

THIRD MEETING

WORLD AREA FORECAST SYSTEM OPERATIONS GROUP (Paris, France, 26 to 29 September 2006)

EXECUTIVE SUMMARY¹

1. INTRODUCTION

1.1 The third meeting of the World Area Forecast System Operations Group (WAFSOPSG/3) was held in the European/North Atlantic (EUR/NAT) Regional Office, Paris, 26 to 29 September 2006. The meeting was attended by twenty-eight experts from fourteen States and four international organizations (the Agency for the Safety of Aerial Navigation in Africa and Madagascar (ASECNA), the International Air Transport Association (IATA), the International Federation of Air Line Pilots' Associations (IFALPA) and the World Meteorological Organization (WMO)).

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

2. FOLLOW-UP OF WAFSOPSG/2 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 Conclusions 2/7 b), and 2/21, which were re-addressed under Agenda Items 5.2 and 6.6 (Decision 3/1 refers).

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 which would render them compatible with Annex 3 — *Meteorological Service for International Air Navigation* provisions by eliminating the formal requirement for significant weather (SIGWX) forecasts in T4 chart form. In view of the continuation of the provision of SIGWX forecasts in the PNG chart form (endorsed under Agenda Item 5), as a back-up, it was agreed that this should be reflected in a note to the regional procedures (Conclusion 3/2 refers).

3.2 Regarding Appendix 1 to Annex 3, the group endorsed proposals made by the world area forecast centre (W AFC) Provider States concerning, inter alia, the removal of thunderstorm symbols from the model charts and chart legends, and the systematic indication of limiting flight levels for jet-streams and tropopause heights (Conclusion 3/3 refers).

3.3 The group re-assessed the provision related to satellite broadcasts contained in Annex 10 — *Aeronautical Telecommunications* and agreed that it continued to be relevant in view of the essential role of the international satellite communications system (ISCS) and the satellite distribution system for information relating to air navigation (SADIS) broadcasts. The provision was proposed to be upgraded to a Standard, with an addition of a reference to the second important function of these broadcasts, i.e. the dissemination of OPMET data (Conclusion 3/4 refers).

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

3.4 Concerning the development of guidance on the use of fixed-time WAFS forecasts in flight documentation called for by Conclusion 16/42 of the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG), the group agreed that the development of such guidance by the Secretariat would be of assistance to States and users (Conclusion 3/5 refers).

4. OPERATION OF THE WAFS

4.1 The group took note of the WAFS management report which had been prepared by the WAFS 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 With regard to back-up procedures at the WAFCs, it was noted that the WAFS Provider States had re-assessed the need by WAFS London to establish a bulletin monitoring facility for supporting a back-up data service to the ISCS. The group concurred with the findings by the WAFS Provider States, i.e. there was no need to establish such a facility (Decision 3/6 refers).

4.3 Concerning the performance of the WAFS, the group reviewed the output performance indicators developed for this purpose and used during operational trials by the WAFS Provider States. It agreed that the indicators met the operational requirements and should therefore be implemented on a permanent basis (Conclusion 3/7 refers).

4.4 The group was pleased to note that the WAFS Washington Provider State had developed a draft International Satellite Communications System (ISCS) User Guide. It was noted that the WAFS Washington Provider State would make the ISCS User Guide available through its file server to all States and users under the ISCS 1/2 broadcast area. The group agreed that the ISCS User Guide should also be included in appropriate ICAO websites, similar to the SADIS User Guide. Regular updates to the ISCS User Guide would be prepared for consideration by future WAFSOPSG meetings (Decision 3/8 refers).

4.5 In order to assess the need for WAFS forecasts in chart form beyond 30 November 2006, the Secretariat had undertaken a survey on the implementation of BUFR-coded SIGWX forecasts by States through the Regional Offices. The results of the survey indicated that currently some 60 per cent of States (out of 72 which had replied) were in a position to receive BUFR-coded SIGWX forecasts and that by the end of 2006, the percentage was expected to rise to 79 per cent. The group reiterated the view that the use of the BUFR code form for SIGWX forecasts should remain the primary means of receiving SIGWX forecasts within WAFS since it was the only method compatible with the objective of the WAFS spelled out in Annex 3, 3.1. However, in view of the slower-than-expected pace of implementation, the group agreed that SIGWX forecasts in the PNG chart form should continue to be provided as a back-up to the BUFR-coded forecasts at least until 2010 (Conclusion 3/9 refers).

4.6 Concerning the dissemination of the analysis of the global forecasts to WAFS user States called for by Conclusion 13/19 of the CAR/SAM Regional Planning and Implementation Group (GREPECAS), the group concluded that the inclusion of such basic synoptic analyses in ICAO satellite broadcasts would not be appropriate since it would be in conflict with the *Working Arrangements between the International Civil Aviation Organization and the World Meteorological Organization* (Doc 7475) (Decision 3/10 refers).

5. DEVELOPMENT OF THE WAFS

5.1 The group addressed the possibility of improving the temporal and spatial resolutions of WAFS upper wind and other upper-air forecasts in the GRIB code form based on a study undertaken by

the WAFC Provider States. The results showed that while the costs of distributing 40-km horizontal resolution data over the satellite broadcast would be substantial, two additional vertical levels between FL 300 and FL 400, and forecasts with a temporal resolution of 3 hours could be provided at a reasonable cost and accommodated within the existing SADIS and ISCS broadcasts. Since the benefits of higher resolution data were not yet fully known, the group agreed that a further study should be undertaken in this area, before proposing amendments to Annex 3 provisions (Conclusion 3/11 refers).

5.2 Concerning the development of an objective icing index, the group noted the progress report by the WAFC Provider States. It dealt with the development of a metrics for the reporting and forecasting of icing which would link an icing intensity index to meteorological variables and which would be an aircraft-independent and objective measure of icing based on the rate at which icing accumulates on an airframe. Due to the close relation between the icing index and the development of improved WAFS forecasts for icing in the GRIB code form, it was agreed that future work related to the objective icing index should be undertaken in connection with the development of the improved forecasts for icing, turbulence and convective clouds (Decision 3/12 refers). Regarding the status of the development of such forecasts, the group noted that considerable progress had been made by the WAFC London Provider State. Trial forecasts were now being generated routinely four times per day; the new products were expected to be available soon through the SADIS FTP Service. The group agreed that the utility of the trial forecasts should be evaluated by users through a formal feedback mechanism. In order to promote the appropriate use of the new forecasts of icing, turbulence and convective clouds in the GRIB code form, it was considered desirable to convene regional training seminars and to develop appropriate guidance, to be made available to WAFS users through the WAFSOPSG website (Conclusion 3/13 refers).

5.3 The feasibility of advancing the time of issuance of SIGWX forecasts to meet the needs for long-haul flights was confirmed by investigations undertaken by the WAFC Provider States. It transpired that both WAFCs could issue high-level (SWH) and medium-level SIGWX (SWM) forecasts 17 and 16 hours before the validity time, respectively. The group agreed that the SIGWX forecasts for high levels (SWH) in the BUFR code form were the most time critical for flight planning of long-haul operations and agreed therefore that the lead time of these forecasts should be the longest (Conclusion 3/14 refers).

5.4 With regard to the migration to the GRIB 2 code form, it was considered that the replacement of the GRIB 1 code form by the GRIB 2 code form was essential since it would enable the operational implementation of new WAFS forecasts for icing, turbulence and convective clouds and would allow more data to be transmitted at a fixed bandwidth. To achieve this, the group agreed that a detailed implementation plan of the GRIB 2 code form should be elaborated (Conclusion 3/15 refers).

6. LONG-TERM PLANNING OF THE WAFS IMPLEMENTATION

6.1 In response to Conclusion 16/41 of the APANPIRG calling for the WAFSOPSG to consider the development of a long-term plan for the WAFS, the group concurred that such a plan would be warranted and that the WAFC Provider States should elaborate a concise roadmap covering a period of five years for the endorsement by the WAFSOPSG/4 Meeting (Conclusion 3/16 refers).

7. FUTURE WORK PROGRAMME

7.1 The group reviewed the work programme and proposed additional changes based on the discussions during the meeting (Decision 3/17).

8. **ANY OTHER BUSINESS**

8.1 The group considered that there would be a need to provide a correction to WAFS SIGWX forecasts in the BUFR code form, should an error be found following transmission of the product and that WMO standards should, in principle, be adopted for this purpose. Since the proposed change could have an impact on user software, the group felt that the WAFS Provider States should undertake a study to assess its implications on WAFS users (Conclusion 3/18 refers).

8.2 A proposal to join any two subsequent fixed time WAFS charts of the same product and level to provide information relevant to long-haul flights was considered in order to eliminate the need to provide more than one WAFS forecast for the same product and level for different fixed valid time. This approach was not currently envisaged in Annex 3 and the inclusion of such provisions in Annex 3 could have considerable financial implications for States and users, since substantial modifications to visualization software would have to be made. Therefore, the group considered that this proposal should be subject to a careful assessment by an ad-hoc group (Conclusion 3/19 refers).

— END —