

Appendix N - Proposal for Amendment of PART VI (MET) of the EUR ANP

(paragraph 4.6.22 (a) refers)

BASIC ANP - PART VI - METEOROLOGY (MET)**INTRODUCTION**

1. This part of the EUR Basic Air Navigation Plan contains elements of the existing planning system and introduces the basic planning principles, operational requirements and planning criteria related to Meteorological Service for International Air Navigation (MET) as developed for the EUR Region.
2. As a complement to the Statement of Basic Operational Requirements and Planning Criteria (BORPC) set out in Part I, Part VI constitutes the stable regional provisions considered to be the minimum necessary for effective planning of MET facilities and services. A detailed description/list of the facilities and/or services to be provided by States in order to fulfil the requirements of the Basic ANP is contained in the EUR Facilities and Services Implementation Document (FASID). During the transition and pending full implementation of the future CNS/ATM systems, it is expected that the existing requirements will gradually be supplemented and/or replaced by the new CNS/ATM related requirements. Further, it is expected that some elements of the CNS/ATM systems will be subject to amendment, as necessary, on the basis of experience gained in their implementation.
3. The Standards, Recommended Practices and Procedures to be applied are contained in the following ICAO documents:
 - a) Annex 3 — Meteorological Service for International Air Navigation, and
 - b) *European (EUR) Regional Supplementary Procedures (Doc 7030), Part 4 – Meteorology.*
4. European Air Navigation Planning Group (EANPG) conclusions and ICAO operations groups conclusions shown in brackets below a heading indicate the origin of all paragraphs following that heading. EANPG conclusions and ICAO operations groups conclusions shown in brackets below a paragraph indicate the origin of that particular paragraph.

METEOROLOGICAL SERVICE REQUIRED AT AERODROMES AND REQUIREMENTS FOR METEOROLOGICAL WATCH OFFICES

(FASID Tables MET 1A and MET 1B)

[EANPG conclusion 46/26, 49/14]

5. The service to be provided at the international aerodromes listed in the Appendix to Part III of the Basic ANP is set out in FASID Table MET 1A.
6. The service to be provided for flight information regions (FIR), upper flight information regions (UIR) and search and rescue regions (SRRs) is set out in FASID Table MET 1B.
7. Meteorological service should be provided on a 24-hour basis, except as otherwise agreed between the meteorological authorities, the air traffic service authorities and the operators concerned.

Note. Details of the service provided should be indicated in Aeronautical Information Publications, in accordance with the provisions in Annex 15.

METEOROLOGICAL OBSERVATIONS AND REPORTS

[EANPG conclusion 51/32]

(FASID Table MET 1C)

8. Half-hourly routine observations should be made at all RS (international scheduled air transport, regular use) and AS (international scheduled air transport, alternate use) aerodromes, as required in respect of operational needs, and reports issued as METAR and local reports together with local special reports. Half-hourly METAR should also be issued for any additional aerodromes, which are included in the EUR VHF VOLMET broadcast system.

Note: - Provisions for the EUR VHF VOLMET broadcast system are detailed in FASID Part VII - ATS.

9. At aerodromes with limited hours of operation, the issuance of METAR should commence at least two hours prior to the aerodrome resuming operations, or as agreed between the meteorological authority and the operators concerned, to meet pre-flight and in-flight planning requirements for flights due to arrive at the aerodrome as soon as it is opened for use.

10. When required, information on the state of the runway should be included as supplementary information in all METAR and SPECI.

11. States under whose jurisdiction off-shore structure or other points of significance in support of off-shore helicopter operations are located should, in consultation with the appropriate operators, establish or arrange for the establishment of aeronautical meteorological observing stations at suitable locations. Information of the state of the sea and sea surface temperature should be included in all METAR and SPECI from those stations. The offshore structures providing information on the state of the sea and/or sea surface temperature in METAR and SPECI are listed in FASID Table MET 1C.

FORECASTS

12. Routine TAF should be issued as required in respect of operational needs for designated aerodromes as specified in FASID Table MET 1A.

13. The period of validity of the routine TAF should be either 9 hours or 24 or 30 hours. The period of validity is specified in FASID Table MET 1A.

[EANPG Conclusion 49/43b]

14. The periods of validity for 9-hour TAF should commence at 00, 03, 06, 09, 12, 15, 18 and 21 UTC and for 24 and 30-hour TAF at 00, 06, 12 and 18 UTC. The periods of validity should be determined based on the types of operations (e.g., regional or inter-regional (long-haul) flights) and taking into account the hours of operation of the aerodrome, as agreed between the meteorological authorities and the operators concerned.

[EANPG Conclusion 49/43b]

15. The scheduled international exchange of TAF should be completed 30 minutes before commencement of the period of validity.

[EANPG Conclusion 49/43b]

16. The forecast maximum and minimum temperature together with their respective dates and times of occurrence should be included in the 24 and 30-hour TAF for certain aerodromes as agreed between the meteorological authority and the operators concerned.

17. Trend forecasts should be issued for designated aerodromes specified in FASID Table MET-1A.

18. When the area forecast for low-level flights is issued as a GAMET, the following regional procedures should be followed:

- a) the term "widespread" should be used to indicate a spatial coverage of more than 75 per cent of the area concerned;
- b) "mountain obscuration – MT OBSC" should be used to indicate widespread mountain obscuration. Depiction should also include additional information on cloud type causing obscuration together with, where feasible, height of cloud base and top above mean sea level (AMSL).
- c) section II of the GAMET area forecast should include the following information in addition to the provisions in Annex 3:

- 1) short description of general weather situation in addition to the description of pressure centres and fronts;
- 2) information about mean surface wind ~~speed~~ also for values less than 15m/s (30kt);
- 3) upper wind and temperature in mountainous areas for altitude 15000ft, or higher if necessary;

Note.— Upper wind and temperature information should have a horizontal resolution no more than 500 km;

- 4) information about widespread surface visibility of 5000 m or more together with the weather phenomena (if any) causing a reduction of visibility and inserted between the upper wind and cloud information; and
- 5) state of the sea and sea surface temperature;

Note.— States under whose jurisdiction off-shore structure or other points of significance in support of off-shore helicopter operations are located should, in consultation with the appropriate operators, establish or arrange for the information on the state of the sea and sea surface temperature to be included in all low-level area forecasts.

- 6) an outlook concerning expected hazardous weather phenomena during the following validity period;

- d) the visibility and cloud base information in section II may be complemented in the form of visibility/cloud base categories (paragraphs 18 and 19 refer).

[EANPG conclusion 51/32]

19. Where combined cloud/visibility information is provided, this information should be in the form of visibility/cloud base categories and should be supplied for well-defined sub-areas and/or route segments. The boundaries of sub-areas and/or route segments for which forecasts for low-level flights are provided in condensed form should be published in the AIP. For each sub-area and/or route segment, the reference height to which the cloud-base information refers, should be specified.

20. Where visibility/cloud-base categories are used in low-level forecasts these should be as follows:

- O visibility equal to or more than 8 km and cloud-base equal to or higher than 600 m (2 000 ft);

- D visibility equal to or more than 5 km but less than 8 km with cloud-base 300 m (1000 ft) or higher, or cloud-base equal to 300 m (1000 ft) or higher but less than 600 m (2 000 ft) with visibility equal to or more than 8 km;
- M visibility equal to or more than 1.5 km but less than 5 km with cloud-base equal to or higher than 150 m (500 ft), or cloud-base equal to or higher than 150 m (500 ft) but less than 300 m (1000 ft) with visibility equal to or more than 5 km;
- X visibility less than 1.5 km and/or cloud-base less than 150 m (500 ft).

The visibility/cloud-base category indicated in the forecast for a sub-area should refer to the prevailing conditions in the sub-area concerned. Cloud information should refer to clouds with a coverage of BKN or OVC.

21. Area forecasts for low-level flights exchanged between meteorological offices in support of the issuance of AIRMET information should be prepared as GAMET or low-level SIGWX chart.

22. Low-level forecasts should be amended where and when required. The amended forecast should also be supplied on automatic briefing facilities where these are available. In the case that the AIRMET/low-level forecast concept is not fully implemented, the criteria for amendments should as a minimum include the weather phenomena hazardous for low-level flights, which constitute the criteria for the issue of AIRMET.

23. When low-level forecast is issued as a SIGWX chart or as a wind and temperature (W+T) chart, it should, as appropriate, include the information as described in paragraph 19. The graphical part of a SIGWX chart should depict the weather situation at the beginning of validity period. Significant changes of initial weather parameters should be depicted together with time intervals determining duration of expected changes.

SIGMET AND AIRMET INFORMATION

(FASID Tables MET 1B, MET 3B and MET 3C)

[EANPG conclusion 49/14]

24. Volcanic ash advisory centres (VAACs) London, Tokyo and Toulouse have been designated to prepare advisory information. FASID Table MET 3B set out the areas of responsibility of the VAACs and, the MWOs and ACCs to which the advisory information should be sent.

[IAVWOPSG Conclusion 3/2]

25. In order for the VAACs to initiate the monitoring of volcanic ash from satellite data and the forecast of volcanic ash trajectories, MWOs should notify the relevant VAAC immediately on receipt of information that a volcanic eruption has occurred or volcanic ash has been observed in the FIR for which they are responsible. In particular, any special air-reports of pre-eruption volcanic activity, a volcanic eruption or volcanic ash cloud, received by MWOs should be transmitted without delay to the VAAC concerned.

[IAVWOPSG Conclusion 1/1]

26. Selected State volcano observatories have been designated for direct notification of significant pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash in the atmosphere to their corresponding ACC, MWO and VAAC. FASID Table MET 3C sets out the selected State volcano observatories and the VAACs, MWOs and ACCs to which the notification should be sent by the observatories.

[IAVWOPSG Conclusion 2/2]

27. IRMET information should be issued by a MWO if agreed on between users and the meteorological authority concerned. FASID Table MET 1B sets out the responsible MWOs and the areas for which AIRMET information should be provided.

[EANPG conclusion 46/26].

INFORMATION FOR OPERATORS AND FLIGHT CREW MEMBERS

[EANPG conclusion 51/32]

28. As far as possible, English should be among the languages used in meteorological briefing and consultation.

29. Meteorological information for pre-flight planning by operators of helicopters flying to offshore structures should include data covering the layers from sea level to FL 100. Particular mention should be made of the expected surface visibility, the amount, type (where available), base and tops of cloud below FL 100, sea state and sea surface temperature, mean sea level pressure and the occurrence or expected occurrence of turbulence and icing.

30. The low-level forecast prepared in support of AIRMET information should be part of pre-flight documentation for low-level flights. The documentation prepared should include GAMET or low-level SIGWX forecasts and appropriate wind and temperature (W+T) forecasts for the entire route.

31. Where feasible and cost-effective, automated MET/AIS systems should be used for the combined provision of MET and AIS information for pre-flight planning, flight documentation, briefing and consultation.

Note.— Further guidance is provided in the ICAO EUR Handbook "Harmonized Access to AIS and MET Services related to pre-flight planning" (ICAO EUR Doc 010)

EXCHANGE OF OPERATIONAL METEOROLOGICAL INFORMATION

(FASID Tables MET 2A)

[EANPG conclusion 46/26, 49/14]

32. The international OPMET data banks at Brussels, Toulouse and Vienna have been designated to serve States in the EUR Region.

33. The operational meteorological information as specified in FASID Table MET 2A **(derived from SADIS User Guide Annex 1)** should be disseminated through the European Regional OPMET Data Exchange (EUR RODEX) system, which should ensure distribution to the EUR States, to the international EUR OPMET data banks and to the uplink stations of the international satellite communication system (ISCS) and the satellite distribution system for information relating to air navigation (SADIS). The designated Regional OPMET Centres (ROC) in London, Toulouse and Vienna should ensure the availability in the EUR Region of all required OPMET data issued outside the EUR Region.

Note:— Further guidance concerning the EUR OPMET exchange procedures and EUR OPMET data banks is provided in the ICAO "EUR OPMET Data Management Handbook" (ICAO EUR Doc 018)

WORLD AREA FORECAST SYSTEM (WAFS)

(FASID Table MET 5)

34. FASID Table MET 5 sets out the EUR Region requirements for WAFS forecasts to be provided by WAFC London.

[WAFSOPSG Conclusion 1/2]

35. For back-up purposes, each WAFC should have the capability to produce WAFS forecasts for all the required areas of coverage.

[WAFSOPSG Conclusion 5/2]

36. WAFS forecasts should be made available by WAFC London using the satellite distribution system for information relating to air navigation (SADIS) or using the SADIS FTP service.

[WAFSOPSG Conclusion 6/2]

Editorial Note. – Insert “or using the SADIS FTP service” in the corresponding CNS procedure contained in Part IV of the ANP.

37. Each State should make the necessary arrangements to receive and make full use of operational WAFS forecasts made available by WAFC London. The lists of the authorized users of the SADIS services in the EUR Region and location of the operational VSATs and Internet-based services are available from the following website:

[www/icao.int/anb/sadisopsg](http://www.icao.int/anb/sadisopsg) (click: “Status of implementation”) for SADIS

[WAFSOPSG Conclusion 6/2]

COMMUNICATIONS REQUIREMENTS – SATELLITE DISTRIBUTION

[EANPG conclusion 46/26]

38. The satellite distribution system for information relating to air navigation (SADIS) is implemented and operated as a component of the AFS. The SADIS should provide an international point-to-multipoint service on a 24-hour basis. The SADIS should be operated so as to enable States and end-users as appropriate to obtain required WAFS products. In addition, it should provide a collection and dissemination service for OPMET information in alphanumeric form where required within the area of coverage of the system. The system should be capable of expansion to carry additional aeronautical meteorological products when required.

39. The following link design parameters are required:

- a) *Frequency*: C-band.
- b) *Capacity*: The service should provide adequate capacity to transport global GRIB-coded grid point forecast data, global BUFR-coded SIGWX forecasts, as required, and alphanumeric OPMET data to all users in a timely manner.
- c) *Bit error rate*: Better than 1 in 10^7 .
- d) *Redundancy*: Provisions are required for protection against extended outages.
- e) *Error correction*: Forward error correction.
- f) *Availability*: 99.95 per cent, exclusive of solar transit outages.

40. Day-to-day operations of SADIS are controlled and managed by WAFC London. The multi-regional SADIS Operations Group (SADISOPSG) is established to manage and further develop SADIS.

Note: Terms of reference of the SADISOPSG, as well as, detailed information about the group’s activities is available on: <http://www.icao.int/anb/sadisopsg>.

41. The United Kingdom is designated to implement and operate the SADIS service in accordance with the provisions given in paragraphs 37 to 39.
