International Civil Aviation Organization

NINTH MEETING OF THE COMMUNICATIONS/NAVIGATION/SURVEILLANCE AND METEOROLOGY SUB-GROUP OF APANPIRG (CNS/MET SG/9)

Bangkok, Thailand, 11–15 July 2005

Agenda Item 8: Implementation of WAFS

EXECUTIVE SUMMARY OF WAFSOPSG/2 MEETING

(Presented by Secretariat)

SUMMARY

The paper presents attached the Executive Summary of the report of the 2nd meeting of the WAFSOPSG held in Bangkok from 8 to 11 March 2005.

SECOND MEETING

WAFS OPERATIONS GROUP

(Bangkok, Thailand, 8 to 11 March 2005)

EXECUTIVE SUMMARY[1]

1. INTRODUCTION

1.1 The second meeting of the World Area Forecast System Operations Group (WAFSOPSG/2), held in the ICAO Asia/Pacific (ASIA/PAC) Regional Office, Bangkok, Thailand, 8 to 11 March 2005, was attended by 23 experts from nine States, the Agency for Air Navigation Safety in Africa and Madagascar (ASECNA), the International Air Transport Association (IATA), International Federation of Air Line Pilots' Associations (IFALPA) and the World Meteorological Organization (WMO).

1.2 Mr. D. Visoiu, Chairman of the WAFSOPSG presided over the meeting throughout its duration. Dr. O. M. Turpeinen, from ICAO Headquarters, Montreal, was Secretary of the meeting and he was assisted by Mr. D. Ivanov, the Regional Officer, Meteorology from the ASIA/PAC Office.

2. Follow-up of WAFSOPSG/1 conclusions

2.1 The group reviewed the follow-up action taken in response to twenty-five conclusions formulated by the WAFSOPSG/1 and agreed that action could be considered completed on all the issues except for Conclusions 1/13, 1/15 and 1/27 which were restated under Agenda Item 6 (Decision 2/1 refers).

3. Review of ICAO provisions related to WAFS

3.1 Under this agenda item, the group reviewed the regional procedures contained in the air navigation plans (ANP)/facilities and services implementation documents (FASID)and proposed amendments, which would render them compatible with Annex 3 — *Meteorological Service for International Air Navigation* provisions. The amended procedures would be referred to the ICAO Regional Offices concerned for processing. (Conclusion 2/2 refers).

3.2 Furthermore, the group reviewed a draft Amendment 74 to Annex 3, developed by the Secretariat, in coordination with WMO, in response to the relevant conclusions formulated by the WAFSOPSG/1 Meeting. The amendment goes beyond the issues customarily dealt with by the group since the action called for by the WAFSOPSG Conclusion 1/1 necessitated a complete revision of Chapter 9 and Appendix 8 of Annex 3 . The group endorsed this amendment which would simplify the provisions and was therefore expected to improve the readability of Annex 3 (Conclusion 2/3 refers).

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[1] The full report is available in English at the following open Web site: www.icao.int/anb/WAFSOPSG

4. Operation of the WAFS

4.1 The group reviewed the management report prepared by the world area forecast centre (WAFC) Provider States, noted its content and expressed satisfaction with the scope of information provided. In this context, the group called for the WAFC Provider States to establish a tracking system displaying on the WAFSOPSG website the status of the implementation of operational changes to the WAFS (Conclusion 2/4 refers).

4.2 With regard to the possibility of developing an International Satellite Communications System (ISCS) User Guide, called for by the CAR/SAM Regional Planning and Implementation Group (GREPECAS) (Conclusion 12/55 refers), the group agreed that WAFC Washington should develop a guide similar to the *SADIS User Guide*, in time for the WAFSOPSG/3 Meeting (Conclusion 2/5 refers).

4.3 Concerning guidance on back-up procedures at the WAFCs, included in Annex 3, Attachment C, the group considered that, in view of its dynamic nature, the three-year amendment cycle involved in any Annex 3 material was too infrequent and agreed that Attachment C to Annex 3 should be deleted; only a reference to the WAFSOPSG website containing the up-to-date back-up procedures should be retained in Annex 3 (Conclusion 2/6 refers). In this context, the group also agreed that WAFC London should establish a bulletin monitoring facility to monitor the operation of the ISCS broadcast, on a real-time basis, in order to be able to provide an effective back-up service to the ISCS broadcast, when necessary (Conclusion 2/7 refers).

4.4 The group addressed the harmonization of the WAFS forecasts and agreed that, with regard to the depiction of the vertical depth of the jetstream, WMO should be invited to amend the model charts in Appendix 1 to Annex 3 to include only one jet depth information group per jetstream maximum and to change the depiction of the jet depth, currently expressed in terms of differences in flight levels, to flight levels (Conclusion 2/8 refers). It was also agreed that, in response to Conclusion 15/34 of the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG), the WAFC London should amend the *Guidelines for representing WAFS significant weather (SIGWX) data in BUFR* requiring that the WAFS visualisation software should automatically generate compliant SIGWX charts from the BUFR code for the standard ICAO areas and bring the amended guidelines to the attention of software vendors (Conclusion 2/9 refers). With regard to coinciding tropical cyclone, volcano and/or radiation events, the group endorsed a new plotting scheme, for inclusion in Annex 3, which would give the highest priority to volcanic ash, followed by radiation events and tropical cyclones (Conclusion 2/10 refers). The order of priority was based on an informal consultation with IATA.

4.5 When addressing the development of WAFS output performance indicators, the group concurred that the WAFC London Provider States, in coordination with WAFC Washington, should implement, on a trial basis, the performance indicators related to the root-mean-square vector wind and temperature errors for 24-hour forecasts at FL 340 for selected areas, and availability (in percentage) of BUFR and GRIB data at the WAFCs. This information would be provided to ICAO, on a quarterly basis using monthly statistics, for inclusion in the WAFSOPSG website. The WAFC Provider States would also prepare a report, in coordination with the IATA Member of the WAFSOPSG, on these trials, for consideration by the WAFSOPSG/3 Meeting, in view of the future operational implementation of the WAFS output performance indicators (Conclusion 2/11 refers).

4.6 Concerning the availability of WAFS forecasts in chart form beyond 1 July 2005, the group concurred with the APANPIRG and the European Air Navigation Planning Group (EANPG), in that the issuance of SIGWX forecasts in T4 chart form should be continued, in parallel with the use of BUFR code form, for a limited period of time until 30 November 2006. The group also felt that ICAO Regional Offices should carry out a survey in May 2006 to verify the implementation of the reception and utilization of BUFR-coded SIGWX forecasts by States, and that the Secretariat should present the results of this consultation for consideration and future action by the WAFSOPSG/3 Meeting (Conclusion 2/12 refers). It was reasonable to expect that States and users would be able to purchase the necessary BUFR decoding software in time for the new cut-off date; if an additional extension were considered necessary, the WAFSOPSG/3 Meeting would still be in a position to consider prolonging the provision of SIGWX forecasts in chart form beyond 30 November 2006. Another proposal related to SIGWX forecasts in chart form was formulated by the group calling for the WAFC Provider States to provide, on a trial basis, WAFS SIGWX forecasts in chart form for the fixed ICAO areas of coverage using the industry standard Portable Network Graphics (PNG) graphical format or an equivalent industry standard, place these charts on the WAFS FTP server by 1 July 2005 and to report back to the WAFSOPSG/3 Meeting which would assess the desirability of continuing the provision of WAFS SIGWX forecasts in chart form using the PNG format or an equivalent industry standard (Conclusion 2/13 refers).

5. Development of the WAFS

5.1 When considering improvements in vertical resolution of WAFS forecasts, the group also addressed the issue of temporal resolution, in response to Conclusion 40/4 by the North Atlantic Systems Planning Group (NAT SPG). It was agreed that considerations should be generalized to encompass the improvements both in the temporal and spatial resolution of WAFS upper wind forecasts, and invited the WAFC Provider States to study the possibility of improving the temporal and spatial resolution of WAFS upper wind and other upper-air forecasts in the GRIB code form, in time of the WAFSOPSG/3 Meeting. It was expected that the impacts of adding two levels between FL 300 and 400 (e.g. FL 320 and 370), of improving the horizontal resolution to 60 km and of increasing the temporal resolution to 3 hours or less would be studied (Conclusion 2/14 refers).

5.2 The group underscored the importance of the development of an objective icing index which would harmonize icing information provided by the two WAFCs. It could also be used by meteorological watch offices to issue SIGMET in those States that use numerical weather prediction models. The group encouraged the WAFC Provider States to pursue work on this important issue and to present a progress report on the development of an objective icing index, in time of the WAFSOPSG/3 Meeting (Conclusion 2/15 refers). Concerning improved WAFS forecasts for icing and turbulence, the group agreed that the WAFC Provider States should continue work on the development of these forecasts based on a product description which also included convective clouds. It was agreed that the WAFC Provider States should carry out verification of the trial forecasts and report the results thereof back to the WAFSOPSG/3 Meeting (2006). It was further agreed that the development work should be progressed in view of its completion by the WAFSOPSG/4 Meeting (2008). This “road map” was expected to lead to the operational implementation of the improved forecasts for icing, turbulence and convective clouds as part of Amendment 75 to Annex 3 (November 2010) (Conclusion 2/16 refers) and these new products would replace the medium-level SIGWX forecasts (Decision 2/19 refers).

5.3 When addressing the needs of long-haul flights for SIGWX forecasts, the feasibility of amending the lead time of these forecasts was considered. The group felt that the development of new forecasts for icing, turbulence and convective clouds held the promise of providing airlines and other users with the information they required to plan for long-haul flights by the year 2010. However, to address the

shorter-term needs, it was agreed that the WAFCs should advance the lead time of issuance of the existing SIGWX products to 13 hours before their validity time. Furthermore, the WAFC Provider States were invited to consider the possibility of advancing the lead time further to 17 hours (Conclusions 2/17 and 2/18 refer).

5.4 In order to be able to introduce the new WAFS forecasts for icing, turbulence and convective clouds, it is necessary to migrate to the GRIB2 code form, which should be completed in time for Amendment 75 to Annex 3. The group agreed that, to ensure an orderly and timely migration to the GRIB2 code form within WAFS, the WAFC Provider States, in coordination with the WAFSOPSG Member from WMO, should develop a migration plan, in time for the WAFSOPSG/3 Meeting (Conclusion 2/20 refers).

5.5 Concerning the quality control of MET information in the automatic dependent surveillance (ADS) messages, the group reviewed the results of a feasibility study undertaken by WAFC London. Based thereon, it was agreed that the provision of feed-back to the operators concerned related to the quality of MET information included in the ADS messages was both feasible and desirable. Therefore, the group tasked the WAFC London Provider State, in coordination with the WAFC Washington Provider State and the WAFSOPSG Member from WMO, to develop appropriate software for quality control of the meteorological information data block of the ADS messages and contact procedures for feed-back with operators (Conclusion 2/21 refers). The resulting software could only become operational after the implementation of the new format of AIREP which would clearly identify ADS messages and which would include the registration number of the aircraft.

5.6 As a result of feedback from airlines operating in Hong Kong, China regarding new SIGWX charts generated from BUFR-coded WAFS forecasts, it was agreed that preference should be given to the letters of the cities over labels and text boxes with the understanding that the meteorological phenomena would continue to maintain the highest priority at all times as far as the display was concerned; the *Guidelines for presenting WAFS SIGWX data in BUFR* concerning the depiction of aerodrome on SIGWX charts would be amended accordingly (Conclusion 2/22 refers).

6. Future work programme

6.1 The group reviewed the work programme and proposed additional changes based on the discussions under Agenda Items 5 and 6 (Conclusion 2/23 refers).

7. Any other business

7.1 The group considered a proposal by the WAFC London Provider State to organize an international SADIS seminar to bring SADIS stakeholders (users, software suppliers, SADIS Second-Generation (2G) hardware suppliers, and service providers) together. As this event would also be of interest to ISCS users, it was considered appropriate that the issue was addressed at the WAFSOPSG Meeting. It was agreed that the event should be organized, in coordination with ICAO and WMO, at the ICAO European and North Atlantic Office. The seminar should last one and a half days. To maximise participation and to minimise travel costs, it was agreed that the event should take place between the sixteenth meeting of the METG of the EANPG and the WAFSOPSG/3 Meeting (Conclusion 2/23 refers).

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