International Civil Aviation Organization ***English only***

CAR/SAM Planning and Implementation Regional Group (GREPECAS)

Second Meeting of the Programmes and Projects Review Committee (PPRC/2)

Lima, Peru, 16 - 18 July 2013

Agenda Item 3: Review of the GREPECAS' Programmes and Projects

3.7 Projects under the Aeronautical Meteorology Programme

SUPPORT BY UNITED STATES TO GREPECAS FOR METEOROLOGICAL INFORMATION

(Presented by the United States)

SUMMARY	
This paper presents an overview of how the United States is supporting States in GREPECAS with the various implementation challenges for meteorological services.	
References: • Global Plan Initiatives: GPI-19 Meteorological Systems	
Strategic Objective(s)	*This information paper is related to Strategic Objective(s):* *A – Safety* *C – Environmental Protection and Sustainable Development of Air Transport.*

1. Introduction

1.1 This paper presents an overview of how the United States is supporting States in GREPECAS with the various implementation challenges for meteorological services. The purpose of this paper is to highlight the most relevant changes.

2. Discussion

1.2 WAFS

1.2.1 Cessation of WAFS upper-air forecasts in WMO GRIB Edition 1 code form

1.2.1.1 In accordance with WAFSOPSG/7 Decision 7/9 WAFS upper-air forecasts in the GRIB1 code form will cease to be generated as part of the WAFS portfolio of datasets as of applicability of Amendment 76 to ICAO Annex 3. The last WAFS Upper Air Forecasts produced in GRIB1 code form will be those with observational data time of 1800 UTC 13 November 2013. It will be necessary for users to test the ingestion and visualization of WAFS GRIB2 data before the termination of GRIB1 to ensure that their systems are fully compatible.

1.2.2 WAFS upper air forecasts of cumulonimbus cloud, icing and turbulence

1.2.2.1 The WAFS upper air forecasts of cumulonimbus cloud, icing and turbulence will become operational effective 14 November 2013.

1.2.2.2 The World Area Forecast Center (WAFC) Provider States have produced a guidance document (Guidance on the Harmonized WAFS Grids for Cumulonimbus Cloud, Icing and Turbulence Forecasts - 11 September 2012), and this is available on the WAFSOPSG website:
http://www.icao.int/safety/meteorology/WAFSOPSG/Pages/GuidanceMaterial.aspx

1.2.2.3 In addition, WAFC Provider States have developed computer based (including voice over) initial training material for the WAFS gridded global forecasts for cumulonimbus clouds, icing and turbulence. This training will be made available on the WAFSOPSG website. A notice will be posted to the WAFS Change Implementation Notice Board once the training is made available. The WAFS Change Notice Board is available on the following WAFSOPSG website:
http://www.icao.int/safety/meteorology/WAFSOPSG/Reference%20Documents/Forms/AllItems.aspx

1.2.3 **WAFS Internet File Service (WIFS)**

1.2.3.1 WIFS is the operational service by WAFC Washington that provides access to all WAFS products and OPMET data as defined in ICAO Annex 3 – *Meteorological Service for International Air Navigation*, and Annexes 1 and 4 of the SADIS Users Guide (SUG). WIFS replaced the International Satellite Communication System (ISCS) in July 2012.

1.2.3.2 Backup for WIFS is provided by WAFC London through the SADIS Secure FTP Service. WIFS. WIFS users are reminded that the file configurations between WIFS and SADIS Secure FTP Service are different, thus users need to work with their service providers to test the capability.

1.3 **Space Weather Services**

1.3.1 At the 12th Air Navigation Conference it was recognized that space weather information is essential as part of the Global Air Traffic Management (ATM) and noted that space weather information is to be included in Block 1 of the Aviation System Block Upgrades (ASBU).

1.3.2 The United States has been leading the effort to develop a Concept of Operations (ConOps) for space weather services. In early 2012, ICAO, via a State letter, invited States to comment on the draft. Over 800 comments were received and adjudicated to their relevance. Subsequently, a revised version was presented at the seventh meeting of IAVWOPSG. It was agreed at the meeting that there were still other issues that needed to be addressed in the ConOps. A second ad-hoc group, will address the issues identified and provide an updated version at the eighth meeting of IAVWOPSG in early 2014 for acceptance by the group. The goal is for a final version of the ConOps to be presented at the proposed ICAO MET Divisional Meeting (July 2014).

1.3.3 Additionally, draft Standards and Recommended Practices (SARPs) for space weather information were reviewed at IAVWOPSG/7 (WP/19). Appendix N of the final report of IAVWOPSG/7 contains the draft SARPs for space weather. These draft SARPs will also be presented at the proposed MET Divisional Meeting in July 2014.

1.4 **Data exchange**

1.4.1 Effective with Amendment 76 to ICAO Annex 3 – *Meteorological Service for International Air Navigation* (applicability Nov. 2013), exchange of METAR, SPECI, TAF and SIGMET may be done in digital form under a bilateral agreement between States in a position to do so. Amendment 76 also states that the digital form shall be formatted in accordance with a globally interoperable information exchange model and shall use extensible markup language (XML)/geography markup language (GML).

1.4.2 To achieve this goal the Air Navigation Commission (ANC) authorized the Meteorological Aeronautical Requirements and Information Exchange Project Team (MARIE-PT) to undertake the task to develop appropriate documentation to support the development of the provision of METAR, SPECI, TAF and SIGMET in an XML format. The result was the development of new data model named ICAO Meteorological Information Exchange Model (IWXXM).

1.4.3 While Amendment 76 encourages States, in a position to do so, to exchange meteorological information using XML, it is planned to introduce this capability as a recommendation as part of Amendment 77 to Annex 3, and then a standard with Amendment 78 to Annex 3.

1.5 Technical guidance and documentation on the Digital Exchange of Aeronautical MET Information drafted by the MARIE-PT will be published by ICAO as a manual (Doc 10003) in time for applicability of Amendment 76 to Annex 3. This technical guidance will include a visual and textual description of the model, examples, and information on tooling and technologies in the model.

1.5.1 MARIE-PT currently expects a transition period of several years where both the Traditional Alphanumeric Code (TAC) form and the matching XML/GML form will be distributed concurrently. The MARIE-PT is also assessing what other Annex 3 products should be exchanged in digital form as part of Amendment 77 to Annex 3.

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1.5.3 More information on IWXXM can be found at the following URL:
http://www.wmo.int/pages/prog/www/WIS/wiswiki/tiki-index.php?page=AvXML-1.0RC2

1.6 **Volcanic Ash**

1.6.1 In response to the conclusions from the seventh meeting of the International Airways Volcano Watch Operations Group (IAVWOPSG) the United States is leading the following:

- Development of procedures and guidelines for Collaborative Decision Analysis and Forecasting for the Volcanic Ash Advisory Centers (VAAC).
- Development of a roadmap for volcanic ash services, taking into consideration the work lead by the United States in drafting a ConOps for volcanic ash information.
- Development of draft guidance material for the formulation and use of complex volcanic ash cloud SIGMETs in graphical format.
- Development of a proposal to volcanic ash cloud information beyond 18 hours.

1.6.2 **Aviation System Block Upgrade (ASBU)**

1.6.2.1 At the 12th Air Navigation Conference (ANC), the Committee on Agenda Item 4 noted that meteorological (MET) information was an integral component of the future system-wide information management (SWIM) environment, alongside aeronautical information, flight and flow information and other information sources. As MET information transitions to interoperable, non-proprietary code forms within the SWIM environment using new exchange models, it was noted that tremendous potential existed to enhance the safety and the efficiency of the global ATM system through enhanced availability and use of MET information. With this in mind, the Committee endorsed a planning thread promoting the use of integrated MET information to enhance operational decision making, as proposed for inclusion in the Aviation System Block Upgrade (ASBU) framework to be included in the Global Air Navigation Plan.

1.6.2.2 The ASBUs will enable aviation to realize global harmonization, increased capacity, and improved environmental efficiency that modern air traffic growth now demands in every region around the world. The ASBUs are in line with the United States' Next Generation Air Transportation System (NextGen).

3. **Action by the meeting**

1.7 The meeting is invited to note the information in this paper.

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