C A R I B B E A N

M E T E O R O L O G I C A L

O R G A N I Z A T I O N

**ANNUAL MEETING OF DIRECTORS OF METEOROLOGICAL SERVICES Doc. 4**

Virtual Meeting, 18 NOVEMBER 2020

**OPERATIONAL MATTERS**

(Submitted by the Coordinating Director)

## INTRODUCTION

1. Matters that are particularly related to the operations at National Meteorological Services (NMSs) are normally raised or addressed in this document. However, the only matter being raised this year is the results of the 2019 WMO Annual Global Monitoring.

## A. WMO ANNUAL GLOBAL MONITORING

2. The World Meteorological Organization (WMO) Manual on the Global Telecommunication System (GTS), in its Attachment 1‑5, refers to a plan for monitoring the operation of the World Weather Watch (WWW). This plan includes provisions for the internationally coordinated monitoring of the operation of the WWW on a non-real-time basis.

3. The Annual Global Monitoring (AGM) is carried out in October each year. The WWW centres are invited to monitor SYNOP, TEMP, PILOT, and CLIMAT reports from the *Regional Basic Synoptic Network* (RBSN) stations, in accordance with the responsibility taken for the exchange of data on the GTS:

* The **National Meteorological Centres** (NMCs) should monitor data from their own territory:
* **Regional Telecommunication Hubs** (RTHs) should at least monitor data from their associated NMCs, and possibly from their own Region:
* **World Meteorological Centres** (WMCs) and RTHs located on the Main Trunk Network (MTN) should monitor the complete global data set.

4. The results of the AGM make it possible to compare the availability of the reports received from RBSN stations at the NMC responsible for inserting the data in the Regional Meteorological Telecommunication Network (RMTN), at the associated RTH and at MTN centres. The differences in the availability of data between centres are generally due to the following main reasons: (i) differences of requirements in the reception of data, (ii) shortcomings in the relay of the data on the GTS, (iii) data not monitored due to differences in the implementation of the monitoring procedures at centres.

5. There are ten (10) Members States of the Caribbean Meteorological Organization whose National Meteorological Service (NMS) are RBSN stations. These are Antigua and Barbuda, Barbados, Belize, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, and Trinidad and Tobago.

6. The AGM for 2019 took place between 1-15 October and the submission from the RBSN stations can be found on the WMO server at **ftp://ftp.wmo.int/GTS\_monitoring/AGM/To\_WMO/201910/.** The data on the server indicates that Barbados, Cayman Islands, Jamaica and Trinidad and Tobago participated in the AGM. Unlike previous years, at the time of the writing of this report, the only 2019 results which was available at **https://community.wmo.int/activity-areas/quantity-monitoring/agm-2019A-regional** was the surface synoptic observations, which is presented in **Table 1** below. The monitoring analysis reflects for the most part, the reports from the RTH and MTN centres.

|  |  |
| --- | --- |
| **Country** | **SYNOP****(%)** |
| Antigua and Barbuda | **45-90** |
| Barbados | **Silent** |
| Belize (Phillip Goldston) | **90-100** |
| Cayman Islands | **45-90** |
| Dominica (Canefield) | **45-90** |
| Dominica (Melville Hall) | **45-90** |
| Grenada | **45-90** |
| Guyana (Cheddi Jagan) | **45-90** |
| Jamaica (Kingston) | **90-100** |
| Jamaica (Montego Bay | **90-100** |
| Saint Lucia (Hewanorra) | **90-100** |
| Saint Lucia (Vigie) | **45-90** |
| Trinidad and Tobago (Crown Point) | **45-90** |
| Trinidad and Tobago (Piarco) | **45-90** |

 **Table 1: Results of the 2019 Annual Global Monitoring:**

7. Subsequent to the 2019 Meeting of the Directors of Meteorological Services and the Headquarters Unit of the Caribbean Meteorological Organization and the Barbados Meteorological Service worked to ensure that the observations from Barbados were reaching the international meteorological community. Hence this should be the last report showing observations from Barbados as "Silent".

## B. WIGOS IMPLEMENTATION

8. The Meeting will recall that WMO Integrated Global Observing System (WIGOS) matters have been under discussion from 2015 to 2019 at this forum. WMO mandated that all meteorological services should be WIGOS ready by the start of WMO Congress in 2019 and the perquisites for being WIGOS ready are:

1. OSCAR/Surface: completed WIGOS metadata of all observing stations across all WIGOS components for which observations are exchanged internationally;
2. WIGOS metadata: compliance achieved;
3. WIGOS Station Identifiers: implemented;
4. WIGOS Data Quality Monitoring System (WDQMS): national process for acting on quality problem information received from the WDQMS in place;
5. Embracing all NMHS-operated observing systems and willing partners;
6. National WIGOS governance, coordination and implementation mechanisms established;
7. Nomination of national WIGOS focal points and OSCAR focal points completed.

9. Further, to assist meteorological services in becoming "WIGOS Ready", WMO in 2016 imported the metadata of all of all meteorological services platforms which was contained in WMO No. 9 - Weather Reporting - Volume A Observing Stations, into OSCAR/Surface, the repository for all observing stations' metadata. This was done in April 2016/17. Table 2 below indicates that the last date the Meteorological Services of CMO Member States updated their metadata in OSCAR/Surface.

|  |  |  |
| --- | --- | --- |
| **Country - Observing Station** | **Date** | **Name** |
| **Anguilla** | 2017-04-07 | Pröscholdt, Timo |
| **Antigua and Barbuda** -VC Bird int'l Airport | 2016-04-28 | N/A |
| **Barbados** - BELLE B.W.A NESA AWS - BMS CAD 3D PAWS - BMS Sutron AWS Charnocks Christ Church - BOWMANSTON 3D PAW - CIMH - G.A.I.A RUNWAY CASELLA AWS - GOLDEN RIDGE 3D PAWS - GRANTLEY ADAMS - HALF ACRE 3D PAW - LAKES FOLLY 3D PAWS | 2020-05-212020-05-212020-05-042020-05-212016-04-282020-05-212020-05-212020-07-172020-05-212020-05-21 | Lashley, ElvisLashley, ElvisLashley, ElvisLashley, ElvisN/ALashley, ElvisLashley, ElvisJackman, SemelkaLashley, ElvisLashley, Elvis |
| **Belize** - LANDIVAR - PHILLIP GOLDSTON INTL. AIRPORT - HALF MOON CAYE - HUNTING CAYE - RADAR | 2016-04-282019-10-302016-04-282016-04-282019-02-18 | N/ARudon, DerrickN/AN/ARudon, Derrick |
| **British Virgin Islands** - BEEF ISLAND, TORTOLA | 2016-04-28 | N/A |
| **Cayman Islands** - CAYMAN BRAC - HIGH ROCK - OWEN ROBERTS AIRPORT | 2018-04-302018-04-302018-04-30 | De Souza, GlendellDe Souza, GlendellDe Souza, Glendell |
| **Dominica** - CANEFIELD AIRPORT - MELVILLE HALL AIRPORT | 2016-04-282016-04-28 | N/AN/A |
| **Grenada** - MAURICE BISHOP INT'L AIRPORT | 2018-04-18 | De Souza, Glendell |
| **Country - Observing Station** | **Date** | **Name** |
| **Guyana** - EBINI - GEORGETOWN - KAIETEUR FALLS - KAMARANG - LETHEM - MABARUMA - NEW AMSTERDAM - OGLE INT'L AIRPORT - RADAR - TIMEHRI/CHEDDI JAGAN INT'L | 2016-04-282016-04-282016-04-282016-04-282016-04-282016-04-282016-04-282016-04-282016-04-292016-04-28 | N/AN/AN/AN/AN/AN/AN/AN/AN/AN/A |
| **Jamaica** - COOPERS HILL - KINGSTON/NORMAN MANLEY - MONTEGO BAY/SANGSTER - MORANT POINT - NEGRIL POINT - RADAR/KINSTON | 2016-09-232016-04-282016-04-282016-04-282016-04-282016-04-29 | Abayasekara MohanN/AN/AN/AN/AN/A |
| **Montserrat** - JOHN A. OSBORNE AIRPORT | 2017-04-07 | Pröscholdt, Timo |
| **St Kitts & Nevis** - R.L.BRADSHAW INT'L AIRPORT - V.W.AMORY INT'L AIRPORT | 2018-12-112016-04-28 | De Souza, GlendellN/A |
| **St Vincent and the Grenadines** -  | **0 stations/platform found** |
| **Trinidad and Tobago** - CROWN POINT AIRPORT - PIARCO INT'L AIRPORT - PORT OF SPAIN - RADAR Brasso Seco | 2016-04-282020-05-262016-04-282016-04-29 | N/AAaron-Morrison ArleneN/AN/A |
| **Turks and Caicos Islands** - GRAND TURK - PROVIDENCIALES | 2017-04-072017-04-07 | Pröscholdt, TimoPröscholdt, Timo |

**Table 2: Dates when last metadata was updated in OSCAR/Surface by CMO Member States' Meteorological Service**

10. Based on Table 2, the services have never updated their metadata;

1. Anguilla
2. Antigua and Barbuda
3. Barbados: - CIMH metadata
4. Belize: - Landivar, Half Moon Caye, Hunting Caye metadata
5. British Virgin Islands
6. Dominica
7. Guyana
8. Jamaica
9. Montserrat
10. Nevis
11. Trinidad and Tobago:- Crown Point, Port of Spain and the Radar in Brasso Seco metadata
12. Turks and Caicos Islands

Further, the radar in Barbados is not listed as an observation platform and the metadata for St Vincent and the Grenadines has been deleted and would have reinserted within OSCAR/Surface. Meteorological Services which operate a weather must also have the radar metadata inserted the WMO Radar Database, which can be found at **https://wrd.mgm.gov.tr/Home/Wrd**.

11. In regards to the metadata needed for updating OSCAR/Surface for the Meteorological Services in the countries of the British Virgin Islands, Montserrat and the Turks and Caicos Islands for which CMO is responsible, an email was sent to the Services on 28 February and a reminder sent on 6 July 2020 but there was no response. The initial data which needs to be updated is contained in **Annex I**.

## C. ICAO METEOROLOGICAL INFORMATION EXCHANGE MODEL (IWXXM)

12. The Meeting will recall that at its 2018 and 2019 meetings there was discussion on the ICAO Meteorological Information Exchange Model (IWXXM) as a data format for reporting aeronautical meteorological information in XML/GML. Information on the data standard and its development are available at **https://wis.wmo.int/page=TT-AvXML** and the technical maintenance of the code can be accessed at **https://github.com/wmo-im/iwxxm**.

14. The Meeting will recall that Annex 3 to the Convention on International Civil Aviation: - *METEOROLOGICAL SERVICE FOR INTERNATIONAL AIR NAVIGATION* was updated in November 2018 to reflect the need to transmit aviation observations, forecast and warning in IWXXM format. The text states:

***1.1.2*** As of 5 November 2020, TAF shall be disseminated in IWXXM GML form in addition to the dissemination of the TAF in accordance with 1.1.1.

***1.1.6*** *As of 5 November 2020, SIGMET information shall be disseminated in IWXXM GML form in addition to the dissemination of SIGMET information in accordance with 1.1.1.*

***2.1.3*** As of 5 November 2020, METAR and SPECI shall be disseminated in IWXXM GML form in addition to the dissemination of the METAR and SPECI in accordance with 2.1.2.

***3.1.2*** As of 5 November 2020, volcanic ash advisory information shall be disseminated in IWXXM GML form in addition to the issuance of this advisory information in accordance with 3.1.1.

*Note.— The technical specifications for IWXXM are contained in the Manual on Codes (WMO‑No. 306), Volume I.3, Part D — Representation Derived from Data Models. Guidance on the implementation of IWXXM is provided in the Manual on the ICAO Meteorological Information Exchange Model (IWXXM) (Doc 10003).*

15. Further, the WMO headers in the form of **T1T2A1A2ii CCCC** for the aviation observations, forecasts and warnings in IWXXM format are different than the traditional headers. The new WMO headers for aviation information in XML format will start with "L" and from **Table B7**, which is found in *WMO 386, Manual of the Global Telecommunication System*-Attachment.II-5, the **T2** letter is chosen depending on the type of message to be disseminated as shown in the in the table below:

**TABLE B7 Data type designator T2 (when T1 = L)**

|  |  |  |  |
| --- | --- | --- | --- |
| T1 | T2 - Data Type | GTS priority | Code form name |
| A | Aviation routine reports ("METAR") | 2 |   |
| C | Aerodrome Forecast ("TAF") (VT < 12 hours) | 3 |   |
| P | Special aviation weather reports (“SPECI”) | 2 |   |
| S | Aviation general warning ("SIGMET") | 1 |   |
| T | Aerodrome forecast ("TAF")) (VT ≥ 12 hours) | 3 |   |
| V | Aviation volcanic ash warning ("SIGMET") | 1 |   |
| Y | Aviation tropical cyclone warning ("SIGMET") | 1 |   |

|  |
| --- |
| **TABLE C1** |
| Geographical designators A1A2 for use in abbreviated headings T1T2A1A2 ii CCCC YYGGgg for bulletins containing meteorological information, excluding ships’ weather reports nd oceanographic dat |

Part I - Country or Territory Designators

|  |  |  |  |
| --- | --- | --- | --- |
| **A1A2** | **Country** | **A1A2** | **Country** |
| AT | Antigua and Barbuda, Saint Kitts and other British Islands in the vicinity | JM | Jamaica |
| BH | Belize | LC | Saint Lucia |
| BR | Barbados | TD | Trinidad and Tobago |
| GC | Cayman Islands | TI | Turks and Caicos Islands |
| DO | Dominica | VG | St Vincent and the Grenadines |
| GY | Guyana |  |  |

16. There is a freely available translation tool converting traditional alphanumeric code form of METAR, SPECI, TAF, etc. to IWXXM at **https://github.com/wmo-im/iwxxm-translation**. The tool is expected to be able to translate exactly, other than whitespace and newline differences. This repository is provided by the WMO Task Team for Aviation XML (TT-AvXML) as a convenience for IWXXM developers, but the contents are not reviewed for correctness by TT-AvXML and has no official status in WMO or ICAO.

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**WIGOS Station Metadata**

Name:

Station alias:

Date established:

Date closed:

Declared reporting status:

Calculated reporting status:

Station type:

WIGOS Station Identifier(s):

WMO Region

Country / Territory:

Coordinates:

Time zone:

Supervising organization:

Station URL:

Other link (URL):

Site description:

Climate zone:

Predominant surface cover:

Surface roughness:

Topography or bathymetry:

Population in 10km / 50km (in thousands):

Station / platform event logbook:

September 2020