (SNET), Ministerio de Medio Ambiente y Recursos Naturales, (MARN), El Salvador |
| <b>French Antilles (France)</b> | Observatoire volcanologique de la Soufriere, Guadeloupe  |
|                                 | Observatoire volcanologique de la Pelée, Martinique  |
| <b>Guatemala</b>                | INSIVUMEH Sección Vulcanología, Ciudad de Guatemala  |
| <b>Guyana</b>                   | Guyana Geology and Mines Commission  |
| <b>Mexico</b>                   | Centro Nacional de Prevención de Desastres (CENAPRED)  |
|                                 | Centro Universitario de Investigaciones en Ciencias del Ambiente, Universidad de Colima                                    |
|                                 | Instituto de Geofísica, UNAM Observatorio de volcanes, Universidad de Colima   |
| <b>Montserrat (U.K.)</b>        | Montserrat Volcano Observatory   |
| <b>Nicaragua</b>                | Dirección General del Inst. Nicaragüense de Estudios Territoriales (INETER), Dirección de Vulcanología, Managua            |
| <b>Panama</b>                   | Instituto de Geociencias   |
| <b>Peru</b>                     | Instituto Geofísico del Perú (IGP), Arequipa   |
| <b>Trinidad and Tobago</b>      | Seismic Research Unit, University of Indies, St. Augustine   |

# APPENDIX C

## CAR/SAM ANP, VOLUME II

### PART V – METEOROLOGY (MET)

#### 1. INTRODUCTION

1.1 This part of the Caribbean and South American ANP, Volume II, complements the provisions in the ICAO SARPs and PANS related to aeronautical meteorology (MET). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of MET facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to the MET facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the States concerned to implement the requirements specified.

#### 2. GENERAL REGIONAL REQUIREMENTS

##### *Meteorological offices*

2.1 In the Caribbean and South American Regions, meteorological watch offices (MWO) have been designated to maintain continuous watch on meteorological conditions affecting flight operations within their area(s) of responsibility, as indicated at **Table MET II-1**.

##### *Meteorological observations and reports*

2.2 In the Caribbean and South American Regions, routine observations, issued as a METAR, should be made throughout the 24 hours of each day at intervals of one hour or, for RS and AS designated aerodromes<sup>[1]</sup>, at intervals of one half-hour at aerodromes as indicated in **Table MET II-2**. For aerodromes included on the VHF VOLMET broadcast as indicated in **Table MET II-3**, routine observations, issued as METAR, should be made throughout the 24 hours of each day. (at intervals of one half-hour) [if applicable]

2.3 At aerodromes that are not operational throughout 24 hours, METAR should be issued at least 3 hours prior to the aerodrome resuming operations in the Caribbean and South American Regions.

##### *Forecasts*

2.4 In the Caribbean and South American Regions, an aerodrome forecast, issued as a TAF, should be for the aerodromes indicated in **Table MET II-2**.

2.5 In the Caribbean and South American Regions, the period of validity of a routine TAF should be of 9-, 24-, or 30-hours to meet the requirements indicated in Table MET II-2.

2.6 In the Caribbean and South American Regions, the forecast maximum and minimum temperatures expected to occur during the period of validity, together with their corresponding day and time of occurrence, should be included in TAF at aerodromes indicated in Table MET II-2.

2.7 In the Caribbean and South American Regions, landing forecasts (prepared in the form of a trend forecast) should be provided at aerodromes indicated in Table MET II-2.

##### *Requirements for and use of communications*

2.8 Operational meteorological information prepared as METAR, SPECI and TAF for aerodromes indicated in **Table MET II-2**, and SIGMET and AIRMET messages prepared for flight information regions or control areas indicated in **Table MET II-1**, should be disseminated to the international OPMET databanks

designated for the Caribbean and South American Regions (namely IODB BRAZILIA of OPMET databank) and to the centre designated for the operation of the aeronautical fixed service satellite distribution system (SADIS) and the Internet-based service (Secure SADIS FTP) and/or WIFS in the CAR/SAM Region(s).

2.9 SIGMET messages should be disseminated to other meteorological offices in the Caribbean and South American Regions. (In accordance with the regional OPMET bulletin exchange scheme).

2.10 Special air-reports that do not warrant the issuance of a SIGMET should be disseminated to other meteorological offices in the Caribbean and South American Regions. (In accordance with the regional OPMET bulletin exchange scheme).

2.11 In the Caribbean and South American Regions, meteorological information for use by aircraft in flight should be supplied through VOLMET broadcasts.

2.12 In the Caribbean and South American Regions, the aerodromes for which METAR and SPECI are to be included in VOLMET broadcasts, the sequence in which they are to be transmitted and the broadcast time, is indicated in **Table MET II-3**.

### **3. SPECIFIC REGIONAL REQUIREMENTS**

None

## TABLE MET II-1 - METEOROLOGICAL WATCH OFFICES

### EXPLANATION OF THE TABLE

**Column**

- |   |   |
|---|---|
| 1 | Name of the State where meteorological service is required  |
| 2 | Name of the flight information region (FIR) or control area (CTA) where meteorological service is required<br><i>Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.</i>               |
| 3 | ICAO location indicator of the FIR or CTA   |
| 4 | Name of the meteorological watch office (MWO) responsible for the provision of meteorological service for the FIR or CTA<br><i>Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.</i> |
| 5 | ICAO location indicator of the responsible MWO  |
| 6 | Requirement for SIGMET information (excluding for volcanic ash and for tropical cyclones) to be provided by the MWO for the FIR or CTA concerned, where:<br>Y – Yes, required<br>N – No, not required   |
| 7 | Requirement for SIGMET information for volcanic ash to be provided by the MWO for the FIR or CTA concerned, where:<br>Y – Yes, required<br>N – No, not required   |
| 8 | Requirement for SIGMET information for tropical cyclone to be provided by the MWO for the FIR or CTA concerned, where:<br>Y – Yes, required<br>N – No, not required   |
| 9 | Requirement for AIRMET information to be provided by the MWO for the FIR or CTA concerned, where:<br>Y – Yes, required<br>N – No, not required  |

TABLE MET II-1 - METEOROLOGICAL WATCH OFFICES

| State              | FIR or CTA Where Meteorological Service is Required |                         | Responsible Meteorological Watch Office                 |                         | Meteorological Service To Be Provided |             |             |             |
|--------------------|---|-------------------------|---|-------------------------|---------------------------------------|-------------|-------------|-------------|
|                    | Name  | ICAO Location Indicator | Name  | ICAO Location Indicator | SIGMET (WS)                           | SIGMET (WW) | SIGMET (WC) | SIGMET (WA) |
| 1                  | 2   | 3                       | 4   | 5                       | 6                                     | 7           | 8           | 9           |
| Argentina          | Ezeiza  | SAEF                    | BUENOS AIRES/ Aeroparque, Jorge Newbery                 | SABE                    | Y                                     | Y           |             | N           |
|                    | Comodoro Rivadavia                                  | SAVF                    | COMODORO RIVADAVIA/General Mosconi                      | SAVC                    | Y                                     | Y           |             | N           |
|                    | Córdoba   | SACF                    | CORDOBA/Ing. Aer. A.L. Taravela                         | SACO                    | Y                                     | Y           |             | N           |
|                    | Mendoza   | SAMF                    | MENDOZA/ El Plumerillo                                  | SAME                    | Y                                     | Y           |             | N           |
|                    | Resistencia   | SARR                    | RESISTENCIA/ Resistencia                                | SARE                    | Y                                     | Y           |             | N           |
| Bolivia            | La Paz  | SLLP                    | La Paz/EI Alto Intl                                     | SLLP                    | Y                                     | Y           | N           | N           |
| Brazil             | Brasilia  | SBBS                    | BRASILIA/CINDACTA I                                     | SBBS                    | Y                                     | Y           | Y           | N           |
|                    | Curitiba  | SBCW                    | CURITIBA/CINDACTA II                                    | SBCW                    | Y                                     | Y           | Y           | N           |
|                    | Amazonica   | SBAZ                    | MANAUS/CINDACTA IV                                      | SBAZ                    | Y                                     | Y           | Y           | N           |
|                    | Recife Atlántico                                    | SBRE SBAO               | RECIFE/CINDACTA III                                     | SBRE                    | Y                                     | Y           | Y           | N           |
| Chile              | Antofagasta   | SCFZ                    | ANTOFAGASTA/Cerro Moreno SANTIAGO/Arturo Merino Benitez | SCFA<br>SCEL            | Y                                     | Y           | N           | N           |
|                    | Puerto Montt  | SCTZ                    | PUERTO MONTT/EI Tepual                                  | SCTE                    | Y                                     | Y           | N           | N           |
|                    | Punta Arenas  | SCCZ                    | PUNTA ARENAS/Pdte. C. Ibañez del Campo                  | SCCI                    | Y                                     | Y           | N           | N           |
|                    | Santiago  | SCEZ                    | SANTIAGO/Arturo Merino Benitez                          | SCEL                    | Y                                     | Y           | N           | N           |
| Colombia           | Bogotá  | SKED                    | Bogotá/EI Dorado  | SKBO                    | Y                                     | Y           | Y           | N           |
|                    | Barranquilla below FL200 (cf. Bogotá)               | SKEC                    |   |                         | N                                     | N           | N           | N           |
| Cuba               | Habana  | MUFH                    | HABANA/José Martí Intl                                  | MUHA                    | Y                                     | Y           | Y           | N           |
| Curazao            | Curazao   | TNCF                    | WILLEMSTAD/Hato, Curaçao I.                             | TNCC                    | Y                                     | Y           | Y           | N           |
| Dominican Republic | Santo Domingo                                       | MDSC                    | SANTO DOMINGO/ Jose Francisco Peña Gomez Intl           | MDSD                    | Y                                     | Y           | Y           | N           |
| Ecuador            | Guyaquil  | SEFG                    | GUAYAQUIL/José Joaquín de Olmedo                        | SEGU                    | Y                                     | Y           | N           | N           |

| State               | FIR or CTA Where Meteorological Service is Required |                         | Responsible Meteorological Watch Office                |                         | Meteorological Service To Be Provided |             |             |             |
|---------------------|---|-------------------------|--|-------------------------|---------------------------------------|-------------|-------------|-------------|
|                     | Name  | ICAO Location Indicator | Name   | ICAO Location Indicator | SIGMET (WS)                           | SIGMET (WV) | SIGMET (WC) | SIGMET (WA) |
| 1                   | 2   | 3                       | 4  | 5                       | 6                                     | 7           | 8           | 9           |
| French Guiana       | Cayenne   | S000                    | CAYENNE/ Rochambeau                                    | SOCA                    | Y                                     | Y           | Y           | N           |
| Guyana              | Georgetown  | SYGC                    | TIMEHRI/ Cheddi Jagan Intl                             | SYCJ                    | Y                                     | Y           | Y           | N           |
| Haiti               | Port-au-Prince                                      | MTEG                    | PORT-AU-PRINCE/ Port-au-Prince Intl                    | MTPP                    | Y                                     | Y           | Y           | N           |
| Honduras            | Central American                                    | MHTG                    | TEGUCIGALPA/ Toncontin Intl                            | MHTG                    | Y                                     | Y           | Y           | N           |
| Jamaica             | Kingston  | MKJK                    | KINGSTON/Norman al Manley Intl                         | MKJP                    | Y                                     | Y           | Y           | N           |
| México              | Mazatlán Oceanic México                             | MMFO<br>MMFR            | MEXICO/ Lic. Benito Juarez Intl                        | MMMXX                   | Y                                     | Y           | Y           | N           |
| Panamá              | Panamá  | MPZL                    | PANAMA/ Tocumen Intl                                   | MPTO                    | Y                                     | Y           | Y           | N           |
| Paraguay            | Asunción  | SGFA                    | ASUNCION/Silvio Pettirossi                             | SGAS                    | Y                                     | Y           | N           | N           |
| Peru                | Lima  | SPIM                    | LIMA-CALLAO/Jorge Chávez Intl                          | SPJC                    | Y                                     | Y           | N           | N           |
| Suriname            | Paramaribo  | SMPM                    | ZANDERY/Johan Adolf Pengel Intl                        | SMJP                    | Y                                     | Y           | Y           | N           |
| Trinidad and Tobago | Piarco  | TTZP                    | PORT OF SPAIN/Piarco Intl, Trinidad I.                 | TTPP                    | Y                                     | Y           | Y           | N           |
| United States       | San Juan FIR  | TJZS                    | KANSAS CITY INTERNATIONAL, MO. Aviation Weather Center | KMCI                    | Y                                     | Y           | Y           | N           |
| United States       | Miami ARTCC   | KZMA                    | KANSAS CITY INTERNATIONAL, MO. Aviation Weather Center | KMCI                    | Y                                     | Y           | Y           | Y           |
| United States       | Houston ARTCC                                       | KZHU                    | KANSAS CITY INTERNATIONAL, MO. Aviation Weather Center | KMCI                    | Y                                     | Y           | Y           | Y           |
| United States       | New York Oceanic                                    | KZNY                    | KANSAS CITY INTERNATIONAL, MO. Aviation Weather Center | KMCI                    | Y                                     | Y           | Y           | N           |
| United States       | Houston FIR/Oceanic FIR                             | KZHU                    | KANSAS CITY INTERNATIONAL, MO. Aviation Weather Center | KMCI                    | Y                                     | Y           | Y           | N           |
| United States       | Miami FIR /Oceanic FIR                              | KZMA                    | KANSAS CITY INTERNATIONAL, MO. Aviation Weather Center | KMCI                    | Y                                     | Y           | Y           | N           |
| Uruguay             | Montevideo  | SUEO                    | MONTEVIDEO/Carrasco Intl Gral. Cesareo L. Berisso      | SUMU                    | Y                                     | Y           | N           | N           |
| Venezuela           | Maiquetia   | SVZM                    | CARACAS/ Simon Bolivar Intl, Maiquetia                 | SVMI                    | Y                                     | Y           | Y           | N           |

## TABLE MET II-2 - AERODROME METEOROLOGICAL OFFICES

### EXPLANATION OF THE TABLE

#### Column

- |    |   |
|----|---|
| 1  | Name of the State where meteorological service is required  |
| 2  | Name of the AOP aerodrome where meteorological service is required<br><i>Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.</i>   |
| 3  | ICAO location indicator of the AOP aerodrome  |
| 4  | Designation of AOP aerodrome:<br>RG - international general aviation, regular use<br>RS - international scheduled air transport, regular use<br>RNS - international non-scheduled air transport, regular use<br>AS - international scheduled air transport, alternate use<br>ANS - international non-scheduled air transport, alternate use |
| 5  | Name of the aerodrome meteorological office responsible for the provision of meteorological service<br><i>Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.</i>                    |
| 6  | ICAO location indicator of the responsible aerodrome meteorological office  |
| 7  | Requirement for METAR/SPECI from the aerodrome concerned, where:<br>Y – Yes, required<br>N – No, not required   |
| 8  | Requirement for information on the state of the runway provided by the appropriate airport authority to be included as supplementary information in METAR/SPECI from the aerodrome concerned, where:<br>Y – Yes, required<br>N – No, not required   |
| 9  | Requirement for trend forecast to be appended to METAR/SPECI from the aerodrome concerned, where<br>Y – Yes, required<br>N – No, not required   |
| 10 | Requirement for TAF from the aerodrome concerned, where<br>C - Requirement for 9-hour validity aerodrome forecasts in TAF code (9H)<br>T - Requirement for 18/24-hour validity aerodrome forecasts in TAF code (18/24H)<br>X - Requirement for 30-hour validity aerodrome forecasts in TAF code (30H)<br>N – No, not required               |
| 11 | Requirement for maximum and minimum temperature (expected to occur during the period of validity of the TAF) to be included in TAF from the aerodrome concerned, where:<br>Y – Yes, required<br>N – No, not required  |
| 12 | Availability of METAR/SPECI and TAF from the aerodrome concerned, where:<br>F – Full availability : OPMET information as listed issued for the aerodrome all through the 24-hour period<br>P – Partial availability: OPMET information as listed not issued for the aerodrome for the entire 24-hour period                                 |

| State<br><br>1                 | Aerodrome where meteorological service is to be provided      |                              |                                      | Responsible aerodrome meteorological office |                              | Observations and forecasts to be provided |                          |                     |           |                         | METAR/SPECI and TAF availability<br>12 |
|--------------------------------|---|------------------------------|--------------------------------------|---|------------------------------|---|--------------------------|---------------------|-----------|-------------------------|--|
|                                | Name<br>2   | ICAO Location Indicator<br>3 | Use<br>4                             | Name<br>5                                   | ICAO Location Indicator<br>6 | METAR/SPECI<br>7                          | State of the runway<br>8 | Trend forecast<br>9 | TAF<br>10 | Temperature Tx/Tn<br>11 |  |
| Anguilla (United Kingdom)      | THE VALLEY/ Clayton J. Lloyd Intl. Airport                    | TQPF                         | RS                                   | V.C. Bird, Antigua                          | TAPA                         | Y   | N                        | N                   | T         | Y                       | P                                      |
| Antigua and Barbuda            | SAINT JOHNS/ V.C. Bird International Airport                  | TAPA                         | RS                                   | V.C. Bird, Antigua                          | TAPA                         | Y   | Y                        | Y                   | T         | Y                       | F                                      |
| Argentina                      | BUENOS AIRES/ Aeroparque J. Newbery                           | SABE                         | RS                                   | Buenos Aires/ Aeroparque J. Newbery         | SABE                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | COMODORO RIVADAVIA/ Gral E. Mosconi                           | SAVC                         | RS                                   | Comodoro Rivadavia/ Gral. E. Mosconi        | SAVC                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | CORDOBA/ Ing. Aer. A. L. V. Taravella                         | SACO                         | RS                                   | Cordoba/ Ing. Aer. A.L.V. Taravella         | SACO                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | EZEIZA/ Ministro Pistarini                                    | SAEZ                         | RS                                   | Ezeiza/ Ministro Pistarini                  | SAEZ                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | CATARATAS DEL IGUAZÚ / My. D.C.E. Krause                      | SARI                         | RNS&AS                               | Resistencia                                 | SARE                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | JUJUY/ Gobernador Guzman                                      | SASJ                         | RS                                   | Cordoba/ Ing. Aer. A.L.V. Taravella         | SACO                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | MAR DEL PLATA/Astor Piazzolla                                 | SAZM                         | RG&AS                                | Buenos Aires/ Aeroparque J. Newbery         | SABE                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | MENDOZA/ El Plumerillo  | SAME                         | RS                                   | Mendoza/ El Plumerillo                      | SAME                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | NEUQUÉN/ Presidente Perón                                     | SAZN                         | RNS&AS                               | Buenos Aires/ Aeroparque J. Newbery         | SABE                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | RESISTENCIA   | SARE                         | RNS&AS                               | Resistencia                                 | SARE                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | RÍO GALLEGOS/ Piloto Civil N. Fernández                       | SAWG                         | RS                                   | Comodoro Rivadavia/ Gral. E. Mosconi        | SAVC                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | ROSARIO/ Islas Malvinas                                       | SAAR                         | RS                                   | Buenos Aires/ Aeroparque J. Newbery         | SABE                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | SALTA/ General D. Martín Miguel De Güemes                     | SASA                         | RS                                   | Cordoba/ Ing. Aer. A.L.V. Taravella         | SACO                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | SAN CARLOS DE BARILOCHE                                       | SAZS                         | RNS&AS                               | Buenos Aires/ Aeroparque J. Newbery         | SABE                         | Y   | N                        | N                   | T         | Y                       | F                                      |
| SAN FERNANDO                   | SADF  | RG                           | Buenos Aires/ Aeroparque J. Newbery  | SABE  | Y                            | N   | N                        | T                   | Y         | F                       |  |
| USHUAIA/ Malvinas Argentinas   | SAWH  | RNS&AS                       | Comodoro Rivadavia/ Gral. E. Mosconi | SAVC  | Y                            | N   | N                        | T                   | Y         | F                       |  |
| Aruba (Kingdom of Netherlands) | ORANJESTAD/ Reina Beatrix International Airport               | TNCA                         | RS                                   | Curacao/ Aeropuerto Hato                    | TNCC                         | Y   | N                        | N                   | T         | Y                       | F                                      |
| Bahamas                        | ALICE TOWN/ Bimini International Airport.                     | MYBS                         | RS                                   | Nassau/ Lynden Pindling Intl.               | MYNN                         | N   | N                        | N                   |           |                         | N                                      |
|                                | COCKBURN TOWN/San Salvador International Airport.             | MYSM                         | RS                                   | Nassau/ Lynden Pindling Intl.               | MYNN                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | FREEPORT/ Grand Bahama International Airport.                 | MYGF                         | RS                                   | Freeport/ Grand Bahama Intl.                | MYGF                         | Y   | N                        | N                   | T         | Y                       | F                                      |
|                                | GOVERNOR'S HARBOUR/ Governor's Harbour International Airport. | MYEM                         | RS                                   | Nassau/ Lynden Pindling Intl.               | MYNN                         | N   | N                        | N                   |           |                         | N                                      |

| State                    | Aerodrome where meteorological service is to be provided |                         |        | Responsible aerodrome meteorological office               |                         | Observations and forecasts to be provided |                     |                |     |                   | METAR/SPECI and TAF availability |
|--------------------------|--|-------------------------|--------|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|                          | Name   | ICAO Location Indicator | Use    | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1                        | 2  | 3                       | 4      | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
|                          | MARSH HARBOUR/ Marsh Harbour International Airport.      | MYAM                    | RS     | Nassau/ Lynden Pindling Intl.                             | MYNN                    | Y   | N                   | N              | T   | Y                 | P                                |
|                          | NASSAU/ Lynden Pindling International Airport.           | MYNN                    | RS     | Nassau/ Lynden Pindling Intl.                             | MYNN                    | Y   | N                   | N              |     |                   | F                                |
|                          | NORTH ELEUTHERA/ North Eleuthera International Airport.  | MYEH                    | RS     | Nassau/ Lynden Pindling Intl.                             | MYNN                    | N   | N                   | N              | T   | Y                 | N                                |
|                          | STELLA MARIS/ Stella Maris International Airport.        | MYLS                    | RS     | Nassau/ Lynden Pindling Intl.                             | MYNN                    | N   | N                   | N              |     |                   | N                                |
|                          | TREASURE CAY/ Treasure Cay International Airport.        | MYAT                    | RS     | Nassau/ Lynden Pindling Intl.                             | MYNN                    | N   | N                   | N              |     |                   | N                                |
|                          | WEST END/ West End International Airport.                | MYGW                    | RNS&AS | West End Intl.  | MYGW                    | N   | N                   | N              |     |                   | N                                |
| Barbados                 | BRIDGETOWN/ Grantley Adams Intl.                         | TBPB                    | RS     | Bridgetown/ Grantley Adams Intl.                          | TBPB                    | Y   | N                   | Y              | T   | Y                 | F                                |
| Belize                   | BELIZE/ Philip S.W. Goldson Intl                         | MZBZ                    | RS     | Belize/ Philip S.W. Goldson Intl.                         | MZBZ                    | Y   | N                   | N              | T   | Y                 | F                                |
| Bermuda (United Kingdom) | BERMUDA/ L. F. Wade Intl                                 | TXKF                    | RS     | L. F. Wade Intl   | TXKF                    | Y   |                     | N              | T   | Y                 | F                                |
| Bolivia                  | COCHABAMBA/ Aeropuerto Internacional Jorge Wilstermann   | SLCB                    | AS     | Cochabamba/Aeropuerto Internacional Jorge Wilstermann     | SLCB                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | LA PAZ/ Aeropuerto Internacional El Alto                 | SLLP                    | RS     | La Paz/ Aeropuerto Internacional El Alto                  | SLLP                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | SANTA CRUZ/ Aeropuerto Internacional Viru Viru           | SLVR                    | RS     | Santa Cruz/ Aeropuerto Internacional Viru Viru            | SLVR                    | Y   | N                   | Y              | T   | Y                 | F                                |
| Brazil                   | BELEM/ Val de Cans/Julio Cezar Ribeiro, PA               | SBBE                    | RS     | BELEM/ Val de Cans/Julio Cezar Ribeiro, P                 | SBBE                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | BELO HORIZONTE/Tancredo Neves, MG                        | SBCF                    | RS     | BRASILIA/Pres. Juscelino Kubitschek, DF                   | SBBR                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | BOA VISTA/Atlas Brasil Cantanhede, RR                    | SBBV                    | RS     | MANAUS/Eduardo Gomes, AM                                  | SBEG                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | BRASILIA/Pres. Juscelino Kubitschek, DF                  | SBBR                    | RS     | BRASILIA/Pres. Juscelino Kubitschek, DF                   | SBBR                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | CABO FRIO/Cabo Frio, RJ                                  | SBCB                    | RS     | Rio De Janeiro/ Galeao-Antonio Carlos Jobim, Rj           | SBGL                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | CAMPINAS/ Viracopos, SP                                  | SBKP                    | RS     | Sao Paulo/ Guarulhos, Governador Andre Franco Montoro, Sp | SBGR                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | CAMPO GRANDE/ Campo Grande, MS                           | SBCG                    | RS     | Porto Alegre/ Salgado Filho, Rs                           | SBPA                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | CORUMBA/ Corumba, MS                                     | SBCR                    | RS     | Porto Alegre/ Salgado Filho, Rs                           | SBPA                    | Y   | N                   | Y              | T   | Y                 | P                                |
|                          | CRUZEIRO DO SUL/ Cruzeiro Do Sul, AC                     | SBCZ                    | RS     | MANAUS/Eduardo Gomes, AM                                  | SBEG                    | Y   | N                   | Y              | T   | Y                 | P                                |
|                          | CUIABA/ Marechal Rondon, MT                              | SBCY                    | RS     | MANAUS/Eduardo Gomes, AM                                  | SBEG                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | CURITIBA/Afonso Pena, PR                                 | SBCT                    | RS     | Porto Alegre/ Salgado Filho, Rs                           | SBPA                    | Y   | N                   | Y              | T   | Y                 | F                                |

| State                           | Aerodrome where meteorological service is to be provided |                         |     | Responsible aerodrome meteorological office               |                         | Observations and forecasts to be provided |                     |                |     |                   | METAR/SPECI and TAF availability |
|---------------------------------|--|-------------------------|-----|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|                                 | Name   | ICAO Location Indicator | Use | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1                               | 2  | 3                       | 4   | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
|                                 | FLORIANOPOLIS/ Hercilio Luz, SC                          | SBFL                    | RS  | PORTO ALEGRE/ Salgado Filho, RSs                          | SBPA                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | FORTALEZA/ Pinto Martins, CE                             | SBFZ                    | RS  | RECIFE/ Guararapes - Gilberto Freyre, PE                  | SBRF                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | FOZ DO IGUAÇU/ Cataratas, PR                             | SBFI                    | RS  | Porto Alegre/Salgado Filho, Rs                            | SBPA                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | MACAPÁ/Alberto Alcolumbre, AP                            | SBMQ                    | RS  | BELEM/ Val de Cans/Julio Cezar Ribeiro, PA                | SBBE                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | MACEIO/ Zumbi dos Palmares, AL                           | SBMO                    | RS  | RECIFE/ Guararapes - Gilberto Freyre, PE                  | SBRF                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | MANAUS/Eduardo Gomes, AM                                 | SBEG                    | RS  | MANAUS/Eduardo Gomes, AM                                  | SBEG                    |   |                     |                |     |                   |                                  |
|                                 | PONTA PORÁ/Ponta Porá, MS                                | SBPP                    | RNS | Porto Alegre/ Salgado Filho, Rs                           | SBPA                    | Y   | N                   | Y              | T   | Y                 | P                                |
|                                 | PETROLINA/Senador Nilo Coelho, Pe                        | SBPL                    | RS  | RECIFE/ Guararapes - Gilberto Freyre, PE                  | SBRF                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | PORTO ALEGRE/ Salgado Filho, RSs                         | SBPA                    | RS  | Porto Alegre/ Salgado Filho, Rs                           | SBPA                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | RECIFE/ Guararapes - Gilberto Freyre, PE                 | SBRF                    | RS  | RECIFE/ Guararapes - Gilberto Freyre, PE                  | SBRF                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | RIO DE JANEIRO/Galeão-Antônio Carlos Jobim, RJ           | SBGL                    | RS  | Rio De Janeiro/ Galeao-Antonio Carlos Jobim, Rj           | SBGL                    | Y   | N                   | Y              | X   | Y                 | F                                |
|                                 | SALVADOR/Deputado Luis Eduardo Magalhães, BA             | SBSV                    | RS  | RECIFE/ Guararapes - Gilberto Freyre, PE                  | SBRF                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | SANTAREM/ Maestro Wilson Fonseca, PA                     | SBSN                    | AS  | BELEM/ Val de Cans/Julio Cezar Ribeiro, PA                | SBBE                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | SÃO LUÍS/Marechal Cunha Machado, MA                      | SBSL                    | AS  | BELEM/ Val de Cans/Julio Cezar Ribeiro, PA                | SBBE                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | SÃO GONÇALO DO AMARANTE/São Gonçalo do Amarante, RN      | SBSG                    | RS  | RECIFE/ Guararapes - Gilberto Freyre, PE                  | SBRF                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                 | SAO PAULO/Guarulhos-Governador Andre Franco Montoro, SP  | SBGR                    | RS  | Sao Paulo/ Guarulhos, Governador Andre Franco Montoro, Sp | SBGR                    | Y   | N                   | Y              | X   | Y                 | F                                |
|                                 | TABATINGA/ Tabatinga, Am                                 | SBTT                    | RS  | MANAUS/Eduardo Gomes, AM                                  | SBEG                    | Y   | N                   | Y              | T   | Y                 | P                                |
|                                 | URUGUAINA/Rubem Berta, RS                                | SBUG                    | RS  | Porto Alegre/ Salgado Filho, Rs                           | SBPA                    |   |                     |                |     |                   |                                  |
|                                 |  |                         |     |   |                         |   |                     |                |     |                   |                                  |
|                                 |  |                         |     |   |                         |   |                     |                |     |                   |                                  |
| Cayman Islands (United Kingdom) | CAYMAN BRAC/Gerrard Smith Intl.                          | MWCB                    | RS  | Georgetown/Owen Roberts Intl. .                           | MWCR                    | Y   | N                   | N              | T   | Y                 | F                                |
|                                 | GEORGETOWN/Owen Roberts Intl.                            | MWCR                    | RS  | Georgetown/Owen Roberts Intl                              | MWCR                    | Y   | N                   | N              | T   | Y                 | P                                |
| Chile                           | ANTOFAGASTA/Ap Cerro Moreno                              | SCFA                    | AS  | Antofagasta/ Ap Cerro Moreno                              | SCFA                    | Y   | N                   | Y              | T   | Y                 | P                                |

| State                     | Aerodrome where meteorological service is to be provided |                         |        | Responsible aerodrome meteorological office   |                         | Observations and forecasts to be provided |                     |                |     |                   | METAR/SPECI and TAF availability |
|---------------------------|--|-------------------------|--------|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|                           | Name   | ICAO Location Indicator | Use    | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1                         | 2  | 3                       | 4      | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
|                           | ARICA/ Ap Chacalluta                                     | SCAR                    | RS     | Arica/ Ap Chacalluta                          | SCAR                    | Y   | N                   | N              | T   | Y                 | P                                |
|                           | CONCEPCION/ Ad Altn Carriel Sur                          | SCIE                    | RS     | Concepcion/ Ad Altn Carriel Sur               | SCIE                    | Y   | N                   | N              | T   | Y                 | P                                |
|                           | IQUIQUE/ Ap Diego Arracena                               | SCDA                    | RS     | Iquique/ Ap Diego Arracena                    | SCDA                    | Y   | N                   | N              | T   | Y                 | P                                |
|                           | PUERTO MONTT/Ap El Tepual                                | SCTE                    | RS     | Puerto Montt/Ap El Tepual                     | SCTE                    | Y   | N                   | N              | T   | Y                 | F                                |
|                           | PUNTA ARENAS/Ap Pdte. Carlos Ibanez Del Campo            | SCCI                    | AS     | Punta Arenas/Ap Pdte. Carlos Ibanez Del Campo | SCCI                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                           | SANTIAGO/Ap Arturo Merino Benitez                        | SCEL                    | RS     | Santiago/Ap Arturo Merino Benitez             | SCEL                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                           | ISLA DE PASCUA/Ap Mataverí                               | SCIP                    | RS     | Isla De Pascua/Ap Mataverí                    | SCIP                    | y   | N                   | Y              | T   | Y                 | F                                |
| Colombia                  | BARRANQUILLA/Ernesto Cortissoz/Atlantico                 | SKBQ                    | RS     | Barranquilla/ Ernesto Cortissoz/ Atlantico    | SKBQ                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                           | BOGOTA/Eldorado/Distrito Capital                         | SKBO                    | RS     | Bogotá/Eldorado/ Distrito Capital             | SKBO                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                           | BUCARAMANGA/Palonegro                                    | SKBG                    | RS     |   |                         |   |                     |                |     |                   |                                  |
|                           | CALI/Alfonso Bonilla Aragón/Valle                        | SKCL                    | RS     | Cali/ Alfonso Bonilla Aragón/ Valle           | SKCL                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                           | CARTAGENA/Rafael Nuñez/Bolivar                           | SKCG                    | RS     | Cartagena/Rafael Nuñez/Bolivar                | SKCG                    | Y   | N                   | N              | T   | Y                 | F                                |
|                           | CUCUTA/Camillo Daza/Norte De Santander                   | SKCC                    | RNS&AS | Cucuta/Camilon Daza/Norte De Santander        | SKCC                    | Y   | N                   | N              | T   | Y                 | P                                |
|                           | LETICIA/Alfredo Vásquez Cobo/Amazonas                    | SKLT                    | RNS&AS | Bogotá/Eldorado/Distrito Capital              | SKBO                    | Y   | N                   | Y              | T   | Y                 | P                                |
|                           | PEREIRA/Matecaña   | SKPE                    | RS     |   |                         |   |                     |                |     |                   |                                  |
|                           | RIONEGRO/ José María Córdoba/Antioquia                   | SKRG                    | RS     | Rionegro/ José María Córdoba/Antioquia        | SKRG                    | Y   | N                   | N              | T   | Y                 | F                                |
|                           | SAN ANDRES/ Gustavo Rojas Pinilla/San Andres             | SKSP                    | RS     | San Andres/ Gustavo Rojas Pinilla/San Andres  | SKSP                    | Y   | N                   | N              | T   | Y                 | P                                |
| SANTA MARTA/Simón Bolívar | SKSM   | RS                      |        |   |                         |   |                     |                |     |                   |                                  |
| Costa Rica                | ALAJUELA/ Juan Santamaria Intl.                          | MROC                    | RS     | Alajuela/ Juan Santamaria Intl.               | MROC                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                           | LIBERIA/ Daniel Oduber Quiros                            | MRLB                    | RNS&AS | Alajuela/ Juan Santamaria Intl.               | MROC                    | Y   | N                   | N              | T   | Y                 | P                                |
|                           | LIMÓN/ Limon Intl.                                       | MRLM                    | RG     | Alajuela/ Juan Santamaria Intl.               | MROC                    | Y   | N                   | N              | T   | Y                 | P                                |
|                           | PAVAS/ Tobias Bolanos Intl                               | MRPV                    | RG     | Alajuela/ Juan Santamaria Intl                | MROC                    | Y   | N                   | N              | T   | Y                 | P                                |
| Cuba                      | CAMAGUEY/Ignacio Agramonte Intl                          | MUCM                    | RS     | Habana/ Jose Marti Intl                       | MUHA                    | Y   | N                   | N              | T   | N                 | F                                |

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|----------------------------------|--|-------------------------|--------|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|                                  | Name   | ICAO Location Indicator | Use    | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1                                | 2  | 3                       | 4      | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
|                                  | CAYO COCO/Jardines Del Rey Intl                          | MUCC                    | RS     | Habana/ Jose Marti Intl                     | MUHA                    | Y   | N                   | N              | T   | N                 | P                                |
|                                  | CAYO LARGO DEL SUR/Vilo Acuna Intl                       | MUCL                    | RS     | Habana/ Jose Marti Intl                     | MUHA                    | Y   | N                   | N              | T   | N                 | F                                |
|                                  | CIENFUEGOS/Jaime González                                | MUCF                    | RS     |   |                         |   |                     |                |     |                   |                                  |
|                                  | HABANA/Jose Marti  | MUHA                    | RS     | Habana/ Jose Marti Intl                     | MUHA                    | Y   | N                   | N              | T   | N                 | F                                |
|                                  | HOLGUIN/Frank Pais Intl                                  | MUHG                    | RS     | Habana/ Jose Marti Intl                     | MUHA                    | Y   | N                   | N              | T   | N                 | F                                |
|                                  | SANTIAGO DE CUBA/Antonio Maceo                           | MUCU                    | RS     | Habana/ Jose Marti Intl                     | MUHA                    | Y   | N                   | N              | T   | N                 | F                                |
|                                  | MANZANILLO/Sierra Maestra                                | MUMZ                    | RS     |   |                         |   |                     |                |     |                   |                                  |
|                                  | SANTA CLARA/Abel Santamaría                              | MUSC                    | RS     |   |                         |   |                     |                |     |                   |                                  |
|                                  | VARADERO/Juan Gualberto Gomez                            | MUVR                    | RS     | Habana/ Jose Marti Intl                     | MUHA                    | Y   | N                   | N              | T   | N                 | F                                |
| Curacao (Kingdom of Netherlands) | WILLEMSTAD/ Hato, Curaçao I.                             | TNCC                    | RS     | Willemstad/ Curacao Intl                    | TNCC                    | Y   | N                   | N              | T   | Y                 | F                                |
| Dominica                         | MARIGOT/ Melville Hall Intl.                             | TDPD                    | RS     | Bridgetown/ Grantley Adams, Barbados Intl.  | TBPB                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                  | ROSEAU/Canefield Intl.                                   | TDPR                    | RS     | Bridgetown/ Grantley Adams, Barbados Intl.  | TBPB                    | N   | N                   | N              | N   | N                 | N                                |
| Dominican Republic               | BARAHONA/Arpto. Internacional Maria Montes               | MDBH                    | RS     | Santo Domingo/ Jose Francisco Peña Gomez    | MDSD                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                  | LA ROMANA/ Casa de Campo Intl. Intl                      | MDLR                    | RS     | Santo Domingo/ Jose Francisco Peña Gomez    | MDSD                    | Y   | N                   | N              | T   | Y                 | F                                |
|                                  | PUERTO PLATA/Gregorio Luperon Intl                       | MDPP                    | RS     | Santo Domingo/ Jose Francisco Peña Gomez    | MDSD                    | Y   | N                   | N              | T   | Y                 | F                                |
|                                  | PUNTA CANA/Punta Cana Intl                               | MDPC                    | RS     | Santo Domingo/ Jose Francisco Peña Gomez    | MDSD                    | Y   | N                   | N              | T   | Y                 | F                                |
|                                  | SANTIAGO/Cibao Intl                                      | MDST                    | RS     | Santo Domingo/ Jose Francisco Peña Gomez    | MDSD                    | Y   | N                   | N              | T   | Y                 | F                                |
|                                  | SANTO DOMINGO/ Jose Francisco Peña Gomez Intl            | MDSD                    | RS     | Santo Domingo/ Jose Francisco Peña Gomez    | MDSD                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                  | SAMANA/EI Catey Intl                                     | MDCY                    | RS     |   |                         | N   | N                   | N              | N   | N                 | N                                |
|                                  | HIGUERO/Dr. Joaquin Balaguer Intl                        | MDJB                    | RS     |   |                         | N   | N                   | N              | N   | N                 | N                                |
| Ecuador                          | GUAYAQUIL/ Jose Joaquin Olmedo                           | SEGU                    | RS     | Guayaquil/ Jose Joaquin Olmedo              | SEGU                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                                  | LATACUNGA/Cotopaxi                                       | SELT                    | RNS&AS | Quito/ Mariscal Sucre                       | SEQM                    | Y   | N                   | N              | T   | Y                 | F                                |
|                                  | MANTA/Eloy Alfaro  | SEMT                    | RS     | Quito/Mariscal Sucre                        | SEQM                    | Y   | N                   | N              | T   | Y                 | F                                |
|                                  | QUITO/Mariscal Sucre                                     | SEQM                    | RS     | Quito/Mariscal Sucre                        | SEQM                    | Y   | N                   | Y              | T   | Y                 | F                                |

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|--------------------------|---|-------------------------|-------|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|                          | Name  | ICAO Location Indicator | Use   | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1                        | 2   | 3                       | 4     | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
| El Salvador              | SAN SALVADOR/ Ilopango Intl   | MSSS                    | RG    | San Salvador/ El Salvador Intl              | MSLP                    | Y   | N                   | N              | T   | Y                 | P                                |
|                          | SAN SALVADOR/ Aeropuerto Intl. Monseñor Oscar Arnulfo Romero y Galdames | MSLP                    | RS    | San Salvador/El Salvador Intl               | MSLP                    | Y   | N                   | N              | T   | Y                 | F                                |
| French Antilles (France) | FORT-DE-FRANCE/ Le Lamentin, Martinique                                 | TFFF                    | RS    | Martinique/ Aime Cesaire                    | TFFF                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | POINTE-À-PITRE/Le Raizet, Guadeloupe                                    | TFFR                    | RS    | Pointe-A-Pitre, Le Raizet                   | TFFR                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | SAINT BARTHELEMY/ Saint Barthelemy, Guadeloupe                          | TFFJ                    | RS    | Pointe-A-Pitre, Le Raizet                   | TFFR                    | Y   | N                   | N              | N   | N                 | N                                |
|                          | SAINT MARTIN/ Grand Case, Guadeloupe                                    | TFFG                    | RS    | Pointe-A-Pitre, Le Raizet                   | TFFR                    | Y   | N                   | N              | N   | N                 | N                                |
| French Guiana (France)   | CAYENNE/Rochambeau  | SOCA                    | RS    | Cayenne/ Felix Eboue                        | SOCA                    | Y   | N                   | Y              | T   | Y                 | F                                |
| Grenada                  | LAURISTON, Carriacou I  | TGPZ                    | RS    | Saint Georges/ Maurice Bishop Intl          | TGPY                    | N   | N                   | N              | N   | N                 | N                                |
|                          | SAINT GEORGES/Maurice Bishop Intl.                                      | TGPY                    | RS    | Saint Georges/ Maurice Bishop Intl          | TGPY                    | Y   | N                   | Y              | T   | Y                 | F                                |
| Guatemala                | GUATEMALA/La Aurora   | MGGT                    | RS    | Guatemala/ La Aurora                        | MGGT                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | PUERTO BARRIOS/Puerto Barrios   | MGPB                    | RG&AS | Guatemala / La Aurora                       | MGGT                    | Y   | N                   | F              | T   | Y                 | F                                |
|                          | SAN JOSE/ Puerto de San Jose  | MGSJ                    | RG&AS | Guatemala/ La Aurora                        | MGGT                    | Y   | N                   | F              | T   | Y                 | F                                |
|                          | SANTA HELENA/Mundo Maya Intl.   | MGMM                    | RG&AS | Guatemala/ La Aurora                        | MGGT                    | N   | N                   | N              | N   | N                 | N                                |
| Guyana                   | GEORGETOWN/ Cheddi Jagan Intl Airport                                   | SYCJ                    | RS    | Georgetown/ Cheddi Jagan Intl Airport       | SYCJ                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                          | GEORGETOWN/Eugene F. Correia International Airport                      | SYEC                    | RS    | Georgetown/ Cheddi Jagan Intl Airport       | SYCJ                    | Y   | N                   | Y              | T   | Y                 | P                                |
| Haiti                    | CAP HAITEN/Cap Haiten Intl  | MTCH                    | RS    | Port-Au-Prince/Poirt-Au-Prince Intl.        | MTPP                    | N   | N                   | N              | N   | N                 | N                                |
|                          | PORT-AU-PRINCE/Poirt-Au-Prince Intl.                                    | MTPP                    | RS    | Port-Au-Prince/Poirt-Au-Prince Intl.        | MTPP                    | Y   | N                   | Y              | T   | Y                 | F                                |
| Honduras                 | LA CEIBA/Goloson Intl   | MHLC                    | RS    | Tegucigalpa/ Toncontin Intl                 | MHTG                    | Y   | N                   | N              | T   | Y                 | P                                |
|                          | ROATAN/ Juan Manuel Galvez Intl   | MHRO                    | RS    | Tegucigalpa/ Toncontin Intl                 | MHTG                    | Y   | N                   | N              | T   | Y                 | F                                |
|                          | SAN PEDRO SULA/ Ramón Villeda Morales Intl                              | MHLM                    | RS    | Tegucigalpa/ Toncontin Intl                 | MHTG                    | Y   | N                   | N              | T   | Y                 | F                                |
|                          | TEGUCIGALPA/ Toncontin Intl   | MHTG                    | RS    | Tegucigalpa/Toncontin Intl                  | MHTG                    | Y   | N                   | Y              | T   | Y                 | F                                |
| Jamaica                  | KINGSTON/ Norman Manley Intl  | MKJP                    | RS    | Kingston/ Norman Manley Intl                | MKJP                    | Y   | N                   | N              | T   | Y                 | F                                |
|                          | MONTEGO BAY/ Sangster Intl  | MKJS                    | RS    | Kingston/ Norman Manley Intl                | MKJP                    | Y   | N                   | N              | T   | Y                 | F                                |
|                          | OCHO RIOS/ Ian Fleming Intl   | MKBS                    | RG    |   |                         | N   | N                   | N              | N   | N                 | N                                |

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|--|--|-------------------------|--------|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|  | Name   | ICAO Location Indicator | Use    | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1  | 2  | 3                       | 4      | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
| Mexico                                       | ACAPULCO/ Gral. Juan N. Alvarez Intl   | MMAA                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | F                                |
|  | AGUASCALIENTES/ Aeropuerto Jesús Terán   | MMAS                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | BAHIAS DE HUATULCO/ Bahias De Huatulco   | MMBT                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | CABO SAN LUCAS/Cabo San Lucas  | MMSL                    | RNS    | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | CAMPECHE/ Ing. Alberto Acuña Ongay   | MMCP                    | RG     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | CANCUN/ Cancun Intl  | MMUN                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | F                                |
|  | CIUDAD JUÁREZ/Abraham González Intl.   | MMCS                    | RG &AS | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | CHETUMAL/ Chetumal Intl  | MMCM                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | CHICHÉN-ITZA/Chichén-Itza  | MMCT                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | CIUDAD DEL CARMEN/Ciudad Del Carmen Intl                                       | MMCE                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | CIUDAD OBREGÓN/Ciudad Obregón  | MMCN                    | AS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | CIUDAD VICTORIA/ General Pedro José Mendez                                     | MMCV                    | AS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | CHIHUAHUA/ General De Division y Piloto Aviador Roberto Fierro Villalobos Intl | MMCU                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | COZUMEL/ Cozumel Intl  | MMCZ                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | F                                |
|  | CULIACAN/Culiacan  | MMCL                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | DURANGO/Durango  | MMDO                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | GUADALAJARA/Miguel Hidalgo Y Costilla  | MMGL                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | F                                |
|  | GUAYMAS/Gral. Jose Maria Yáñez Intl  | MMGM                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | HERMOSILLO/Aeropuerto Internacional General Ignacio Pesqueira García           | MMHO                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|  | IXTAPA-ZIHUATANEJO/Ixtapa-Zihuatanejo  | MMZH                    | RS     | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
| LA PAZ/ Gral. Manuel Márquez De León Intl    | MMLP   | RS                      | Mexico | MMMX  | Y                       | N   | N                   | T              | Y   | P                 |                                  |
| LEON/ Aeropuerto Internacional De Guanajuato | MMLO   | RS                      | Mexico | MMMX  | Y                       | N   | N                   | T              | Y   | P                 |                                  |
| LORETO/Loreto Intl                           | MMLT   | RS                      | Mexico | MMMX  | Y                       | N   | N                   | T              | Y   | P                 |                                  |

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|-------|--|-------------------------|-------|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|       | Name   | ICAO Location Indicator | Use   | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1     | 2  | 3                       | 4     | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
|       | LOS MOCHIS/Del Valle Del Fuerte                                  | MMLM                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | MANZANILLO/Playa De Oro Intl                                     | MMZO                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | MATAMOROS/Matamoros Intl.  | MMMA                    | RG&AS | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | MAZATLAN/ Gral. Rafael Buelna Intl                               | MMMZ                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | F                                |
|       | MERIDA/ Lic. Manuel Crescencio Rejón Intl                        | MMMD                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | F                                |
|       | MEXICALI/ Gral. Rodolfo Sánchez Taboada Intl                     | MMML                    | RG    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | MEXICO/ Aeropuerto Internacional Benito Juárez, Ciudad De México | MMM                     | RS    | Mexico                                      | MMM                     | Y   | N                   | Y              | T   | Y                 | F                                |
|       | MINATITLAN/ Minatitlan   | MMMT                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | MONCLOVA/ Venustiano Carranza                                    | MMMV                    | RS    |   | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | MONTERREY/Del Norte Intl.  | MMAN                    | RG&AS | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | MONTERREY/ Gral. Mariano Escobedo Intl                           | MMMY                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | F                                |
|       | MORELIA/Gral. Francisco J. Mujica Intl                           | MMMM                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | NUEVO LAREDO/ Aeropuerto Internacional Quetzalcóatl              | MMNL                    | RG    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | OAXACA/Xoxocotlán  | MMOX                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | PIEDRAS NEGRAS/Piedras Negras Intl                               | MMPG                    | RG    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | PUEBLA/Hermanos Serdán   | MMPB                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | PUERTO ESCONDIDO/Puerto Escondido                                | MMPS                    | AS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | PUERTO VALLARTA/Lic. Gustavo Diaz Ordaz Intl                     | MMPR                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | F                                |
|       | QUERETARO/Intercontinental De Querétaro                          | MMQT                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | Reynosa/Gral. Lucio Blanco Intl                                  | MMRX                    | RG    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | SALTILLO/Plan De Guadalupe                                       | MMIO                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | SAN LUIS POTOSÍ/Ponciano Arriaga                                 | MMSP                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | SAN JOSE DEL CABO/ Aeropuerto Intl Los Cabos                     | MMSD                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |
|       | TAMPICO/ Gral. Franciso Javier Mina Intl                         | MMTM                    | RS    | Mexico                                      | MMM                     | Y   | N                   | N              | T   | Y                 | P                                |

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|----------------------------|--|-------------------------|-------|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|                            | Name   | ICAO Location Indicator | Use   | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1                          | 2  | 3                       | 4     | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
|                            | TAPACHULA/ Tapachula Intl                                | MMTP                    | RS    | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|                            | TIJUANA/Gral. Abelardo L. Rodriguez Intl                 | MMTJ                    | RS    | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | F                                |
|                            | TOLUCA/Jose María Morelos y Pavón                        | MMTO                    | RNS   | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | F                                |
|                            | TORREÓN/Francisco Sarabia                                | MMTC                    | RS    | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|                            | TUXTLA GUTIERREZ/Angel Albino Corzo                      | MMTG                    | RS    | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|                            | VERACRUZ/Gral. Heriberto Jara Intl                       | MMVR                    | RS    | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | F                                |
|                            | VILLAHERMOSA/Capitán P.A. Carlos Rovirosa                | MMVA                    | RS    | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | P                                |
|                            | CIUDAD ACUÑA/Ciudad Acuña Intl.                          | MMMC                    | RG    |   |                         |   |                     |                |     |                   |                                  |
|                            | CUERNAVACA/General Mariano Matamoros                     | MMCB                    | RS    |   |                         |   |                     |                |     |                   |                                  |
|                            | NOGALES/Nogales Intl.                                    | MMNG                    | RG    |   |                         |   |                     |                |     |                   |                                  |
|                            | PALENQUE/Palenque  | MMPQ                    | RS    |   |                         |   |                     |                |     |                   |                                  |
|                            | PUERTO PEÑASCO/Aeropuerto del Mar de Cortes              | MMPE                    | RS    |   |                         |   |                     |                |     |                   |                                  |
|                            | SAN FELIPE/San Felipe Intl.                              | MMSF                    | RG    |   |                         |   |                     |                |     |                   |                                  |
|                            | TEPIC/Tepic Intl   | MMEP                    | RS    |   |                         |   |                     |                |     |                   |                                  |
|                            | URUAPAN/General Ignacio López Rayón                      | MMPN                    | RS    |   |                         |   |                     |                |     |                   |                                  |
|                            | ZACATECAS/Aeropuerto General Leobardo C. Ruiz Intl.      | MMZC                    | RS    | Mexico                                      | MMMX                    | Y   | N                   | N              | T   | Y                 | F                                |
| Monserrat (United Kingdom) | GERALD'S/John A. Osborne Intl                            | TRPG                    | RS    | V. C. Bird, Antigua                         | TRPG                    | Y   | N                   | N              | T   | Y                 | P                                |
| Netherlands                | KRALENDIJK/Flamingo, Bonaire I.                          | TNCB                    | RS    | De Bilt, The Netherlands                    | EHDB                    | Y   | N                   | N              | X   | Y                 | P                                |
|                            | ORANJESTAD/F. D. Roosevelt, Saint Eustatius I.           | TNCE                    | RS    | De Bilt, The Netherlands                    | EHDB                    | N   | N                   | N              | N   | N                 | N                                |
|                            | THE BOTTOM/Juancho E. Yrausquin, Saba                    | TNCS                    | RS    | De Bilt, The Netherlands                    | EHDB                    | N   | N                   | N              | N   | N                 | N                                |
| Nicaragua                  | MANAGUA/ Augusto Cesar Sandino Intl                      | MNMG                    | RS    | Managua/ Augusto Cesar Sandino Intl         | MNMG                    | Y   | N                   | Y              | T   | Y                 | F                                |
| Panamá                     | BOCAS DEL TORO/ Bocas Del Toro                           | MPBO                    | RG&AS | Panamá/ Tocumen Intl                        | MPTO                    | Y   | N                   | N              | T   | Y                 | P                                |
|                            | PANAMA/Panamá Pacifico                                   | MPPA                    | AS    | Panamá/ Tocumen Intl                        | MPTO                    | Y   | N                   | Y              | X   | Y                 | P                                |
|                            | DAVID/ Enrique Malek                                     | MPDA                    | RS    | Panamá/ Tocumen Intl                        | MPTO                    | Y   | N                   | N              | T   | Y                 | P                                |

| State                       | Aerodrome where meteorological service is to be provided                                |                         |        | Responsible aerodrome meteorological office           |                         | Observations and forecasts to be provided |                     |                |     |                   | METAR/SPECI and TAF availability |
|-----------------------------|---|-------------------------|--------|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|                             | Name  | ICAO Location Indicator | Use    | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1                           | 2   | 3                       | 4      | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
|                             | PANAMA/ Marcos A. Gelabert  | MPMG                    | RNS&AS | Panama/ Tocumen Intl                                  | MPTO                    | Y   | N                   | Y              | T   | Y                 | P                                |
|                             | PANAMA/Cap. Scarlett Martinez   | MPSM                    | AS     | Panama/ Tocumen Intl                                  | MPTO                    | Y   | N                   | Y              | X   | Y                 | P                                |
|                             | PANAMA/Tocumen Intl   | MPTO                    | RS     | Panama/Tocumen Intl                                   | MPTO                    | Y   | N                   | Y              | X   | Y                 | F                                |
| Paraguay                    | LUQUE/ Silvio Pettrossi Intl  | SGAS                    | RS     | Luque/ Silvio Pettrossi Intl                          | SGAS                    | Y   | N                   | N              | T   | Y                 | F                                |
|                             | MINGA GUAZÚ/ Guarani Intl   | SGES                    | RS     | Luque/ Silvio Pettrossi Intl                          | SGAS                    | Y   | N                   | N              | T   | Y                 | F                                |
| Peru                        | AREQUIPA/ Intl. Alfredo Rodriguez Ballon  | SPQU                    |        | Arequipa/ Intl. Alfredo Rodriguez Ballon              | SPQU                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                             | CHICLAYO/ Intl. Capitan Jose Abelardo Quinones Gonzales, Gran General Del Aire Del Peru | SPHI                    | AS     | Lima-Callao/ Intl. Jorge Chavez                       | SPJC                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                             | CUSCO/Intl. Teniente Fap Alejandro Velazco Astete                                       | SPZO                    | AS     | Cusco/Intl. Teniente Fap Alejandro Velazco Astete     | SPZO                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                             | IQUITOS/Intl. Coronel Fap Francisco Secada Vignetta                                     | SPQT                    | RS     | Iquitos/Intl. Coronel Fap Francisco Secada Vignetta   | SPQT                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                             | LIMA-CALLAO/Intl. Jorge Chavez  | SPJC                    | RS     | Lima-Callao/Intl. Jorge Chavez                        | SPJC                    | Y   | N                   | N              | T   | Y                 | F                                |
|                             | PISCO/Intl. Pisco   | SPSO                    | AS     | Lima-Callao/Intl. Jorge Chavez                        | SPJC                    | Y   | N                   | N              | T   | Y                 | F                                |
|                             | TACNA/Intl. Coronel Fap Carlos Ciriani Santa Rosa                                       | SPTN                    | RG     | Lima-Callao/Intl. Jorge Chavez                        | SPJC                    | Y   | N                   | N              | T   | Y                 | F                                |
|                             | TRUJILLO/Intl. Capitan Carlos Martinez De Pinillos                                      | SPRU                    | AS     | Lima-Callao/Intl. Jorge Chavez                        | SPJC                    | Y   | N                   | N              | T   | Y                 | F                                |
| Puerto Rico (United States) | AGUADILLA/Rafael Hernandez Intl.  | TJBQ                    | RS     | Washington (Nws National Met Center), Dc.             | KWBC                    | Y   | N                   | N              | T   | Y                 | P                                |
|                             | FAJARDO/Diego Jimenez Torres  | TJFA                    | RS     | Washington (Nws National Met Center), Dc.             | KWBC                    | N   | N                   | N              | N   | N                 | N                                |
|                             | PONCE/Ponce-Mercedita   | TJPS                    | AS     | Washington (Nws National Met Center), Dc.             | KWBC                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                             | SAN JUAN/Luis Munoz Marin Intl  | TJSJ                    | RS     | Washington (Nws National Met Center), Dc.             | KWBC                    | Y   | N                   | Y              | T   | Y                 | F                                |
|                             | VIEQUES/Antonio Rivera  | TJVQ                    | RS     | Washington (Nws National Met Center), Dc.             | KWBC                    | N   | N                   | N              | N   | N                 | N                                |
| Saint Kitts and Nevis       | BASSETERRE/Robert L. Bradshaw, Saint Kitts I.   | TKPK                    | RS     | Washington (Nws National Met Center), Dc.             | KWBC                    | Y   | N                   | N              | T   | Y                 | P                                |
|                             | CHARLESTOWN/Vance Winkworth Amory   | TKPN                    | RS     | Saint Johns/ V.C. Bird International Airport          | TAPA                    | Y   | N                   | N              | T   | Y                 | P                                |
| Saint Lucia                 | CASTRIES/George F. L. Charles   | TLPC                    | RS     | Vieux-Fort/Hewanorra Intl Vieux-Fort/Hewanorra Intl   | TLPL                    | Y   | N                   | N              | T   | Y                 | P                                |
|                             | VIEUX-FORT/Hewanorra Intl   | TLPL                    | RS     | Vieux-Fort/ Hewanorra Intl Vieux-Fort/ Hewanorra Intl | TLPL                    | Y   | N                   | N              | T   | Y                 | F                                |

| State                                     | Aerodrome where meteorological service is to be provided |                         |     | Responsible aerodrome meteorological office             |                         | Observations and forecasts to be provided |                     |                |     |                   | METAR/SPECI and TAF availability |
|---|--|-------------------------|-----|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|   | Name   | ICAO Location Indicator | Use | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1   | 2  | 3                       | 4   | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
| Sint Maarten (Kingdom of Netherlands)     | PHILIPSBURG/Princess Juliana, Sint Maarten I.            | TNCM                    | RS  | San Juan Weather Forecast Office                        | TSJS                    | Y   | N                   | N              | T   | N                 | F                                |
| Saint Vincent and the Grenadines          | CANOUAN/ Canouan   | TVSC                    | RS  |   |                         | N   | N                   | N              | N   | N                 | N                                |
|   | KINGSTOWN/ E.T. Joshua                                   | TVSV                    | RS  | Bridgetown/ Grantley Adams, Barbados Intl.              | TBPB                    | Y   | N                   | N              | T   | Y                 | P                                |
|   | BEQUIA/J.F. Mitchell                                     | TVSB                    | RS  |   |                         | N   | N                   | N              | N   | N                 | N                                |
|   | MUSTIQUE/ Mustique                                       | TVSM                    | RNS |   |                         | N   | N                   | N              | N   | N                 | N                                |
|   | UNION ISLAND/ Union Island                               | TVSU                    | RS  |   |                         | N   | N                   | N              | N   | N                 | N                                |
| Suriname                                  | ZANDERY/ Johan Adolf Pengel Intl                         | SMJP                    | RS  | Zandery/ Johan Adolf Pengel Intl                        | SMJP                    | Y   | N                   | N              | T   | Y                 | F                                |
|   |  |                         |     |   |                         |   |                     |                |     |                   |                                  |
| Trinidad and Tobago                       | SCARBOROUGH/ Crown Point, Tobago I.                      | TTCP                    | RS  | Port Of Spain/Piarco Intl., Trinidad I.                 | TTPP                    | Y   | N                   | N              | T   | Y                 | F                                |
|   | PORT OF SPAIN/Piarco Intl., Trinidad I.                  | TTPP                    | RS  | Port Of Spain/Piarco Intl., Trinidad I.                 | TTPP                    | Y   | N                   | N              | T   | Y                 | F                                |
| Turks and Caicos Islands (United Kingdom) | GRAND TURK/Grand Turk Intl                               | MBGT                    | RS  | Lynden Pindling International                           | MYNN                    | Y   | N                   | N              | T   | Y                 | P                                |
|   | PROVIDENCIALES/ Providenciales Intl                      | MBPV                    | RS  | Lynden Pindling International                           | MYNN                    | Y   | N                   | N              | T   | Y                 | P                                |
|   | SOUTH CAICOS/South Caicos Intl                           | MBSC                    | RS  | Lynden Pindling International                           | MYNN                    | Y   | N                   | N              | T   | Y                 | P                                |
| Uruguay                                   | MALDONADO/ Intl C/C Carlos A. Curbelo "Laguna Del Sauce" | SULS                    | RS  | Montevideo/Intl De Carrasco "Gral. Cesareo L. Berisso"  | SUMU                    | Y   | N                   | N              | T   | Y                 | F                                |
|   | MONTEVIDEO/ Intl De Carrasco "Gral. Cesareo L. Berisso"  | SUMU                    | RS  | Montevideo/ Intl De Carrasco "Gral. Cesareo L. Berisso" | SUMU                    | Y   | N                   | Y              | T   | Y                 | F                                |
| Venezuela                                 | BARCELONA/ Gral. José Antonio Anzoategui Intl            | SVBC                    | RNS | Caracas/ Simon Bolivar Intl Maiquetia,                  | SVMI                    | Y   | N                   | N              | T   | Y                 | F                                |
|   | MAIQUETÍA/Simón Bolívar Intl                             | SVMI                    | RS  | Caracas/ Simon Bolivar Intl Maiquetia,                  | SVMI                    | Y   | N                   | Y              | T   | Y                 | F                                |
|   | MARACAIBO/ La Chinita Intl                               | SVMC                    | RS  | Caracas/ Simon Bolivar Intl Maiquetia,                  | SVMI                    | Y   | N                   | N              | T   | Y                 | F                                |
|   | MARGARITA/ Intl Del Caribe Gral. Santiago Marino         | SVMG                    | RS  | Caracas/ Simon Bolivar Intl Maiquetia,                  | SVMI                    | Y   | N                   | N              | T   | Y                 | F                                |
|   | PARAGUANA/ Josefa Camejo Intl                            | SVJC                    | RS  | Caracas/ Simon Bolivar Intl Maiquetia,                  | SVMI                    | Y   | N                   | N              | T   | Y                 | P                                |
|   | SAN ANTONIO DEL TACHIRA/Gral. Juan Vicente Gómez Intl    | SVSA                    | RG  | Caracas/ Simon Bolivar Intl Maiquetia,                  | SVMI                    | Y   | N                   | N              | T   | Y                 | P                                |
|   | BARQUISIMETO/Gral. Jacinto Lara Intl                     | SVBM                    | RS  | Caracas/ Simon Bolivar Intl Maiquetia,                  | SVMI                    | Y   | N                   | N              | T   | Y                 | F                                |
|   | PUERTO ORDAZ/Gral. Manuel Carlos Piar Intl               | SVPR                    | RS  | Caracas/ Simon Bolivar Intl Maiquetia,                  | SVMI                    |   |                     |                |     |                   |                                  |

| State                           | Aerodrome where meteorological service is to be provided |                         |     | Responsible aerodrome meteorological office |                         | Observations and forecasts to be provided |                     |                |     |                   | METAR/SPECI and TAF availability |
|---------------------------------|--|-------------------------|-----|---|-------------------------|---|---------------------|----------------|-----|-------------------|----------------------------------|
|                                 | Name   | ICAO Location Indicator | Use | Name  | ICAO Location Indicator | METAR/SPECI                               | State of the runway | Trend forecast | TAF | Temperature Tx/Tn |                                  |
| 1                               | 2  | 3                       | 4   | 5   | 6                       | 7   | 8                   | 9              | 10  | 11                | 12                               |
|                                 | SANTO DOMINGO DEL TACHIRA/May. Buenaventura Vivas Intl.  | SVSO                    | RG  | Caracas/ Simon Bolivar Intl Maiquetia,      | SVMI                    | Y   | N                   | N              | T   | Y                 | F                                |
|                                 | CARACAS/Oscar Machado Zuloaga Intl.                      | SVCS                    | RG  | Caracas/ Simon Bolivar Intl Maiquetia,      | SVMI                    |   |                     |                |     |                   |                                  |
|                                 | VALENCIA/ Arturo Michelena Intl                          | SVVA                    | RS  | Valencia, Carabobo                          | SVVA                    | Y   | N                   | N              | T   | Y                 | P                                |
| Virgin Islands (United Kingdom) | ROADTOWN/Beef Island                                     | TUPJ                    | RS  | V. C. Bird, Antigua                         | TJSJ                    | Y   | N                   | N              | T   | Y                 | P                                |
|                                 | VIRGIN GORDA I./ Virgin Gorda                            | TUPW                    | RS  | V. C. Bird, Antigua                         | TJSJ                    | N   | N                   | N              | N   | Y                 | N                                |
| Virgin Islands (United States)  | SAINT THOMAS/ Cyril E. King                              | TIST                    | RS  | Washington (Nws National Met Center), Dc.   | KWBC                    | Y   | N                   | N              | T   | Y                 | F                                |
|                                 | CHRISTIANSTED/ Henry E. Rohlsen, St. Croix               | TISX                    | RS  | Washington (Nws National Met Center), Dc.   | KWBC                    | Y   | N                   | N              | T   | Y                 | F                                |

**TABLE MET II-3 – VOLMET BROADCASTS**

EXPLANATION OF THE TABLE

The transmitting station appears at the top of each block.

Names in lower case letters indicate aerodromes for which reports (routine or selected special) are required.

Names in upper-case letters indicate aerodromes for which forecasts are required.

TABLE MET II-3 – VOLMET BROADCASTS

*Note: To be completed*

**Timeliness Indicators in METAR Messages from  
01/January/2018 to 31/December/2018  
(INTERNATIONAL AIRPORTS)**

**INDICATOR:      % TIMELINESS IN METAR MESSAGES**

| MONTH            | BASIS | INTERNATIONAL AIRPORTS |      |      |      | AVERAGE     |
|------------------|-------|------------------------|------|------|------|-------------|
|                  |       | SEQM                   | SELT | SEMT | SEGU |             |
| <b>JANUARY</b>   | 75%   | 98.4                   | 81.7 | 76.1 | 96.6 | 88.2        |
| <b>FEBRUARY</b>  |       | 98.6                   | 95.7 | 72.7 | 91.5 | 89.6        |
| <b>MARCH</b>     |       | 97.7                   | 95.6 | 93.8 | 98.9 | <b>96.5</b> |
| <b>APRIL</b>     |       | 97.1                   | 91.7 | 77.2 | 93.5 | 89.9        |
| <b>MAY</b>       |       | 98.0                   | 94.2 | 84.1 | 93.5 | 92.5        |
| <b>JUNE</b>      |       | 97.7                   | 95.6 | 71.4 | 94.0 | 89.7        |
| <b>JULY</b>      |       | 93.8                   | 89.5 | 77.7 | 91.8 | 88.2        |
| <b>AUGUST</b>    |       | 98.3                   | 93.0 | 79.6 | 97.4 | 92.1        |
| <b>SEPTEMBER</b> |       | 96.7                   | 94.2 | 81.6 | 98.7 | 92.8        |
| <b>OCTOBER</b>   |       | 98.4                   | 90.3 | 88.6 | 98.0 | 93.8        |
| <b>NOVEMBER</b>  |       | 99.3                   | 94.9 | 88.8 | 98.8 | 95.5        |
| <b>DECEMBER</b>  |       | 99.2                   | 94.2 | 85.8 | 97.4 | 94.2        |
| <b>AVERAGE</b>   |       | <b>97.8</b>            | 92.6 | 81.5 | 95.8 | 91.9        |

**Syntax Indicators in METAR Messages from  
01/January/2018 to 31/December/2018  
(INTERNATIONAL AIRPORTS)**

**INDICATOR:      % SYNTAX IN THE METAR FORMAT**

| MONTH          | BASIS | INTERNATIONAL AIRPORTS |      |      |      | AVERAGE     |
|----------------|-------|------------------------|------|------|------|-------------|
|                |       | SEQM                   | SELT | SEMT | SEGU |             |
| JANUARY        | 75%   | 99.3                   | 97.5 | 95.2 | 97.9 | 97.5        |
| FEBRUARY       |       | 98.8                   | 99.1 | 94.9 | 98.4 | 97.8        |
| MARCH          |       | 98.9                   | 98.4 | 93.8 | 98.9 | 97.5        |
| APRIL          |       | 98.8                   | 97.5 | 94.9 | 97.8 | 97.3        |
| MAY            |       | 99.3                   | 97.8 | 96.1 | 99.3 | 98.1        |
| JUNE           |       | 98.9                   | 98.4 | 93.8 | 98.9 | 97.5        |
| JULY           |       | 99.5                   | 98.5 | 96.8 | 99.2 | <b>98.5</b> |
| AUGUST         |       | 99.7                   | 97.8 | 96.1 | 99.3 | 98.2        |
| SEPTEMBER      |       | 98.6                   | 98.5 | 96.0 | 99.9 | 98.3        |
| OCTOBER        |       | 99.5                   | 97.2 | 96.2 | 99.3 | 98.1        |
| NOVEMBER       |       | 99.7                   | 97.6 | 96.4 | 99.4 | 98.3        |
| DECEMBER       |       | 99.7                   | 99.1 | 96.9 | 97.2 | 98.2        |
| <b>AVERAGE</b> |       | <b>99.2</b>            | 98.1 | 95.6 | 98.8 | 97.9        |

**Timeliness Indicators in METAR Messages  
from 01/January/2018 to 31/December/2018  
(NON-AOP AIRPORTS)**

**INDICATOR: % TIMELINESS IN METAR MESSAGES**

| MONTH           | NON-AOP AIRPORTS |             |       |       |       |       |      |      |      |      |      |      |      |      | AVER.       |
|-----------------|------------------|-------------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|-------------|
|                 | SETU             | SERB        | SEC U | SEC A | SET N | SES A | SERO | SEGS | SEST | SECO | SEJD | SEMC | SENL | SESM |             |
| <b>JANUARY</b>  | 83.8             | 82.8        | 84.8  | 82.8  | 72.7  | 77.9  | 70.2 | 88.6 | 66.3 | 56.8 | 69.2 | 66.7 | 72.7 | 81.6 | 75.5        |
| <b>FEBRUARY</b> | 95.7             | 93.2        | 87.1  | 87.9  | 90.1  | 69.5  | 70.1 | 75.0 | 65.6 | 78.3 | 92.6 | 93.2 | 70.3 | 91.7 | 82.9        |
| <b>MARCH</b>    | 87.8             | 97.9        | 94.0  | 95.5  | 89.8  | 97.0  | 96.8 | 98.3 | 97.5 | 77.7 | 89.4 | 90.6 | 73.4 | 94.8 | 91.5        |
| <b>APRIL</b>    | 85.0             | 94.7        | 89.2  | 92.8  | 83.6  | 73.6  | 84.0 | 78.5 | 83.6 | 65.4 | 91.7 | 96.9 | 74.9 | 94.6 | 84.9        |
| <b>MAY</b>      | 82.5             | 98.4        | 90.5  | 95.0  | 89.6  | 75.7  | 81.7 | 92.8 | 95.3 | 51.4 | 76.7 | 74.7 | 77.4 | 90.1 | 83.7        |
| <b>JUNE</b>     | 87.8             | 97.9        | 94.0  | 95.5  | 89.8  | 77.2  | 73.6 | 82.4 | 96.5 | 77.7 | 89.4 | 90.6 | 73.4 | 94.8 | 87.2        |
| <b>JULY</b>     | 77.2             | 94.7        | 88.9  | 90.6  | 81.4  | 64.8  | 78.8 | 91.8 | 90.3 | 79.2 | 76.2 | 90.8 | 73.0 | 91.1 | 83.5        |
| <b>AUGUST</b>   | 88.4             | 100         | 96.2  | 94.8  | 84.4  | 76.9  | 87.9 | 93.5 | 95.0 | 85.6 | 93.8 | 97.5 | 81.9 | 99.0 | 91.1        |
| <b>SEPT.</b>    | 94.1             | 99.3        | 93.1  | 93.3  | 79.7  | 89.2  | 89.7 | 90.0 | 94.7 | 94.5 | 86.2 | 91.8 | 81.5 | 97.2 | 91.0        |
| <b>OCTOBER</b>  | 93.9             | 98.5        | 94.0  | 93.5  | 86.8  | 82.9  | 92.1 | 90.1 | 95.8 | 90.3 | 80.6 | 97.3 | 91.6 | 96.8 | 91.7        |
| <b>NOV.</b>     | 87.8             | 98.3        | 93.6  | 91.0  | 86.2  | 86.8  | 94.0 | 87.7 | 97.9 | 85.9 | 88.7 | 89.7 | 95.4 | 97.7 | 91.5        |
| <b>DEC.</b>     | 87.7             | 96.3        | 92.0  | 94.8  | 90.1  | 87.8  | 94.0 | 93.1 | 95.3 | 78.9 | 88.6 | 98.8 | 91.3 | 96.8 | <b>91.8</b> |
| <b>AVERAGE</b>  | 87.6             | <b>96.0</b> | 91.5  | 92.3  | 85.4  | 79.9  | 84.4 | 88.5 | 89.5 | 76.8 | 85.3 | 89.9 | 79.7 | 93.9 | 87.2        |

**Syntax Indicators in METAR Messages  
from 01/January/2018 to 31/December/2018  
(NON-AOP AIRPORTS)**

**INDICATOR: % SYNTAX IN METAR MESSAGES**

| MONTH          | NON-AOP AIRPORTS |          |          |          |          |          |          |          |          |          |          |          |          | AVER. |          |
|----------------|------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------|----------|
|                | SETU             | SER<br>B | SEC<br>U | SEC<br>A | SET<br>N | SES<br>A | SER<br>O | SEG<br>S | SES<br>T | SEC<br>O | SEJ<br>D | SEM<br>C | SEN<br>L |       | SES<br>M |
| <b>JANUARY</b> | 97.5             | 97.5     | 98.6     | 97.1     | 94.3     | 97.3     | 95.9     | 98.5     | 97.1     | 93.8     | 90.4     | 99.1     | 94.8     | 93.1  | 96.4     |
| <b>FEB.</b>    | 99.4             | 97.5     | 96.2     | 95.8     | 96.9     | 97.3     | 95.7     | 96.7     | 95.3     | 96.9     | 97.5     | 98.1     | 98.6     | 96.4  | 97.2     |
| <b>MARCH</b>   | 97.4             | 95.2     | 98.0     | 97.5     | 99.0     | 97.0     | 96.8     | 98.3     | 97.5     | 98.0     | 96.3     | 97.8     | 94.8     | 95.3  | 97.2     |
| <b>APRIL</b>   | 93.3             | 99.4     | 98.1     | 96.7     | 95.1     | 97.9     | 98.3     | 98.2     | 97.4     | 97.2     | 98.9     | 98.7     | 92.1     | 96.7  | 97.1     |
| <b>MAY</b>     | 99.0             | 99.5     | 99.4     | 98.5     | 98.5     | 98.5     | 98.2     | 99.0     | 97.3     | 95.5     | 97.4     | 98.3     | 97.3     | 97.3  | 98.1     |
| <b>JUNE</b>    | 97.4             | 99.5     | 98.0     | 97.5     | 99.0     | 97.0     | 96.8     | 98.3     | 97.5     | 98.0     | 96.3     | 97.8     | 94.8     | 95.3  | 97.4     |
| <b>JULY</b>    | 100              | 100      | 98.6     | 99.3     | 98.3     | 98.0     | 98.4     | 99.5     | 99.0     | 99.3     | 95.5     | 99.5     | 97.8     | 99.0  | 98.7     |
| <b>AUGUST</b>  | 97.5             | 100      | 98.6     | 98.8     | 99.3     | 98.0     | 99.2     | 96.5     | 98.5     | 98.8     | 97.5     | 99.3     | 97.0     | 98.5  | 98.4     |
| <b>SEPT.</b>   | 94.4             | 95.0     | 98.1     | 98.5     | 98.7     | 98.5     | 99.2     | 95.9     | 99.2     | 94.1     | 91.8     | 96.9     | 98.7     | 98.5  | 97.3     |
| <b>OCTOBER</b> | 99.5             | 100      | 98.0     | 96.0     | 94.8     | 98.3     | 97.6     | 97.0     | 99.3     | 97.0     | 87.3     | 99.3     | 97.8     | 98.8  | 97.4     |
| <b>NOV.</b>    | 96.1             | 100      | 97.7     | 96.9     | 97.7     | 97.7     | 99.6     | 98.2     | 99.0     | 97.9     | 98.7     | 99.0     | 99.2     | 98.2  | 98.3     |
| <b>DEC.</b>    | 99.4             | 100      | 97.0     | 97.0     | 97.5     | 96.2     | 99.6     | 99.3     | 99.3     | 95.3     | 93.8     | 98.5     | 97.3     | 97.5  | 97.8     |
| <b>AVERAGE</b> | 97.6             | 98.6     | 98.0     | 97.5     | 97.4     | 97.6     | 97.9     | 98.0     | 98.0     | 96.8     | 95.1     | 98.5     | 96.7     | 97.1  | 97.5     |

**Agenda Item 2: Follow-up to the regional implementation of the ATN architecture implementation project and of ATN ground-ground applications in the SAM Region (AMHS systems and the interconnection thereof)**

2.1 Under this agenda item, the Meeting analysed the following working paper:

- *WP/06 Follow-up to the implementation of AMHS interconnections between SAM States and with States of other Regions (presented by the Secretariat);*
- *IP/03 Status of AMHS-P1 connections in Peru and existing AFTN users (presented by Peru).*

Regional implementation of AMHS

2.2 The Meeting took note of the status of implementation of AMHS in ICAO SAM States. In this regard, it was noted that all States had already implemented their AMHS systems in COM centres. **Appendix A** to this report shows all the AMHS interconnections planned for the region, where those shown in green are already operational.

2.3 The Meeting took note of the importance of completing the migration of AFTN users to the AMHS environment as soon as possible so that the users of the messaging service may enjoy the benefits available in the AMHS environment. Specifically in the case of meteorological messages, a new format was adopted and users should use AMHS terminals to transmit and receive OPMET messages in the new format (IWXXM).

2.4 In this regard, Peru presented IP/3 (SAM/COM-MET 2019-IP/03) containing information on the implemented AMHS system and its capacity, and on plans for the implementation of a new system for the AMHS COM centre in Lima.

2.5 The new AMHS system to be implemented in Peru should permit the exchange of ground-ground data using the flight information exchange model (FIXM), the aeronautical information exchange model (AIXM) and the meteorological information exchange model (IWXXM), with extensible markup language (XML) standard formats. It will also provide an interface for integration with SWIM, allowing for interoperability with its applications and infrastructure.

New format of meteorological operational messages

2.6 The Meeting took note of the need to adapt the AMHS terminals of meteorology users so that they may transmit and receive AMHS messages with content (meteorological information) in the new IWXXM format. Meteorological information will be routed as an attachment to the AMHS message. **Appendix B** to this part of the report presents an example of METAR coded in the new IWXXM format, and **Appendix C** contains the operational concept (CONOPS) for the transition of OPMET data exchange using IWXXM.

2.7 There are two possibilities for adapting a meteorology user (human) terminal. One is to obtain a new version from the AMHS user terminal provider that contemplates the adjustment for transmitting and receiving messages with IWXXM, through a human-machine (HMI) interface that generates the attachment containing the OPMET information in the IWXXM format and sends it in an AMHS message.

2.8 Another possibility is to have an application (software) that encodes the OPMET information in the IWXXM format, generating an XML file that may be sent as an attachment to the AMHS message.

2.9 The Meeting took note that the Brasilia regional OPMET bank had been adjusted to receive and store meteorological information in the IWXXM format, Version 2.1. It can also send available information via AMHS as an attachment to an AMHS message. There is a specific AMHS address of the Brasilia OPMET bank for receiving/transmitting in IWXXM, namely:

C=XX; A=ICAO; P=SB; O=SBBR; OU1=SBBR; CN=SBBRWXXM

2.10 However, the Brasilia regional OPMET bank continues to receive and transmit OPMET information in TAC format through the usual AMHS address (C=XX; A=ICAO; P=SB; O=SBBR; OU1=SBBR; CN=SBBRYZYX).

2.11 The Secretariat of the Meeting reported that, at the last meeting of the SAM Implementation Group (SAM/IG/22, Lima-Peru, 19-23 November 2018), an Interoperability Task Force (Interop TF) was created, which, in turn, may establish a subgroup to deal with the interoperability of existing systems for drafting, transmitting and receiving messages in IWXXM format in the Region. The Secretariat will present a paper at the SAM/IG/23 meeting proposing the creation of a MET IWXXM Subgroup in the Interop TF.

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**Interconexiones AMHS – Región SAM / AMHS Interconnection – SAM Region**

|    | <b>Conexión P1 /<br/>P1 Connection</b> | <b>Situación / Status</b>         | <b>Operativa en /<br/>Operational in</b> | <b>Observaciones / Remarks</b> |
|----|--|-----------------------------------|--|--------------------------------|
| 1  | SAEZ – SBBR                            | Operativa / Operational           | 04/04/2018                               |                                |
| 2  | SAEZ – SCSC                            | Pre operativa / Pre-operational   |  |                                |
| 3  | SAEZ – SGAS                            | Operativa / Operational           | 30/11/2018                               |                                |
| 4  | SAEZ – SLLP                            |                                   |  |                                |
| 5  | SAEZ – SPIM                            | Pre operativa / Pre-operational   |  |                                |
| 6  | SAEZ – SUMU                            |                                   |  |                                |
| 7  | SBBR – SGAS                            | Operativa / Operational           | 30/11/2018                               |                                |
| 8  | SBBR – SLLP                            | En coordinación / In coordination |  |                                |
| 9  | SBBR – SKBO                            | Operativa / Operational           | 22/05/2017                               |                                |
| 10 | SBBR – SMJP                            | Operativa / Operational           | 11/10/2018                               |                                |
| 11 | SBBR – SOCA                            | En coordinación / In coordination |  |                                |
| 12 | SBBR – SPIM                            | Operativa / Operational           | 14/12/2015                               |                                |
| 13 | SBBR – SUMU                            |                                   |  |                                |
| 14 | SBBR – SVCA                            | Operativa / Operational           | 28/02/2018                               |                                |
| 15 | SBBR – SYCJ                            | Operativa / Operational           | 16/07/2017                               |                                |
| 16 | SCSC – SPIM                            | Operativa / Operational           | 14/12/2015                               |                                |
| 17 | SEQU – SKBO                            | Pre operativa / Pre-operational   |  |                                |
| 18 | SEQU – SPIM                            | Operativa / Operational           | 14/12/2015                               |                                |
| 19 | SEQU – SVCA                            | Operativa / Operational           | 11/10/2018                               |                                |
| 20 | SKBO – SPIM                            | Operativa / Operational           |  |                                |
| 21 | SKBO – SVCA                            | Operativa / Operational           | 01/12/2017                               |                                |
| 22 | SLLP – SPIM                            | En coordinación / In coordination |  |                                |
| 23 | SMJP – SVCA                            | En coordinación / In coordination |  |                                |
| 24 | SMJP – SYCJ                            | Operativa / Operational           | 11/10/2018                               |                                |
| 25 | SOCA – SVCA                            | En coordinación / In coordination |  |                                |
| 26 | SPIM – SVCA                            | Operativa / Operational           | 01/12/2017                               |                                |
| 27 | SVCA – SYCJ                            | En coordinación / In coordination |  |                                |

**Interconexiones AMHS – Región SAM / AMHS Interconnection – SAM Region**

|    | <b>Conexión P1 /<br/>P1 Connection</b> | <b>Situación / Status</b>         | <b>Operativa en /<br/>Operational in</b> | <b>Observaciones / Remarks</b> |
|----|--|-----------------------------------|--|--------------------------------|
| 28 | SAEZ – FAOR                            |                                   |  |                                |
| 29 | SAEZ – SITA                            |                                   |  |                                |
| 30 | SAEZ – SVCA                            |                                   |  |                                |
| 31 | SBBR – GOOO                            | En coordinación / In coordination |  |                                |
| 32 | SBBR – KATL                            | En coordinación / In coordination |  |                                |
| 33 | SBBR – LEEE                            | Operativa / Operational           | 11/10/2018                               |                                |
| 34 | SBBR – SITA                            | Operativa / Operational           | 16/08/2018                               |                                |
| 35 | SKBO – MPPC                            | En coordinación / In coordination |  |                                |
| 36 | SPIM – KATL                            | En coordinación / In coordination |  |                                |
| 37 | SVCA – KATL                            | En coordinación / In coordination |  |                                |
| 38 | SVCA – LEEE                            |                                   |  |                                |
| 39 | SVCA – TNCC                            | En coordinación / In coordination |  |                                |
| 40 | SVCA – TTPP                            |                                   |  |                                |



**International Civil Aviation Organization**  
**Concept of Operations for the Transition of**  
**OPMET Data Exchange using**  
**IWXXM**  
**(EUR Doc 033)**  
**First Edition - 2016**

*PREPARED BY THE EUROPEAN AND NORTH ATLANTIC OFFICE OF ICAO*

*EDITION DATE 15/06/2016*

**Agenda Item 3:** Review of SIGMET messages. Analysis of their format and exchange

3.1 Under this agenda item, the Meeting analysed the following working and information papers:

- WP/07 – *Implementation of a procedure for coordination between adjacent MWOs (presented by Ecuador)*
- WP/08 – *Impact of meteorological conditions on flight operations and how to prevent risks*

**Procedure for coordination between adjacent MWOs**

3.2 Ecuador reminded the Meeting that the MP/2 meeting had discussed issues related to the surveillance of severe phenomena en route. In this regard, note was taken of SIGMET messages issued for the same phenomena, but affecting several FIRs. The issues observed referred to inconsistencies in the information from the affected areas, differences in ceilings, and inconsistencies in the information on severe phenomena along flight information region (FIR) boundaries. The Meeting recognised the difficulties in coordination between States, and the need to establish coordination procedures using current technological media (chat, teleconferencing, among others), in order to generate consistent reports among the meteorological watch offices involved, to accurately reflect the occurrence of the phenomena, issuing homogeneous reports and providing a continuous description of phenomena.

3.3 The lack of procedures for coordination between MWOs of adjacent FIRs offers the opportunity of improving the monitoring of severe phenomena affecting more than one FIR at the same time. The Meeting, upon reviewing the proposed communication exercises between adjacent MWOs, considered that the occurrence of phenomena had to be analysed and characterised, defining sub-regional groups based on the climatology of events. Accordingly, communication exercises should start in the following FIRs:

- a) Ezeiza, Montevideo, and Curitiba FIRs
- b) Resistencia, Asunción, La Paz, Curitiba, and Brasilia FIRs
- c) Mendoza and Córdoba FIRs
- d) Lima and Guayaquil FIRs
- e) Lima, Amazonía, and Brasilia FIRs
- f) El Dorado and Lima FIRs
- g) Lima and La Paz FIRs
- h) El Dorado, Maiquetía, and Panama FIRs
- i) Maiquetía, Georgetown, and Paramaribo FIRs
- j) Puerto Montt and Comodoro Rivadavia FIRs

3.4 States will coordinate the conduction of exercises and inform the Secretariat of the results and feasibility of implementation of coordination procedures for monitoring phenomena.

3.5 The representative of Colombia recommended the use of Zoom and Telegram for coordination purposes, as a result of the actions agreed upon. The links for both applications are:

ZOOM: <https://play.google.com/store/apps/details?id=us.zoom.videomeetings>

TELEGRAM: <https://play.google.com/store/apps/details?id=org.telegram.messenger>

**Impact of meteorological conditions on flight operations and prevention of risks**

3.6 The Meeting noted that, especially in 2018, the Region had suffered several aircraft incidents in which storms, icing and severe turbulence had been contributing factors or had been the reason thereof.

3.7 The Meeting agreed that, considering the events occurred in recent years, the new scenario generated by climate change in our planet was significantly contributing to the intensification, recurrence and presence of increasingly severe weather conditions, which represent a major hazard for flight operations. It felt that a more precise knowledge of their location, severity, presence and recurrence would help prevent or avoid the risks facing flight crews.

3.8 The Meeting felt that it was necessary to take action in order to mitigate risks to aviation resulting from the occurrence of severe atmospheric phenomena. In this context, it noted that the action to be taken should focus on various areas, such as:

- a) ATS/MET coordination
- b) MET personnel
- c) DOV and flight crews (pilots)

3.9 The actions recommended by the Meeting should be focused on:

- a) Reviewing and updating ATS/MET agreements in light of the latest amendments to Annex 3, Annex 11, Doc 8896 and Doc 9377, and of the PANS-ATM (Doc 4444)
- b) Conducting recurrent courses on SIGMET message drafting based on special air reports and other sources of information (satellite images, meteorological radar, observations, numeric prediction models);
- c) Establishing procedures for pre-flight weather briefings for aircraft operators;
- d) Establishing procedures for keeping MET personnel up to date;
- e) Establishing agreements with ATS units and operators' personnel (DOV, crews) for the conduction of refresher workshops on SIGMET information.

3.10 Likewise, the Secretariat was requested to consider the possibility of organising a regional workshop on SIGMET in 2020, in coordination with other institutions, addressed to all the aeronautical community (Pilots, ATCO, AIM, MET, DOV).

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**Agenda Item 4: Exercises of SIGMET messages for volcanic ash. Evolution and future projects.**

4.1 Under this agenda item, the Meeting reviewed WP/10 – Analysis of the results of volcanic ash exercises, presented by the Secretariat.

4.2 The Meeting recalled that exercises of SIGMET messages for volcanic ash had been carried out periodically since the GREPECAS/14 meeting, pursuant to GREPECAS Conclusion 14/2.

4.3 The Meeting also recalled that, in 2015, the Washington VAAC proposed a reduction in the duration of exercises from 36 hours to 12 hours due to work overload. The MET Projects Meeting agreed that there could be two exercises, one led by the Buenos Aires VAAC, with a validity of 36 hours, and another by the Washington VAAC, with a duration of 12 hours.

4.4 Likewise, in 2017, following a teleconference with representatives of the Washington VAAC, a representative of the ICAO NACC Office and delegates of SAM States associated to the Washington VAAC, it was proposed that a chat channel be used to obtain volcanic ash advisory information, in addition to possible exercises. Some tests conducted by Ecuador have not been satisfactory.

4.5 Upon considering the above and taking into account that Conclusion 14/2 was still valid, the Meeting recommended that exercises be resumed with a frequency of once a year in order to provide continuous training on the action to be taken in case of volcanic eruption or presence of volcanic ash clouds in the FIRs under the watch responsibility of an MWO.

4.6 Regarding the release of radioactive material, and since no State had reported having a contingency plan for this issue, the Meeting recommended to include this item in the review of ATS/MET agreements mentioned in Item 3, and to plan workshops and talks for ATS personnel on the implications of a release of radioactive material into the atmosphere. It also urged States to update their personnel in the drafting of SIGMET messages related to the release of radioactive material within the context of Amendment 78 to ICAO Annex 3.

4.7 The Meeting requested the Secretariat to follow up on this action by means of a State letter in May. Furthermore, it requested that a draft Contingency Plan be submitted to the South American Implementation Group (SAMIG).

**Agenda Item 5:****Amendment 78 to Annex 3. Implementation of OPMET data exchange in XML/GML format, model IWXXM, preparation for the exchange of OPMET messages in a SWIM environment and space condition messages (space weather).**

5.1 Under this agenda item, the following working and information papers were presented:

- *WP/09 – Implementation of the IWXXM model (presented by the Secretariat)*
- *IP/05 – Status of implementation of space weather advisory services (presented by the Secretariat)*
- *Presentation on the development of software for converting OPMET messages from the alphanumeric format to XML, presented by Venezuela*

5.2 The Meeting took note that, regarding IWXXM, Amendment 78 to ICAO Annex 3 had indicated the following:

- Until 4 November 2020, all advisory messages (volcanic ash, tropical cyclones, space weather) and OPMET messages (METAR, SPECI, TAF, SIGMET, AIRMET) should be disseminated in IWXXM GML format.
- As of 5 November 2020, dissemination in the IWXXM GML format becomes the standard.
- Regarding space weather advisory messages, the recommendation is as of 7 November 2019.

5.3 Upon reviewing this requirement, the Meeting recommended that States ensure the implementation of the necessary infrastructure to facilitate the exchange of advisory messages and OPMET messages in IWXXM GML format by the date established in Amendment 78 to ICAO Annex 3. Likewise, it requested the Secretary to follow up on this implementation.

5.4 Taking into account the proximity of the date of implementation of Amendment 78 to Annex 3 regarding the exchange of OPMET data in IWXXM GML format, the Meeting agreed to formulate the following recommendation:

**Recommendation SAM COM/MET/2019-1:** Tests for the exchange of OPMET messages in IWXXM GML format

Those States in a position to exchange OPMET messages in IWXXM GML format should agree to conduct tests and report their results to the ICAO SAM Regional Office.

5.5 In this regard, Venezuela presented the development of the OPMET message converter from an alphanumeric format to XML. The development by the aeronautical meteorological service provider of Venezuela permits the individual or collective conversion of OPMET METAR and TAF messages to the XML format and their presentation in such a format as to permit their attachment to AMHS messages.

5.6 Taking into account that Cuba had also developed its own databank and processes for transmitting information through the AMHS network, the Meeting suggested that Cuba and Venezuela work together to develop an IWXXM version capable of encoding OPMET messages for transmission through AMHS systems, since Venezuela already had in operation a encoding software called METAX, capable of converting METAR and TAF messages from the TAC format to XML.

5.7 Regarding the implementation of the space weather advisory service, the Secretariat noted that, following its inclusion in Amendment 78 to ICAO Annex 3, effective 7 November 2019, the ICAO Meteorology Panel working group on Meteorological Information and Service Development, specifically the Space Weather Centre Coordination Group, had continued working on the definition of several items related to the provision of the services.

5.8 In this sense, tasks underway are as follows:

- a) Designation of space weather centres;
- b) Definition of headers for advisory messages and administrative messages;
- c) Definition of the distribution list (AFS, AFTN, AMHS)
- d) Message format and templates

5.9 The Secretariat informed the Meeting that some tasks had already been completed and other were still underway. The Meeting took note that further information would be provided at the MET Projects meeting.