



International Civil Aviation Organization
CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)
Eleventh Meeting of the GREPECAS Aeronautical Meteorology Subgroup
(AERMETSG/11)
Lima, Peru, 28 to 30 November 2011

Agenda Item 2: Review the status of implementation of the World Area Forecast System (WAFS) in the CAR/SAM Regions

(Presented by the Secretariat)

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| SUMMARY | |
| This working paper presents information on the progress of the World Area Forecast System (WAFS), in accordance with the results of the Sixth Meeting of the WAFS Operations Group (WAFSOPSG/6) and the implementation status in CAR/SAM States. | |
| References | |
| <ul style="list-style-type: none">• Report of the Sixth Meeting of the World Area Forecast System Operations Group (WAFSOPSG/6), 21 to 24 March 2011, Dakar, Senegal.• Report of GREPECAS/15 Meeting | |
| ICAO Strategic Objective: | <i>C - Environmental Protection and Sustainable Development of Air Transport</i> |

1. Introduction

1.1 The Meeting may recall that, according to its Terms of Reference, the WAFSOPSG, among others, reviews regularly WAFS global procedures contained in the air navigation plans/documents on facilities and services (ANP/FASID), and agrees on the amendments, which are furtherly referred to ICAO Regional Offices to be processed and circulated to the States, as appropriate. Also, the WAFSOPSG prepares proposals for WAFS development in order to ensure its continuous global evolution and, where appropriate, regional.

1.2 Information Paper 05 (IP/05) presents detail information, provided by the WAFS Washington Provider State, on the progress and evolution of the World Area Forecast System (WAFS), which has been translated into Spanish, in view of its importance.

2. Discussion

2.1 The Sixth Meeting of the WAFS Operations Group (WAFSOPSG/6) was carried out from 21 to 24 March 2011 in Dakar, Senegal. The executive summary is reproduced in **Appendix A** to this working paper. Complete information regarding this and other WAFSOPSG meetings can be found, only in English, at the WAFSOPSG website: <http://www2.icao.int/en/anb/met/wafsopsg/Pages/default.aspx>.

Review on ICAO WAFS provisions

2.2 The Group, when reviewing the regional World Area Forecast System (WAFS) procedures, proposed amendments, which have included in a consolidated proposal for amendment to the CAR/SAM ANP.

Review of the status of implementation of ISCS

2.3 The Subgroup could take note of the actions of the WAFS Washington Provider State to replace the second-generation ISCS (ISCS-G2) by the WAFS Internet File Server (WIFS), as well as of the status of implementation of CAR/SAM States to make the corresponding transition. This information is available in working papers WP/09, WP /10, WP /11 and WP /12.

2.4 According to the *Note* of GREPECAS Conclusion 15/6, **Appendix B** to this working paper includes the list of WIFS focal points, which is expected to be updated, if necessary, during the Meeting.

2.5 In this regard, it has been noted that the list of contacts of the WAFS Washington Provider State differs from the list of the Regional Office, thus, the importance of having only one list and one format is emphasized.

2.6 The Meeting could take note that with the new GREPECAS mechanism (Decision 16/45), the implementation of MET issues will be carried out through projects under the MET Programme, with the meteorological officers of Lima and Mexico as coordinators, and as managers representatives of the States, who will be elected during the discussion of Agenda Item 6.

2.7 In this regard, the Meeting could agree that WAFS implementation could be carried out under the methodology of a project of GREPECAS MET Programme and consider the following draft decision:

DRAFT

DECISION 11/XX

WAFS IMPLEMENTATION

That WAFS implementation is carried out under the methodology of a Project of GREPECAS MET Programme.

3. Action required

3.1 The Meeting is invited to:

- a) take note of the contents of this working paper and its Appendices A and B;
- b) consider the approval of the Draft Decision included in paragraph 2.6; and
- c) agree on other actions as necessary.

APPENDIX A

SIXTH MEETING**WORLD AREA FORECAST SYSTEM OPERATIONS GROUP
Dakar, Senegal, 21 to 25 March 2011)****EXECUTIVE SUMMARY¹****1. INTRODUCTION**

1.1 The sixth meeting of the World Area Forecast System Operations Group (WAFSOPSG/6) was held in the Western and Central African (WACAF) Regional Office, Dakar, 21 to 25 March 2011. The meeting was attended by twenty one experts from ten States and three international organizations (the Agency for Air Navigation Safety in Africa and Madagascar (ASECNA), the International Air Transport Association (IATA) and the World Meteorological Organization (WMO)).

1.2 The Chairman, Mr. Dorinel Visoiu, presided over the meeting throughout its duration.

2. FOLLOW-UP OF WAFSOPSG/5 CONCLUSIONS

2.1 With regard to the follow-up of the conclusions, the group noted that action had been completed on all the issues except for Conclusion 5/11. Apart from the icing forecast guidance produced in gridded format by the world area forecast centres (WAFC) for use in flight planning for extended range operations by twin-engined aeroplanes (ETOPS), action on this task remains outstanding. Progress on this outstanding issue was dependent on changes of the visualization which would be addressed by the group (Decision 6/1).

3. REVIEW OF ICAO PROVISIONS RELATED TO WAFS

3.1 Under this agenda item, the group reviewed the regional procedures related to world area forecast system (WAFS) and proposed amendments to improve their clarity (Conclusion 6/2).

3.2 The group also reviewed and endorsed the draft Amendment 76 to Annex 3 - *Meteorological Service for International Air Navigation* (Conclusion 6.3) which would:

- a) enable the provision of concatenated route-specific wind/temperature forecasts;
- b) introduce additional wind and temperature forecasts for FL 410 (175 hPa) prepared by the world area forecast centres (WAFC);
- c) introduce additional geopotential altitude forecasts for FL 270 (350 hPa) and FL 410 (175 hPa) prepared by the WAFCs;
- d) render operational the WAFS gridded significant weather (SIGWX) forecasts for CB clouds, icing and turbulence; and
- e) enable the alignment of SIGWX charts during back-up operations between WAFCs.

¹The full report is available at the following website: www.icao.int/anb/wafsopsg

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4. OPERATION OF THE WAFS

4.1 The group took note of the WAFS management report which had been prepared by the WAFC Provider States and placed on the WAFSOPSG website. The group reviewed the management report, noted its content and expressed satisfaction with the scope of information provided.

4.2 Concerning the Internet-based services, the group tasked the Secretariat, in coordination with the WAFC Provider States, to clearly specify the criteria for the access to the Internet-based services (SADIS FTP/WIFS/Secure SADIS FTP) for the Asia Pacific Region, in particular for those States under both the ISCS and SADIS satellite footprints, in light of the global coverage of the public Internet (Conclusion 6/4).

4.3 With regard to WAFS performance indicators, it was agreed that the WAFC Provider States will study the feasibility of the provision of additional performance indicators in addition to the four currently used regarding timeliness and completeness of the BUFR and GRIB datasets (Conclusion 6.5).

4.4 With regard to the WAFS forecasts in chart form, the group noted that the WAFCs had identified instances where the latitude and longitude coordinates used to define the corner points on WAFS SIGWX forecasts in chart form were different to those published in Annex 3, and in some instances different amongst the charts. To support back-up operations in an efficient manner, the group agreed that it was necessary to amend the referred coordinates in Annex 3 (Conclusion 6/6).

4.5 With regard to the WAFS SIGWX forecasts in the BUFR and GRIB code forms and in the PNG chart form, the group established an ad-hoc working group to consider re-transmission policies to support WAFCs efforts to comply with QMS principles (Conclusion 6/7).

4.6 With regard to the request by the Twenty-First Meeting of the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG/21) for further guidance regarding specific actions to be undertaken by meteorological service providers and WAFS end users upon reception of WAFS administrative messages related to the corrections of SIGWX forecasts, the group agreed that the Secretariat, in coordination with IATA, IFALPA and the WAFC Provider States, would prepare such guidance for review by the WAFSOPSG/7 Meeting (Conclusion 6/8).

4.7 The group reviewed a study, prepared by the Secretariat (ANC Minutes 182-8), on the desirability, from an operational and cost point of view, of the issuance of additional FL 410 gridded forecasts and terrain-induced turbulence. In this regard, the group agreed that the provision of such forecasts would be included in Amendment 76 to Annex 3 (Conclusion 6/9). With regard to terrain-induced turbulence, the group agreed that it will be included in the WAFCs gridded clear air turbulence (CAT) forecasts from April 2011.

4.8 The group noted that due to technical constraints on satellite bandwidth (i.e. SADIS 2G) forecast in the GRIB1 and GRIB2 code forms should not be transmitted simultaneously. In this regard, the group agreed to prioritize the provision of GRIB2 forecasts over those in the GRIB1 code form (Conclusion 6/10).

4.9 With regard to a proposal by IFALPA to re-introduce in Annex 3 a requirement for surface fronts, as an element to be included in WAFS SIGWX forecasts, the group agreed to establish an ad-hoc working group to consider the rationale of the proposal, the need for harmonization between

- C3 -

WAFCS, its cost impacts and compatibility with the WAFS long-term plan to fully automate the production of WAFS forecasts (Conclusion 6/11).

5. DEVELOPMENT OF THE WAFS

5.1 Concerning guidance and training for States and WAFS users on the intended use of new gridded WAFS forecasts for CB clouds, icing and turbulence, the group concurred that the development of such training should be deferred until visualization standards for these elements had been finalized. However, to support the operational use of the new gridded WAFS forecasts, the group agreed to develop guidance on their interpretation (Conclusion 6/12). In addition it was agreed that the WAFS Provider States would review the training requirements for the new gridded WAFS forecasts for CB clouds, icing and turbulence in light of the development of the guidance on their interpretation (Conclusion 6/13). The group also reviewed draft guidance on icing forecasts produced in gridded format by the WAFCS for use in flight planning for extended range operations by turbine-engine aeroplanes (ETOPS). The group endorsed the use of the gridded WAFS forecast of maximum icing potential as operationally acceptable for ETOPS flight planning (Decision 6/14).

5.2 Concerning the fine tuning of gridded WAFS forecasts, the group agreed to pursue their improvement and harmonization by conducting routine verification to establish their quality in different parts of the world. (Conclusion 6/15).

5.3 With regard to the visualization of gridded WAFS forecasts, the group noted the continued need for receiving information presented similar to the existing SIGWX charts and agreed that the IATA Member should develop a concept of operations which would include requirements for the provision of probabilistic forecasts of icing and turbulence expressed in terms of indices (Conclusion 6/16). The group further agreed that for the time being, the WAFS Provider States should continue with the provision of WAFS SIGWX forecast in the current formats (BUFR code and PNG chart forms (Decision 6/17).

5.4 Considering the improvements in the quality of the gridded WAFS forecasts for CB clouds, icing and turbulence the group agreed that these forecast should be considered now fully operational (Conclusion 6/18).

5.5 Based on the expected importance of WAFS forecasts for global air traffic management (ATM), the group agreed that the WAFS Provider States should provide an assessment on the WAFS support required for the integration of information within the global ATM operational concept (Conclusion 6/19).

6. LONG-TERM PLANNING OF THE WAFS IMPLEMENTATION

6.1 The group reviewed the WAFS 5-year plan (2011-2015) to take into account the latest developments. In this regard it was agreed to render it simpler by retaining only major milestones (Decision 6/20).

6.2 The group endorsed its work programme (Decision 6/21).

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APPENDIX / APÉNDICE B**WIFS OPERATIONAL FOCAL POINTS/
PUNTOS FOCALES OPERACIONALES DEL WIFS**

Updated October 2011 /Actualizada Octubre 2011

Note. - This list is kept up-to-date by the ICAO Secretariat based on the input from States
Nota. - Esta lista será actualizada por la Secretaría de la OACI con base en la información suministrada por los Estados

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Nota: El AERMETSG consideró necesario incluir la información de contacto de los Oficiales Regionales MET de las Oficinas de la OACI de Lima y México, con el fin de que sean incluidos en la lista de destinatarios que recibirá la información sobre las mejoras del WIFS.

Note: The AERMETSG considered necessary to include the contact information of the ICAO Lima and Mexico MET Regional Officers in order to be included in the list of addressees that will receive the information on WIFS improvements.