International Civil Aviation Organization SAM/MP/3-IP/05
South American Regional Office 14/05/19
Third Meeting on Projects of the MET Program of GREPECAS for the SAM

(Lima, Peru, from 17 to 20 June 2019)

Agenda Item 8: Other business

(Presented by the United States)

SUMMARY

This paper informs the GREPECAS about upcoming improvements to the World Area Forecast System. A PowerPoint presentation is attached that will provide a more detailed explanation of the improvements.

1. INTRODUCTION

1.1 The World Area Forecast System (WAFS) is comprised of two World Area Forecast Centers (WAFCs), WAFC London and WAFC Washington. The two WAFCs produce global Significant Weather Charts that show the 24 hour forecast positions of tropical cyclones, turbulence, icing, thunderstorms and jet streams, as well as the positions of active volcanoes. The WAFCs also provide gridded model forecasts of upper level winds, temperature, relative humidity, tropopause heights, turbulence, icing and thunderstorms. These gridded forecasts are currently available from forecast hour T+06 to T+36, in 3 hour time steps. All of the above forecasts will be improved over the next 5 years to meet the requirements of trajectory based operations.

2. DISCUSSION

2.1 The WAFCs plan to resolve issues with the current generation Significant Weather Charts (SIGWX). Specific issues are that the charts are sometimes inconsistent between the two WAFCs, and sometimes inconsistent with the WAFS grids. The charts are also not available in enough time steps to support short range or extremely long range flights. The WAFCs will resolve both of these issues by using the WAFS grids to produce charts in many more time steps than are available today.

2.2 Improvements to the WAFS grids are also planned. The grids will have higher vertical and horizontal resolution, which will lead to more accurate fuel load calculations, and more accurate placement of hazards. There will also be more time steps, making them more suitable for shorter and longer duration flights. Finally, icing and turbulence severity forecasts will become available in 2020, followed by probabilities of icing, turbulence and thunderstorms in 2024.

2.3 Due to the increase in horizontal, vertical and temporal resolutions, the file size of the grids will increase by over 230 times the size of today's files. This will require a more sophisticated dissemination system than today's WIFS and SADIS. Both of those systems will be upgraded to allow users to request the only flight levels, time steps and areal coverage of the gridded data that they wish to download. The systems will then create custom files that meet each user's request. The upgraded dissemination systems will also provide this selective downloading capability for IWXXM OPMET data.

2.4 **ACTION BY THE GREPECAS**

3.1 The GREPECAS is invited to note the information contained in this paper and to review the attached PowerPoint for more information.