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EUR SIGMET AND AIRMET GUIDE

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RECORD OF AMENDMENTS AND CORRIGENDA

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PART 1. INTRODUCTION

1.1 The main purpose of this document is to provide guidance for standardization and harmonization of the procedures and formats related to the occurrence or expected occurrence of specified hazardous en-route weather conditions which may affect the safety of aircraft and low-level aircraft operations, known as SIGMET and AIRMET information. The guidance is complementary to the Annex 3 standards and recommended practices (SARPS) regarding SIGMET and AIRMET, and to the SIGMET and AIRMET related provisions of the EUR ANP/FASID (ICAO Doc 7754).

1.2 In respect of SIGMET messages, this document only includes guidance concerning SIGMET messages for significant en-route weather phenomena and volcanic ash SIGMET messages. The third type, tropical cyclone SIGMET messages, are excluded as this phenomenon does not occur in the EUR Region.

1.3 ICAO provisions concerning the issuance and dissemination of SIGMET information are contained in:

- Annex 3 - *Meteorological Service for International Air Navigation*, Part I, Chapter 3, paragraphs 3.4 – 3.7, Chapter 7, paragraphs 7.1 – 7.2, and Part II, Appendix 6.
- EUR Basic ANP, Part VI and FASID Table MET 1B , MET 2B and MET 3B.
- Annex 11 - *Air Traffic Services*, Chapter 4, paragraph 4.2.1 and Chapter 7, paragraph 7.1.
- PANS – *Air Traffic Management*, Doc 4444, Chapter 9, paragraph 9.1.3.2.
- EUR Regional Supplementary Procedures, Doc 7030, Part 1, paragraph 2.2.

Additional guidance on the SIGMET procedures is contained in the *Manual of Aeronautical Meteorological Practice*, Doc 8896, and *Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services*, Doc 9377.

1.4 AIRMET information is issued by a meteorological watch office (MWO) concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof.

1.5 ICAO provisions concerning the issuance and dissemination of AIRMET information are contained in:

- Annex 3 - *Meteorological Service for International Air Navigation*, Part I, Chapter 3 paragraph 3.4, Chapter 6 paragraph 6.5, Chapter 7 paragraphs 7.2, and Part II, Appendix 6.
- EUR Basic ANP, Part VI and FASID Table MET 1B, MET 2B and MET 3B.
- Annex 11 - *Air Traffic Services*, Chapter 4 paragraph 4.2.1.
- PANS – *Air Traffic Management*, Doc 4444, Chapter 9 paragraph 9.1.3.2.

Additional guidance on the AIRMET procedures is contained in the *Manual of Aeronautical Meteorological Practice*, Doc 8896, and *Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services*, Doc 9377.

1.6 The SIGMET and AIRMET Guide is intended mainly to assist the meteorological watch offices (MWOs) in the EUR Region in preparing and disseminating SIGMET and AIRMET information. It provides

detailed information on the format of SIGMET and AIRMET messages as specified by Annex 3. The explanations of the format are accompanied by a number of examples based on region-specific meteorological phenomena. The guide also provides information regarding the necessary coordination between the MWOs, the ATS units and the pilots, and their respective responsibilities.

1.7 This document is prepared by the ICAO EUR/NAT Regional Office and is published on the website at URL: http://www.paris.icao.int/documents_open/subcategory.php?id=48. It should be reviewed and updated regularly in order to be kept in line with the ICAO SARPs and regional procedures. This Second Edition to EUR Doc 014 takes into account changes to SIGMET and AIRMET provisions resulting from the applicability of Amendment 75 to Annex 3 on 18 November 2010.

PART 2. RESPONSIBILITIES AND COORDINATION

2.1 General

2.1.1 SIGMET and AIRMET are warning information, hence they are of highest priority among other types of OPMET information provided to aviation users. The primary purpose of SIGMET and AIRMET is for in-flight service, which requires timely transmission of the SIGMET and, where available, AIRMET messages to pilots by the ATS units and/or through VOLMET and D-VOLMET.

2.1.2 Airlines are the main users of the SIGMET and AIRMET information. Pilots contribute to the effectiveness of the SIGMET and AIRMET service through issuance of (routine and special) air-reports to the ATS units. Such air-reports are among the most valuable sources of information for the Meteorological Watch Offices (MWO) in the preparation of SIGMET and AIRMET. The ATS units receiving special air-reports should forward them to the associated MWOs without delay as well as to WAFCs if received by data-link communications. The ATS units receiving routine air-reports by data link communication should forward them to the associated MWOs and WAFCs without delay.

2.1.3 As seen from the above, the SIGMET and AIRMET service involves MET, ATS and pilots. In order for the SIGMET and AIRMET service to be effective, close coordination between these parties, as well as mutual understanding of the needs and responsibilities, should be maintained.

2.1.4 For the special case of SIGMET for volcanic ash, the MWOs are provided with advisories from the volcanic ash advisory centres (VAAC) designated in the Regional ANP.

2.1.5 SIGMET is also used for the flight planning and in-flight monitoring. This requires global dissemination of SIGMET through the EUR Regional OPMET Centres (ROCs) that will forward the information to the international OPMET data banks and World Area Forecast Centres (WAFC) London and Washington for global distribution (ISCS/WIFS and SADIS/SADIS FTP/Secure SADIS FTP) and for use in the preparation of the significant weather (SIGWX) forecasts.

2.1.6 AIRMET is used for flight planning and in-flight monitoring also. Such messages should be disseminated to meteorological watch offices in adjacent flight information regions and to other meteorological offices, as agreed by the meteorological authorities concerned. In addition, AIRMET messages should be transmitted to the EUR Regional OPMET Centres (ROCs) that will forward the information to international OPMET data banks and WAFC London and WAFC Washington for global distribution (ISCS/WIFS and SADIS/SADIS FTP/Secure SADIS FTP), and to the centres designated by regional air navigation agreement for the operation of aeronautical fixed service satellite distribution systems, in accordance with regional air navigation agreement.

2.1.7 In the next paragraphs, the main responsibilities and coordination links between MET, ATS and pilots are described.

2.2 Meteorological Watch Office - responsibilities and procedures related to SIGMET and AIRMET

2.2.1 SIGMET and AIRMET information is issued by the MWO in order to provide timely warning for the occurrence or expected occurrence of specified en-route weather phenomena, affecting the safety of the flight operations in the MWO's area of responsibility (AOR). SIGMET and AIRMET provide information concerning the location, extent, intensity and expected evolution of the specified phenomena.

2.2.2 Information about the provision of SIGMET and AIRMET service, including details on the designated MWO(s), should be included in the State's Aeronautical Information Publication (AIP) as specified in Annex 15, Aeronautical Information Service, Appendix 1, GEN 3.5.8.

2.2.3 All designated MWOs in the EUR Region are listed in the FASID Table MET 1B of the EUR FASID.

2.2.4 If, for some reason, a MWO is not able to meet its obligations, including the provision of SIGMET and AIRMET, arrangements have to be made by the meteorological authority concerned, that another MWO takes over these responsibilities for a certain period of time. Such delegation of responsibilities has to be notified by a NOTAM and a letter to the ICAO Regional Office.

2.2.5 Since the MWO is normally not a separate administrative unit, but part of the functions of an aerodrome meteorological office or another meteorological office, the meteorological authority concerned should ensure that the MWO obligations and responsibilities are clearly defined and assigned to the unit designated to serve as MWO. The corresponding operational procedures have to be established and the meteorological staff should be trained accordingly.

2.2.6 In preparing SIGMET and AIRMET information, the MWOs have to strictly follow the format determined in Annex 3 (detailed format description is provided in Appendix 6, Table A6-1 of Annex 3). SIGMET and AIRMET should be issued only for those weather phenomena listed in Annex 3 and only when specified criteria for intensity and spatial extent are met.

Note: MWOs should not issue SIGMET and AIRMET for weather phenomena of lower intensity or of such transient nature or smaller scale, which do not affect significantly the flight safety, and their transmission to users may lead to unnecessary precautionary measures.

2.2.7 The MWOs should be adequately equipped in order to identify, analyse and forecast (to the extent required) those phenomena for which SIGMET and AIRMET is required. The MWO should make use of all available sources of information, such as special air-reports, information from meteorological satellites and weather radars, numerical predictions, etc.

2.2.8 On receipt of a special air-report from the associated ACC or FIC, the MWO should:

a) issue the corresponding SIGMET and AIRMET information; or

b) send the special air-report for on-ward transmission in case that the issuance of SIGMET information is not warranted (e.g., the phenomenon reported is of transient nature).

2.2.9 Appropriate telecommunication means have to be available at the MWO in order to ensure timely dissemination of SIGMET [and, subject to regional air navigation agreement, AIRMET] according to a dissemination scheme, which includes transmission to:

- local ATS users;
- aeronautical MET offices within the AOR;
- other MWOs concerned (it should be ensured that SIGMET [AIRMET] is sent to all MWOs whose AORs are, at least partly, within the 925 km (500 NM) range from the reported phenomenon);
- centres designated for transmission of VOLMET or D-VOLMET where SIGMET [AIRMET] is required for transmission;
- the responsible Regional OPMET Centres (ROC) and international EUR OPMET data banks (it should be arranged through the EUR RODEX scheme, that SIGMET [AIRMET] are sent to the designated OPMET data banks in other ICAO Regions, to the WAFCs and to the uplink stations of SADIS and ISCS/WIFS);

- responsible VAAC (if applicable); and

2.2.10 In issuing SIGMET for volcanic ash, the MWOs should take into consideration the advisory information received from the responsible VAAC. In addition to the information received from the VAAC, the MWOs may use available complementary information from other reliable sources. In such a case the responsibility for this additional information would lie completely on the MWO concerned.

2.3 Responsibilities of ATS units

2.3.1 Close coordination should be established between the MWO and the corresponding ATS unit (ACC or FIC), including arrangements in order to ensure:

- receipt without delay and display at the relevant ATS units of SIGMET [AIRMET] issued by the associated MWO;

- receipt and display at the ATS unit of SIGMET [AIRMET] issued by MWOs responsible for the neighbouring FIRs /ACCs if these SIGMET [AIRMET] are required according to paragraph 2.3.4 below ; and

- transmission without delay of special air-reports received through voice communication to the associated MWO.

2.3.2 SIGMET [AIRMET] information should be transmitted to aircraft with the least possible delay on the initiative of the responsible ATS unit, by the preferred method of direct transmission followed by acknowledgement or by a general call when the number of aircraft would render the preferred method impracticable.

2.3.3 SIGMET [AIRMET] information passed to aircraft should cover a portion of the route up to a flying time of two hours ahead of the aircraft.

2.3.4 Air traffic controllers should ascertain whether any of the currently valid SIGMETs may affect any of the aircraft they are controlling, either within or outside their AOR up to a flying time of two hours ahead of the current position of the aircraft. If this is the case, the controllers should transmit the SIGMET promptly to the aircraft-in-flight likely to be affected.

2.3.5 The ATS units have to transmit to the concerned aircraft-in-flight the special air reports received, for which SIGMET has not been issued. Once a SIGMET for the weather phenomenon reported in the special air report is made available, this obligation of the ATS unit expires.

2.4 Responsibilities of pilots

2.4.1 Timely issuance of SIGMET [AIRMET] information is largely dependent on the prompt receipt by MWOs of special air reports. That is why, it is essential that pilots prepare and transmit such reports to the ATS units whenever any of the specified en-route conditions are encountered or observed.

2.4.2 It should be emphasized that, even when automatic dependent surveillance (ADS) is being used for routine air reports, pilots should continue to make special air reports.

2.5 Coordination between MWOs and the VAACs

2.5.1 Amongst the phenomena for which SIGMET information is required, the volcanic ash clouds are of particular importance for the planning of long-haul flights.

2.5.2 Since the identification, analysis and forecasting of volcanic ash require considerable technical and human resources, normally not available at each MWO, a number of Volcanic Ash Advisory Centres (VAACs) have been designated to provided VA advisories to the users and assist MWOs in the preparation of the SIGMET for volcanic ash. Close coordination should be established between the MWO and the responsible VAAC.

2.5.3 Information regarding the VAACs serving the EUR Region with their corresponding areas of responsibility and lists of MWOs to which advisories are to be sent is provided in the EUR FASID Table MET 3B.

PART 3. RULES FOR PREPARATION OF SIGMET INFORMATION

3.1 General

3.1.1 SIGMET information is prepared in abbreviated plain language using approved ICAO abbreviations, a limited number of non-abbreviated words, geographical names and numerical values of self-explanatory nature. All abbreviations and words to be used in SIGMET are given in **Appendix A.**

3.1.2 The increasing use of automated systems for handling MET information by the MET offices and the aviation users makes it essential that all types of OPMET information, including SIGMET, are prepared and transmitted in the prescribed standardized formats. Therefore, the structure and format of the SIGMET message, as specified in Annex 3, Part II, Appendix 6, should be followed strictly by the MWOs. Appendix 6 provides detailed information regarding the content and order of elements in the SIGMET message.

3.1.3 SIGMET is intended for transmission to aircraft in flight either by ATC or by VOLMET or D-VOLMET or the aircraft operators. Therefore, SIGMET messages should be kept short and clear, without additional descriptive text other than that prescribed in Annex 3.

3.1.4 After issuing a SIGMET, the MWO maintain watch over the evolution of the phenomenon for which the SIGMET has been issued and issue a new updated SIGMET when necessary. VA SIGMETs have to be updated at least every 6 hours.

3.1.5 SIGMETs should be promptly cancelled when the phenomenon is no longer occurring or no longer expected to occur in the MWO's area of responsibility. The SIGMET is understood to cancel itself automatically at the end of its validity period. If the phenomenon persists a new SIGMET message for a further period of validity has to be issued.

3.2 Types of SIGMET

3.2.1 Although Annex 3 provides one general SIGMET format, which encompasses all weather phenomena, it is convenient when describing the structure and format of the messages to distinguish between three types of SIGMET, as follows:

- SIGMET for en-route weather phenomena other than volcanic ash or tropical cyclones (this includes: TS, TURB, ICE, MTW, DS and SS); this SIGMET will be referred as WS SIGMET;
- SIGMET for volcanic ash (VA SIGMET) (to be referred also as WV SIGMET)
- SIGMET for tropical cyclones (TC SIGMET), not described in this document.

3.2.2 The type of SIGMET can be identified through the data type designator included in the WMO abbreviated heading of the SIGMET message, as explained in the following paragraphs.

3.3 Structure of the SIGMET message

3.3.1 A SIGMET message consists of:

- *WMO heading* – all SIGMETs are preceded by an appropriate WMO heading;
- *First line*, containing location indicators of the relevant ATS unit and MWO, sequential number and period of validity;
- *Meteorological part*, containing meteorological information concerning the phenomenon for which the SIGMET is issued;

3.3.2 The first two parts of the SIGMET message are common for all types of SIGMETs. The content and format of the meteorological part is different depending on the type of SIGMET. Therefore, in the following paragraphs, the meteorological part of the WS and WV types of SIGMET is described separately.

3.4 Format of SIGMET

Note: In the following text, square brackets - [ ] - are used to indicate an optional or conditional element, and angled brackets - < > - for symbolic representation of a variable element, which in the real SIGMETs accepts concrete numerical values.

3.4.1 WMO Header

$T_1T_2A_1A_2$ii CCCC YYGGgg

3.4.1.1 The group **$T_1T_2A_1A_2$ii** is the bulletin identification for the SIGMET message. It is constructed in the following way:

T_1T_2	Data type designator	**WS** – for SIGMET **WC** – for SIGMET for tropical cyclone (not required in the EUR Region) **WV** – for SIGMET for volcanic ash
A_1A_2	Country or territory designators	Assigned according to Table C1, Part II of Manual on the Global Telecommunication System, Vol I – Global Aspects (WMO - No. 386)
ii	Bulletin number	Assigned on national level according to paragraph 2.3.2.2, Part II of Manual on the Global Telecommunication System, Vol I – Global Aspects (WMO - No. 386)

3.4.1.2 **CCCC** is the ICAO location indicator of the communication centre disseminating the message (could be the same as the MWO).

3.4.1.3 **YYGGgg** is the date/time group, where YY is the date and GGgg is the time in hours and minutes UTC, of the transmission of the SIGMET (normally this is the time assigned by the AFTN centre which disseminates the message).

3.4.1.4 It is recommended to assign a unique WMO header for each SIGMET bulletin per FIR, CTA or UIR. The distinction between different SIGMET bulletins issued by the State's MWOs should be through the respective data type designator (T_1T_2) and bulletin number (ii), as for example in Germany:

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"WSDL31 EDZF" and "WVDL31 EDZF" for EDGG LANGEN FIR
"WSDL31 EDZH" and "WVDL31 EDZH" for EDWW BREMEN FIR
"WSDL31 EDZM" and "WVDL31 EDZM" for EDMM MUNCHEN FIR
"WSDL32 EDZF" and "WVDL32 EDZF" for EDUU RHEIN UIR
"WSDL32 EDZH" and "WVDL32 EDZH" for EDYY HANNOVER UIR
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Examples:

WSDL32 EDZF 121200
WVJP01 RJTD 010230
WCNG21 AYPY 100600

*Note: A table with WMO SIGMET headers used by the EUR Meteorological Watch Offices is included in **Appendix B***

3.4.2 First line of SIGMET

CCCC SIGMET [nn]n VALID YYGGgg/YYGGgg CCCC-

3.4.2.1 The meaning of the groups in the first line of the SIGMET is as follows:

CCCC	ICAO location indicator of the ATS unit serving the FIR or CTA to which the SIGMET refers
SIGMET	Message identifier
[nn]n	Daily sequence number (see paragraph 3.4.2.2)
VALID	Period of validity indicator
YYGGgg/YYGGgg	Validity period of the SIGMET given by date/time group of the beginning and date/time group of the end of the period (see paragraph 3.4.2.3)
CCCC-	ICAO location indicator of the MWO originating the message and – (hyphen, without space, to separate the preamble from the text)

3.4.2.2 The numbering of SIGMETs should start every day at 0001 UTC. The sequence number should consist of up to three symbols and may be a combination of letters and numbers, such as:

- 1, 2, …
- 01, 02, …
- A01, A02, …

Examples:

EDWW SIGMET 3 VALID 121100/121500 EDZH-
VHHK SIGMET A04 VALID 202230/210230 VHHH-

Note 1: No other combinations should be used, like "CHARLIE 05" or "NR7".

Note 2: Correct numbering of SIGMET is very important since the number is used for reference in the communication between ATC and pilots and in VOLMET and D-VOLMET.

3.4.2.3 The following has to be considered when determining the validity period:

- the period of validity of WS SIGMET should not exceed 4 hours;
- the period of validity of VA SIGMET should be up to 6 hours;
- in case of a SIGMET for an observed phenomenon the filing time (date/time group in the WMO heading) should be same or close to the date/time group indicating the start of the SIGMET validity period;
- when the SIGMET is issued for an expected phenomenon:
    - the beginning of validity period should be the time of expected commencement (occurrence) of the phenomenon;
    - the lead time (the time of issuance of the SIGMET) should be not more than 4 hours before the start of validity period (i.e., expected time of occurrence of the phenomenon); and
    - for VA SIGMETs the lead time may be up to 12 hours.

3.4.2.4 The period of validity is the period during which the SIGMET is valid for transmission to aircraft in flight.

Examples:

1. SIGMET for an observed phenomenon:

WSIE31 EIDB 241120
EIDB SIGMET 3 VALID 241120/241500 EINN-

2. SIGMET for a forecast phenomenon (expected time of occurrence 1530)

WSSG31 WSSC 251130
WSSA SIGMET 1 VALID 251530/251930 WSSM-

3.4.3 *Format of the meteorological part of SIGMET messages for weather phenomena other than VA*

3.4.3.1 The meteorological part of a SIGMET consists of eight elements as shown in the table below.

Start of the second line of the message

1	2	3	4	5	6
Location indicator of the FIR/UIR or CTA	Name of the FIR or UIR or FIR/UIR or CTA	Description of the phenomenon	Observed or forecast	Location	Level
<CCCC>	<name> FIR [UIR, FIR/UIR, CTA]	<Phenomenon>	OBS [AT <GGggZ>] or FCST [AT <GGggZ>]	Geographical location of the phenomenon given by coordinates, or geographical objects, or location indicators	FL<nnn/nnn> or [SFC/]FL<nnn> or [SFC/]<nnnn>M or [SFC/]<nnnn>FT or TOP FL<nnn> or [TOP] ABV FL<nnn>

7	8
Movement or expected movement	Changes in intensity
MOV <direction, speed> KMH[KT], or STNR	INTSF or WKN or NC

3.4.3.1.1 Location indicator and name of the FIR, UIR, FIR/UIR or CTA

location indicator <name> FIR
or
location indicator <name> UIR
or
location indictor <name> FIR/UIR
or
location indicator <name> CTA

Example:

EDBB BERLIN FIR

3.4.3.1.2 Phenomenon

The description of the phenomenon consists of a qualifier and a phenomenon abbreviation. SIGMET shall be issued only for the following phenomena (with only one phenomenon in each SIGMET):

at cruising levels (irrespective of altitude):

- thunderstorms – if they are OBSC, EMBD, FRQ or SQL with or without hail;
- turbulence – only SEV
- icing – only SEV with or without FZRA
- mountain waves – only SEV
- dust storm – only HVY
- sand storm – only HVY
- radioactive cloud – RDOACT CLD

The appropriate abbreviations and combinations thereof, and their meaning are given in **Appendix C**.

3.4.3.1.3 Indication if the phenomenon is observed or forecast

OBS [AT <GGggZ>]
or
FCST [AT <GGggZ>]

The indication whether the information is observed or forecast is given by the abbreviations OBS and FCST. OBS and FCST are optionally followed by a time group in the form AT GGggZ, where GGgg is the time of the observation or forecast in hours and minutes UTC. If the exact time of the observation or forecast is not known the time is not included.

Examples:

OBS AT 0140Z
FCST AT 0200Z

3.4.3.1.4 Location of the phenomenon

The location of the phenomenon is given with reference to geographical coordinates (latitude and longitude) or with reference to geographical features well known internationally. The MWOs should try to be as specific as possible in reporting the location of the phenomenon and, at the same time, to avoid overwhelming geographical information, which may be difficult to process or perceive.

The following is the most preferred way to describe the location of the phenomenon for ingestion into automated systems used by the airlines for flight planning and in-flight decision making:

- Indication of a part of the FIR with reference to longitude and latitude as a closed line:

WI<Nnn[nn]or<Snn[nn]><Wnnn[nn]>or<Ennn[nn]>-
<Nnn[nn]>or<Snn[nn]><Wnnn[nn]>or<Ennn[nn]>-
<Nnn[nn]>or<Snn[nn]><Wnnn[nn]>or<Ennn[nn]>

The following are additional ways to describe the location of the phenomenon and should only be used if the area of phenomena is unknown or the SIGMET is based on a special pilot air report:

- Indication of a part of the FIR with reference to latitude:

  N OF or S OF <Nnn[nn]> or <Snn[nn]>

- Indication of a part of the FIR with reference to a longitude:
  E OF or W OF <Ennn[nn]> or <Wnnn[nn]>

- Indication of a part of the FIR with reference to a latitude and longitude:

  any combination of the above two cases;

- with reference to a location with ICAO location indicator CCCC (normally, this should be the case in a SIGMET based on a special air-report in which the reported phenomenon is given with reference to an airport or another object with an ICAO location indicator CCCC), or

- with reference to geographical features well known internationally.

More details on reporting of the location of the phenomenon are given in Appendix 6 to Annex 3 and in **Appendix E** to this Guide.

3.4.3.1.5 Flight level or altitude and extent

[SFC/]FL<nnn>
or FL<nnn/nnn>
or [SFC/]<nnnn>M
or [SFC/]<nnnn>FT
or TOP FL<nnn>
or [TOP] ABV FL<nnn>

The location or extent of the phenomenon in the vertical is given by one or more of the above abbreviations, as follows:

- reporting of single level – **FL<nnn>**;
- reporting of a layer – **SFC/FL<nnn>, SFC/<nnnn>M, or SFC/<nnnn>FT**, where the lower level is the surface and the upper level is a flight level, an altitude in metres or an altitude in feet respectively;
- reporting a layer using flight levels – **FL<nnn/nnn>**, where the lower flight level is reported first; this is used particularly in reporting turbulence and icing;
- reporting the top of a phenomenon with reference to one flight level – TOP FL<nnn>
- reporting a phenomenon with reference to one flight level and the abbreviation ABV – **ABV FL<nnn>**
- reporting the top of a phenomenon with reference to one flight level and the abbreviation ABV – **TOP ABV FL<nnn>**

Examples:

EMBD TS … TOP ABV FL340
SEV TURB … FL180/210
SEV ICE … SFC/FL150
SEV MTW … FL090

3.4.3.1.6 Movement

MOV <direction> <speed> KMH[KT]
or
STNR

Direction of movement is given with reference to one of the sixteen points of compass. Speed of movement is given in KMH or KT. The abbreviation STNR is used if no significant movement is expected.

Examples:

MOV NW 30KMH
MOV NNW 30KMH
MOV E 25KT

3.4.3.1.7 Expected changes in intensity

The expected evolution of the phenomenon's intensity is indicated by one of the following abbreviations:

INTSF – intensifying
WKN – weakening
NC – no change

3.4.4 Structure of the meteorological part of VA SIGMET

3.4.4.1 The general structure of the meteorological part of the SIGMET message is given in the table below:

Start of the second line of the message

1	2	3			4
Location indicator of the FIR/UIR or CTA	Name of the FIR or UIR or FIR/UIR or CTA		Volcano		Volcanic ash cloud
			Name	Position	
<CCCC>	<name> FIR [UIR, FIR/UIR, CTA]		[VA ERUPTION] [MT <name>]	[PSN <position>]	VA CLD OBS [AT <GGggZ>] or VA CLD FCST [AT <GGggZ>]

5			6
Extent of the cloud			Expected movement
Location	Vertical	Horizontal	
Location (referring to latitude and longitude (in degrees and minutes) or locations or geographic features well known internationally)	FL<nnn/nnn>	[APRX <nnn>KM BY <nnn>KM] or [APRX <nnn>NM BY <nnn>NM]	MOV <direction> <speed>

7	
Volcanic ash cloud forecast at the end of the period of validity	
FCST time	Position
FCST <GGggZ>	VA CLD APRX <lat,lon> - <lat,lon> - …

3.4.4.2 Name and location of the volcano and/or indicator for VA cloud

[VA ERUPTION] [MT <name>] [PSN <lat,lon>] VA CLD
or
VA CLD

3.4.4.2.1 The description of the volcano injecting volcanic ash consists of the following elements:

- the term **VA ERUPTION** is used when the SIGMET is issued for a known volcanic eruption;

- geographical/location information:
  i. if the name of the volcano is known, it is given by the abbreviation **MT** – mountain, followed by the name, e.g. **MT RABAUL**
  ii. the position of the volcano is given by the abbreviation **PSN**, followed by the latitude and longitude in degrees and minutes, e.g. **PSN N3520 E09040**

- this section of the message ends with the abbreviation **VA CLD** – volcanic ash cloud.

3.4.4.2.2 If the FIR is affected by a VA cloud with no information about the volcanic eruption which generated the cloud, only the abbreviation **VA CLD** shall be included in the SIGMET.

3.4.4.3 Time of VA CLD observation or forecast

VA CLD OBS [AT <GGgg>Z]
or
VA CLD FCST [AT <GGgg>Z]

The time of observation is taken from the source of the observation – satellite image, special air- report, report from a ground volcano logical station, etc. If the VA cloud is not yet observed over the FIR but the volcanic ash advisory received from the responsible VAAC indicates that the cloud is affecting the FIR after certain time, SIGMET shall be issued, and the abbreviation VA CLD FCST [AT <GGgg>Z] shall be used.

Examples:

VA CLD OBS AT 0100Z
VA CLD FCST AT 1200Z

3.4.4.4 Location, level and extent of the volcanic ash cloud

<P1(lat,lon) - P2(lat,lon) - … > FL<nnn/nnn> [APRX <nnn>KM BY <nnn>KM]
or
<P1(lat,lon) - P2(lat,lon) - … > FL<nnn/nnn> [APRX <nnn>NM BY <nnn>NM]

<P1(lat,lon) – P2(lat,lon) - … >	Approximate description of the VA cloud by a number of points given with their geographical coordinates[1]; the points shall be separated by hyphen
FL<nnn/nnn>	The layer of the atmosphere where the VA cloud is situated, given by two flight levels from the lower to the upper boundary of the cloud
[APRX <nnn>KM BY <nnn>KM] or [APRX <nnn>NM BY <nnn>NM]	Approximate horizontal extent of the VA cloud in KM or NM

[1] The format of geographical coordinates reporting in SIGMET is given in **Appendix D.**

If the VA cloud spreads over more than one FIR, separate SIGMETs shall be issued by all MWOs whose FIRs are affected. In such a case, the description of the volcanic ash cloud by each MWO should encompass the part of the cloud, which lies over the MWO's area of responsibility. The MWOs should try to keep the description of the volcanic ash clouds consistent by checking the SIGMET messages received from the neighbouring MWOs.

Examples:

N0100 E09530 – N1215 E11045 FL100/180 APRX 10KM BY 50KM
S0530 E09300 – N0100 E09530 – N1215 E11045 FL 150/210

3.4.4.5 Movement or expected movement of the VA cloud

MOV <direction> <speed>

The direction of movement is given by the abbreviation **MOV** – moving, followed by one of the sixteen points of compass: N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW, NNW. The speed of movement is given in KMH or KT.

Examples:

MOV E 35 KMH
MOV SSW 20 KT
STNR

3.4.4.6 Forecast position of the VA cloud at the end of the validity period of the SIGMET message

FCST <GGggZ> VA CLD APRX <P1(lat,lon) - P2(lat,lon) - … >

3.4.4.6.1 The **GGggZ** group should indicate the end of the validity period given in the first line of the SIGMET message. The description of the expected position of the volcanic ash cloud is given by a number of points forming a simplified geometrical approximation of the cloud.

3.4.4.6.2 In describing the VA cloud, up to four different layers can be used, indicated by flight levels in the form FL<nnn/nnn>. The use of more than one level is necessary when the wind direction changes with height which causes the VA cloud to spread into different directions at different heights.

3.4.5 ***Cancellation of SIGMET***

3.4.5.1 If, during the validity period of a SIGMET, the phenomenon for which the SIGMET had been issued is no longer occurring or no longer expected, this SIGMET should be cancelled by the issuing MWO.

Note – If it is expected (or confirmed from observation) that the phenomenon for which SIGMET had been issued will change (or has changed) significantly from the original message content, the current SIGMET message should be cancelled and a new SIGMET message should be issued as appropriate.

The cancellation is done by issuing the same type of SIGMET with the following structure:

- WMO heading with the same data type designator;
- first line, including the next sequence number followed by a new validity period, and
- second line, which contains the location indicator and name of the FIR or CTA, the combination CNL SIGMET, followed by the sequential number of the original SIGMET and its validity period.

Examples:

1. Cancellation of a SIGWX SIGMET with the following first line

WSXY31 YUSO 101200
YUDD SIGMET 5 VALID 101200/101600 YUSO-
YUDD SHANLON FIR …

Cancellation SIGMET:

WSXY31 YUSO 101430
YUDD SIGMET 6 VALID 101430/101600 YUSO-
YUDD SHANLON FIR CNL SIGMET 5 101200/101600=

2. Cancellation of a VA SIGMET

WVXY31 YUSO 131518
YUDD SIGMET 03 VALID 131515/132115 YUSO-
YUDD SHANLON FIR …

Cancellation SIGMET:

WVXY31 YUSO 132000
YUDD SIGMET 04 VALID 132000/132115 YUSO-
YUDD SHANLON FIR CNL SIGMET 03 13151500/132115 VA MOV TO YUDO FIR=

PART 4. RULES FOR PREPARATION OF AIRMET INFORMATION

Note: This guidance is developed as a follow-up of EANPG Conclusion 49/42.

4.1 General

4.1.1 AIRMET should be issued by MWOs in accordance with the regional air navigation agreement. According to the EUR Air Navigation Plan, Volume I, Basic ANP (Doc 7754), AIRMET information should be issued by a MWO if agreed on between the users and the meteorological authority concerned. The requirement for the issuance of AIRMET should be reflected in FASID Table MET 1B. The decision of a meteorological authority for issuance of AIRMET should also be based on an assessment of the density of air traffic operating below flight level 100 (or flight level 150 or higher in mountainous areas).

4.1.2 AIRMET is issued for a flight information region (FIR); where necessary, the FIR should be divided in sub-areas and separate AIRMET issued for each sub-area.

4.1.3 When issuing AIRMET information, MWOs should pay attention on the related products, such as, GAMET and SIGMET, in order to avoid duplication.

4.1.4 AIRMET information is prepared in abbreviated plain language using approved ICAO abbreviations, a limited number of non-abbreviated words, geographical names and numerical values of self-explanatory nature. All abbreviations and words to be used in AIRMET are given in **Appendix A.**

4.1.5 The increasing use of automated systems for handling MET information by the MET offices and the aviation users makes it essential that all types of OPMET information, including AIRMET, are prepared and transmitted in the prescribed standardized formats. Therefore, the structure and format of the AIRMET message, as specified in Annex 3, Part II, Appendix 6, should be followed strictly by the MWOs. Annex 3 Appendix 6 Table A6-1 provides detailed information regarding the content and order of elements in the AIRMET message.

4.1.6 AIRMET messages should be kept short and clear, without additional descriptive text other than that prescribed in Annex 3.

4.1.7 After issuing an AIRMET, the MWO should maintain watch over the evolution of the phenomenon for which the AIRMET has been issued and issue a new updated AIRMET when necessary.

4.1.8 AIRMETs should be cancelled promptly when the phenomenon is no longer occurring or no longer expected to occur in the MWO's area of responsibility. The AIRMET is understood to cancel itself automatically at the end of its validity period. If the phenomenon persists a new AIRMET message for a further period of validity has to be issued.

4.2 Structure of the AIRMET message

4.2.1 An AIRMET message consists of:

- *WMO heading* – all AIRMETs are preceded by an appropriate WMO heading;
- *First line*, containing location indicators of the relevant ATS unit and MWO, sequential number and period of validity;
- *Meteorological part*, containing meteorological information concerning the phenomenon for which the AIRMET is issued.

4.3 Format of AIRMET

Note: In the following text, square brackets - [ ] - are used to indicate an optional or conditional element, and angled brackets - < > - for symbolic representation of a variable element, which in the real AIRMETs accepts concrete numerical values.

4.3.1 ***WMO Header***

$T_1T_2A_1A_2$ii CCCC YYGGgg

4.3.1.1 The group **$T_1T_2A_1A_2$ii** is the bulletin identification for the AIRMET message. It is constructed in the following way:

T_1T_2	Data type designator	**WA**
A_1A_2	Country or territory designators	Assigned according to Table C1, Part II of Manual on the Global Telecommunication System, Vol I – Global Aspects (WMO - No. 386)
ii	Bulletin number	Assigned on national level according to paragraph 2.3.2.2, Part II of Manual on the Global Telecommunication System, Vol I – Global Aspects (WMO - No. 386)

4.3.1.2 **CCCC** is the ICAO location indicator of the communication centre disseminating the message (could be the same as the MWO).

4.3.1.3 **YYGGgg** is the date/time group, where YY is the date and GGgg is the time in hours and minutes UTC, of the transmission of the AIRMET (normally this is the time assigned by the AFTN centre which disseminates the message).

4.3.1.4 A unique WMO header should be assigned for each AIRMET bulletin issued for an FIR, or part of an FIR. The distinction between different AIRMET bulletins issued by the State's MWOs should be through the bulletin number (ii) as, for example:

WABX31 EBBR 061752 *[Example from Belgium]*

WAPL31 EPWA 061534 *[Example from Poland]*

Note: A table with WMO SIGMET and AIRMET headers used by the EUR Meteorological Watch Offices is included in ***Appendix B***

4.3.2 ***First line of AIRMET***

CCCC AIRMET [nn]n VALID YYGGgg/YYGGgg CCCC-

4.3.2.1 The meaning of the groups in the first line of the AIRMET is as follows:

CCCC	ICAO location indicator of the ATS unit serving the FIR to which the AIRMET refers
AIRMET	Message identifier
[nn]n	Daily sequence number (see paragraph 3.4.2.2)
VALID	Period of validity indicator
YYGGgg/YYGGgg	Validity period of the AIRMET given by date/time group of the beginning and date/time group of the end of the period (see paragraph 3.4.2.3)
CCCC-	ICAO location indicator of the MWO originating the message and – (hyphen**,** without space, to separate the preamble from the text)

4.3.2.2 The numbering of the AIRMETs should start every day at 0001 UTC. The sequence number should consist of up to three symbols and may be a combination of letters and numbers, such as:

- 1, 2, …
- 01, 02, …
- A01, A02, …

Examples:

EDWW AIRMET 3 VALID 121100/121500 EDZH-

EPWW AIRMET 5 VALID 061535/061935 EPWA-

4.3.2.3 The following has to be considered when determining the validity period:

- the period of validity of AIRMET shall not exceed 4 hours;
- in case of a AIRMET for an observed phenomenon the filing time (date/time group in the WMO heading) should be same or close to the date/time group indicating the start of the AIRMET validity period;
- when the AIRMET is issued for an expected phenomenon:
    - the beginning of validity period should be the time of expected commencement (occurrence) of the phenomenon;
    - the lead time (the time of issuance of the AIRMET) should be not more than 4 hours before the start of validity period (i.e., expected time of occurrence of the phenomenon); and

4.3.2.4 The period of validity is the period during which the AIRMET is valid for transmission to aircraft in flight.

Examples:

1. AIRMET for an observed phenomenon:

WADL41 EDZF 070015
EDGG AIRMET 01 VALID 070015/070300 EDZF-
EDGG LANGEN FIR ISOL TS OBS N OF N49 TOP FL330 MOV E WKN=

2. AIRMET for a forecast phenomenon:

WASW41 LSSW 061758
LSAS AIRMET 5 VALID 061800/062100 LSZH-
LSAS SWITZERLAND FIR MOD TURB FCST ALPS SFC/FL160 STNR NC=

4.3.3 ***Format of the meteorological part of AIRMET messages***

4.3.3.1 The meteorological part of an AIRMET consists of eight elements as shown in the table below.

Start of the second line of the message

1	2	3	4	5	6
Location indicator of the FIR or CTA	Name of the FIR or CTA	Description of the phenomenon	Observed or forecast	Location	Level
<CCCC>	<name> FIR	<Phenomenon>	OBS [AT <GGggZ>] or FCST [AT <GGggZ>]	Geographical location of the phenomenon given by coordinates, or geographical objects, or location indicators	FL<nnn> or FL<nnn/nnn> or [SFC/]FL<nnn> or [SFC/]<nnnn>M or [SFC/]<nnnn>FT or TOP FL<nnn> or [TOP] ABV FL<nnn>

7	8
Movement or expected movement	Changes in intensity
MOV <direction, speed> KMH[KT], or STNR	INTSF or WKN or NC

4.3.3.1.1 Location indicator and name of the FIR

location indicator <name> FIR

Example:

EBBU BRUSSELS FIR

4.3.3.1.2 Phenomenon

The description of the phenomenon consists of a qualifier and a phenomenon abbreviation. AIRMET shall be issued only for the following phenomena (with only one phenomenon in each AIRMET):

at cruising levels below FL100 (FL150 or higher for mountainous areas, where necessary):

- surface wind speed
- surface visibility
- thunderstorms
- mountain obscuration
- cloud
- icing
- turbulence
- mountain wave

The appropriate abbreviations and combinations thereof, and their meaning are given in **Appendix D**.

4.3.3.1.3 Indication if the phenomenon is observed or forecast

OBS [AT <GGggZ>]
or
FCST [AT <GGggZ>]

The indication whether the information is observed or forecast is given by the abbreviations OBS and FCST. OBS and FCST are optionally followed by a time group in the form AT GGggZ, where GGgg is the time of the observation or forecast in hours and minutes UTC. If the exact time of the observation or forecast is not known, the time is not included.

Examples:

OBS AT 0140Z
FCST AT 0200Z

4.3.3.1.4 Location of the phenomenon

The location of the phenomenon is given with reference to geographical coordinates (latitude and longitude) or with reference to geographical features well known internationally. The MWOs should try to be as specific as possible in reporting the location of the phenomenon and, at the same time, to avoid overwhelming geographical information, which may be difficult to process or perceive.

The following is the most common way to describe the location of the phenomenon:

- Indication of a part of the FIR with reference to longitude and latitude as a closed line:

WI<Nnn[nn]>or<Snn[nn]><Wnnn[nn]>or<Ennn[nn]>-
<Nnn[nn]>or<Snn[nn]><Wnnn[nn]>or<Ennn[nn]>-
<Nnn[nn]>or<Snn[nn]><Wnnn[nn]>or<Ennn[nn]>

The following are additional ways to describe the location of the phenomenon and should be only used if the area of phenomena is unknown or the SIGMET is based on a special pilot air report:

-Indication of a part of the FIR with reference to latitude:

N OF or S OF <Nnn[nn]> or <Snn[nn]>

- Indication of a part of the FIR with reference to a longitude:

E OF or W OF <Ennn[nn]> or <Wnnn[nn]>

- Indication of a part of the FIR with reference to a latitude and longitude:

any combination of the above two cases;

- with reference to a location with ICAO location indicator CCCC (normally, this should be the case in a SIGMET based on a special air-report in which the reported phenomenon is given with reference to an airport or another object with an ICAO location indicator CCCC), or

- with reference to geographical features well known internationally.

More details on reporting of the location of the phenomenon are given in Appendix 6 to Annex 3 and in **Appendix E** to this Guide.

4.3.3.1.5 Flight level or altitude and extent

[SFC/]FL<nnn>
or FL<nnn/nnn>
or [SFC/]<nnnn>M
or [SFC/]<nnnn>FT
or TOP FL<nnn>
or [TOP] ABV FL<nnn>

The location or extent of the phenomenon in the vertical is given by one or more of the above abbreviations, as follows:

- reporting of single level – **FL<nnn>**;
- reporting of a layer – **SFC/FL<nnn>, SFC/<nnnn>M, or SFC/<nnnn>FT**, where the lower level is the surface and the upper level is a flight level, an altitude in metres or an altitude in feet respectively;
- reporting a layer using flight levels – **FL<nnn/nnn>**, where the lower flight level is reported first; this is used particularly in reporting turbulence and icing;
- reporting the top of a phenomenon with reference to one flight level – **TOP FL<nnn>**
- reporting a phenomenon with reference to one flight level and the abbreviation ABV – **ABV FL<nnn>**
- reporting the top of a phenomenon with reference to one flight level and the abbreviation ABV – **TOP ABV FL<nnn>**

Examples:

ISOL CB … TOP ABV FL100
MOD TURB … FL050/080
MOD ICE … SFC/FL090
MOD MTW … FL060

Note that the flight levels reported should be up to FL100 (FL150 or higher for mountainous areas, where necessary).

4.3.3.1.6 Movement

MOV <direction> <speed> KMH[KT]
or
STNR

Direction of movement is given with reference to one of the sixteen points of compass.
Speed of movement is given in KMH or KT. The abbreviation STNR is used if no significant movement is expected.

Examples:

MOV NW 30KMH
MOV NNW 30KMH
MOV E 25KT

4.3.3.1.7 Expected changes in intensity

The expected evolution of the phenomenon's intensity is indicated by one of the following abbreviations:

INTSF – intensifying
WKN – weakening
NC – no change

4.3.4 ***Cancellation of AIRMET***

4.3.4.1 If, during the validity period of an AIRMET, the phenomenon for which the AIRMET had been issued is no longer occurring or no longer expected, this AIRMET should be cancelled by the issuing MWO.

Note – If it is expected (or confirmed from observation) that the phenomenon for which AIRMET had been issued will change (or has changed) significantly from the original message content, the current AIRMET message should be cancelled and a new AIRMET message should be issued as appropriate.

The cancellation is done by issuing the same type of AIRMET with the following structure:

- WMO heading with the same data type designator;
- first line, including the next sequence number followed by a new validity period, and
- second line, which contains the location indicator and name of the FIR, the combination CNL AIRMET, followed by the sequential number of the original AIRMET and its validity period.

Examples:

Cancellation of AIRMET with the following first line:

WAXY31 YUSO 151520
YUDD AIRMET 1 VALID 151520/151800 YUSO-
YUDD SHANLON FIR …

Cancellation AIRMET:

WAXY31 YUSO 151430
YUDD AIRMET 2 VALID 151650/151800 YUSO-
YUDD SHANLON FIR CNL AIRMET 1 151520/151800=

APPENDIX A

List of the abbreviations and decode used in SIGMET and AIRMET

Abbreviation	Decode
ABV	Above
AIRMET	AIRMET Information
AND*	And
APRX	Approximate or approximately
AT	At *(followed by time)*
BKN	Broken
BR	Mist
BY*	By
CB	Cumulonimbus
CENTRE*	Centre *(used to indicate tropical cyclone centre)*
CLD	Cloud
CNL	Cancel *or* cancelled
CTA	Control area
DS	Duststorm
DU	Dust
DZ	Drizzle
E	East *or* eastern longitude
EMBD	Embedded in layer *(to indicate CB embedded in layers of other clouds)*
ENE	East-Northeast
ERUPTION*	Eruption *(used to indicate volcanic eruption)*
ESE	East-Southeast
FCST	Forecast
FG	Fog
FIR	Flight information region
FL	Flight level
FRQ	Frequent
FU	Smoke
FZRA	Freezing rain
GR	Hail
GS	Small hail and/or snow pellets
HVY	Heavy *(used to indicate intensity of weather phenomena)*
HZ	Haze
IC	Ice crystals
ICE	Icing
INTSF	Intensify *or* intensifying
ISOL	Isolated
KM	Kilometres
KMH	Kilometres per hour
KT	Knots
LINE	Line
MPS	Metres per second
MOD	Moderate *(used to indicate intensity of weather phenomena)*
MOV	Move *or* moving *or* movement
MT	Mountain
MTW	Mountain waves
N	North *or* northern latitude
NC	No change
NE	North-east
NM	Nautical miles

Abbreviation	Decode
NNE	North-Northeast
NNW	North-Northwest
NW	North-west
OBS	Observe *or* observed *or* observation
OBSC	Obscure *or* obscured *or* obscuring
OCNL	Occasional *or* occasionally
OF*	Of … *(place)*
OVC	Overcast
PL	Ice pellets
PO	Dust/sand whirls
PSN	Position
RA	Rain
RDOACT*	Radioactive
S	South *or* southern latitude
SA	Sand
SE	South-east
SEV	Severe *(used e.g. to qualify icing and turbulence reports)*
SG	Snow grains
SIGMET	Information concerning en-route weather phenomena which may affect the safety of aircraft operations
SN	Snow
SQ	Squalls
SQL	Squall line
SS	Sandstorm
SSE	South-Southeast
SSW	South-Southwest
STNR	Stationary
SW	South-west
TC	Tropical cyclone *(not required in the EUR Region)*
TCU	Towering Cumulus
TO	To … *(place)*
TOP	Cloud top
TS	Thunderstorm
TSGR	Thunderstorm with hail
TURB	Turbulence
UIR	Upper flight information region
VA	Volcanic ash
VALID*	Valid
VIS	Visibility
W	West *or* western longitude
WSPD	Wind speed
WI	Within
WID	Width
WNW	West-Northwest
WSW	West-Southwest
Z	Coordinated Universal Time *(used in meteorological messages)*

** not in the ICAO Doc 8400, ICAO Abbreviations and Codes*

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APPENDIX B

List of EUR SIGMET (WS, WV) and AIRMET (WA) headers

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
Albania	LATI	Tirana/Tirana	WSAB31 LATI			LATI	LATI	Tirana
Armenia	UGEE	Yerevan	WSEE31 UGEE			UGEZ	UGEZ	Yerevan
Austria	LOWW	Wien/Schwechat	WSOS31 LOWW	WVOS31 LOWW	WAOS41 LOWW	LOVV	LOVV	Wien
Azerbaijan	UBBB	Baku			WAAJ31 UBBB		UBBB	Baku/Heydar Aliyev
Belarus	UMMM	Minsk	WSBY31 UMMS			UMMV	UMMV	Minsk
Belgium	EBBR	Brussels/National	WSBX31 EBBR	WVBX31 EBBR	WABX31 EBBR	EBBU	EBBU	Brussels(ACC-FIC)
Bosnia And Herzegovina	LYBE	Beograd/Surcin	WSQB32 LYBM	WVQB32 LYBM	N/A	LYBA	LQSB	Sarajevo (E)
Bosnia And Herzegovina	LDZA	Zagreb/Pleso	WSQB31 LDZM	WVQB31 LDZM	N/A	LDZO	LQSB	Sarajevo (W)
Bulgaria	LBSF	Sofia/Vrajbedebna	WSBU31 LBSM	WVBU31 LBSM	N/A	LBSR	LBSR	Sofia
Croatia	LDZA	Zagreb/Pleso	WSRH31 LDZM	WVRH31 LDZM	WARH31 LDZM	LDZO	LDZO	Zagreb
Cyprus	LCLK	Larnaca/Larnaca	WSCY31 LCLK			LCCC	LCCC	Nicosia
Czech Republic	LKPW	Praha/Ruzyne	WSCZ31 LKPW	WVCZ31 LKPW	WACZ41 LKPW	LKAA	LKAA	Praha
Denmark	EKMI	Kobenhavn	WSDN31 EKCH	WVDN31 EKCH	N/A	EKDK	EKDK	Kobenhavn
Estonia	EEMH	Tallinn	WSEO31 EETN	WVEO31 EETN		EETT	EETT	Tallinn
Finland	EFHK	Helsinki-Vantaa	WSFI31 EFHK	WVFI31 EFHK		EFES	EFIN	Finland
France	LFML	Aix	WSFR34 LFPW	WVFR34 LFPW		LFMM	LFMM	Marseille
France	LFBD	Bordeaux	WSFR32 LFPW	WVFR32 LFPW		LFBB	LFBB	Bordeaux
France	LFPS	Paris	WSFR31 LFPW	WVFR31 LFPW		LFFF	LFFF	Paris
France	LFRN	Rennes	WSFR35 LFPW	WVFR35 LFPW		LFRR	LFRR	Brest
France	LFST	Strasbourg	WSFR33 LFPW	WVFR33 LFPW		LFEE	LFEE	Reims
France	LFPW	Toulouse	WSFR31 LFPW	WVFR31 LFPW		LFEE	LFEE	France UIR
			WSFR31 LFPW	WVFR31 LFPW		LFFF	LFFF	France UIR
			WSFR31 LFPW	WVFR31 LFPW		LFMM	LFMM	France UIR
			WSFR31 LFPW	WVFR31 LFPW		LFRR	LFRR	France UIR
			WSFR31 LFPW	WVFR31 LFPW		LFBB	LFBB	France UIR
Georgia	UGTB	Tbilisi	WSGG31 UGTB			UGGG	UGGG	Tblisi

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
Germany	EDZH	Hamburg	WSDL32 EDZH	WVDL32 EDZH		EDYY	EDYY	Hannover UIR
			WSDL31 EDZH	WVDL31 EDZH	WADL41 EDZH	EDWW	EDWW	Bremen
Germany	EDZM	Munchen	WSDL31 EDZM	WVDL31 EDZM	WADL41 EDZM	EDMM	EDMM	Munchen
Germany	EDZF	Frankfurt	WSDL32 EDZF	WVDL32 EDZF		EDUU	EDUU	Rhein UIR
			WSDL31 EDZF	WVDL31 EDZF	WADL41 EDZF	EDGG	EDGG	Langen
Greece	LGAT	Athinai	WSGR31 LGAT	WVGR31 LGAT	N/A	LGGG	LGGG	Athinai
Hungary	LHBP	Budapest	WSHU31 LHBM	WVHU31 LHBM	WAHU41 LHBM	LHCC	LHCC	Budapest
			WSHU41 LHBM			LHCC	LHCC	Budapest
Ireland	EINN	Shannon	WSIE31 EIDB	WVIE31 EIDB	N/A	EIDB	EISN	Shannon
Italy	LIMM	Milano	WSIY31 LIIB	WVIY31 LIIB	WAIY31 LIIB	LIMM	LIMM	Milano
			WSIY32 LIIB	WVIY32 LIIB	WAIY32 LIIB	LIRR	LIRR	Roma
			WSIY33 LIIB	WVIY33 LIIB	WAIY33 LIIB	LIBB	LIBB	Brindisi
			WSIY31 LIIB	WVIY31 LIIB		LIMM	LIMM	Italia UIR
			WSIY32 LIIB	WVIY32 LIIB		LIRR	LIRR	Italia UIR
			WSIY33 LIIB	WVIY33 LIIB		LIBB	LIBB	Italia UIR
Kazakhstan	UATT	Aktobe	WSRA31 UAAA			UATT	UATT	Aktobe
Kazakhstan	UAAA	Almaty	WSRA31 UAAA	WVRA31 UAAA		UAAA	UAAA	Almaty
Kazakhstan	UACC	Astana	WSRA41 UACC			UACC	UACC	Astana
Kazakhstan	UAII	Shymkent				UAII	UAII	Shymkent
Latvia	EVRA	Riga	WSLV31 EVRA	WVLV31 EVRA	WALV31 EVRA	EVRR	EVRR	Riga
Lithuania	EYVI	Vilnuis	WSLT31 EYVI	WVLT31 EYVI		EYVL	EYVL	Vilnius
Malta	LMML	Malta/Luqa	WSMP31 LMMM	WVMP31 LMMM		LMMM	LMMM	Malta
Netherlands	EHDB	De Bilt	WSNL31 EHDB	WVNL31 EHDB	WANL31 EHDB	EHAA	EHAA	Amsterdam
Norway	ENMI	Oslo	WSNO31 ENMI	WVNO31 ENMI	N/A	ENOR	ENOR	Norway
Norway	ENVN	Tromsoe	WSNO36 ENMI	WVNO36 ENMI	N/A	ENOB	ENOB	Bodo Oceanic
Poland	EPWA	Warszawa/Okecie	WSPL31 EPWA	WVPL31 EPWA	WAPL31 EPWA	EPWW	EPWW	Waszawa
Portugal	LPPT	Lisboa	WSAZ31 LPMG	WVNT32 LPMG		LPPO	LPPO	Santa Maria Oceanic

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
Portugal	LPPT	Lisboa	WSPO31 LPMG	WVPO31 LPMG		LPPC	LPPC	Lisboa
Republic of Moldova	LUKK	Chisinau	WSRM31 LUKK	WVRM31 LUKK		LUUU	LUUU	Chisinau
Romania	LROM	Bucresti/Otopeni	WSRO31 LROM	WVRO31 LROM		LRBB	LRBB	Bucresti
Russian Federation	ULDD	Amderma	WSRA31 RUAM	WVRA31 RUAM	N/A	ULDD	ULDD	Amderma
Russian Federation	UHMA	Anadyr	WSRA32 RUPV	WVRA32 RUPV	N/A	UHMA	UHMA	Anadyr
			WSRA31 RUPV	WVRA31 RUPV		UHMP	UHMP	Pevek
			WSRA33 RUPV	WVRA33 RUPV		UHMI	UHMI	Shmidta cape
Russian Federation	ULAA	Arkhangelsk/ Talagi	WSRS31 RUAA	WVRS31 RUAA	N/A	ULAA	ULAA	Arkhangelsk/Talagi
			WSRS37 RUAA	WVRS37 RUAA		ULAM	ULAM	Naryan-Mar
Russian Federation	UNBB	Barnaul	WSRA33 RUNW			UNBB	UNBB	Barnaul
Russian Federation	UHBB	Blagoveshchensk	WSRA33 RUHB	WVRA33 RUHB	N/A	UHBB	UHBB	Blagoveshchensk
Russian Federation	USCC	Chelyabinsk	WSRA33 RUEK	WVRA33 RUEK	N/A	USCC	USCC	Chelyabinsk
			WSRA34 RUEK	WVRA34 RUEK		USUU	USUU	Kurgan
Russian Federation	UIAA	Chita/Kadala	WSRA31 RUCH	WVRA31 RUCH	N/A	UIAA	UIAA	Chita
Russian Federation	UELL	Chulman/Neryungri	WSRA32 RUYK	WVRA32 RUYK	N/A	UELL	UELL	Chulman
Russian Federation	UIII	Irkutsk	WSRA31 RUIR	WVRA31 RUIR	N/A	UIII	UIII	Irkutsk
Russian Federation	UMKK	Kaliningrad	WSRS31 RUKG	WVRS31 RUKG	N/A	UMKK	UMKK	Kaliningrad
Russian Federation	USDK	Kamenny cape	WSRA32 RUAM		N/A	USDK	USDK	Kamenny cape
Russian Federation	UWKD	Kazan	WSRS31 RUKZ	WVRS31 RUKZ	N/A	UWKD	UWKD	Kazan
Russian Federation	UHHH	Khabarovsk/Novy	WSRA31 RUHB	WVRA31 RUHB	N/A	UHHH	UHHH	Khabarovsk
Russian Federation	USHH	Khanty-Mansiysk	WSRA33 RUOM		N/A	USHH	USHH	Khanty-Mansiysk
Russian	USKK	Kirov	WSRS31 RUNN	WVRS31 RUNN	N/A	USKK	USKK	Kirov

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
Federation								
Russian Federation	ULKK	Kotlas	WSRA33 RUAA	WVRA33 RUAA	N/A	ULKK	ULKK	Kotlas
Russian Federation	UNKL	Krasnoyarsk/ Yemelyanovo	WSRA31 RUKR		N/A	UNKL	UNKL	Krasnoyarsk
Russian Federation	UHMM	Magadan	WSRA31 RUMG	WVRA31 RUMG	N/A	UHMM	UHMM	Magadan
Russian Federation	UERR	Mirny	WSRA33 RUYK		N/A	UERR	UERR	Mirny
Russian Federation	UUWV	Moscow	WSRS31 RUMA	WVRS31 RUMA	N/A	UUWV	UUWV	Moscow
Russian Federation	ULMM	Murmansk	WSRS31 RUMU	WVRS31 RUMU	N/A	ULMM	ULMM	Murmansk
Russian Federation	UOOO	Norilsk	WSRA32 RUKR		N/A	UOOO	UOOO	Norilsk
Russian Federation	UNNT	Novosibirsk	WSRA31 RUNW		N/A	UNNT	UNNT	Novosibirsk
Russian Federation	UNOO	Omsk	WSRA31 RUOM		N/A	UNOO	UNOO	Omsk
Russian Federation	UWOO	Orenburg/ Tsentralny	WSRS32 RUSM	WVRS32 RUSM	N/A	UWOO	UWOO	Orenburg
Russian Federation	UWPP	Penza	WSRS33 RUSM	WVRS33 RUSM	N/A	UWPP	UWPP	Penza
Russian Federation	USPP	Perm/Bolshoe Savino	WSRA32 RUEK	WVRA32 RUEK	N/A	USPP	USPP	Perm
Russian Federation	UHPP	Petropavlovsk-Kamchatsky/ Yelizovo	WSRA31 RUPK	WVRA31 RUPK	N/A	UHPP	UHPP	Petropavlovsk-Kamchatsky
Russian Federation	ULLI	Pulkovo	WSRS31 RUSP	WVRS31 RUSP	N/A	ULLL	ULLL	Saint-Petersburg
			WSRS33 RUSP	WVRS33 RUSP	N/A	ULPB	ULPB	Petrozavodsk
Russian Federation	USTR	Roshchino	WSRA32 RUOM		N/A	USTT	USTT	Tyumen
Russian Federation	URRV	Rostov-on-Don	WSRS31 RURD	WVRS31 RURD		URRV	URRV	Rostov
Russian	USDD	Salekhard	WSRA37 RUOM		N/A	USDD	USDD	Salekhard

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
Federation								
Russian Federation	UWWW	Samara/Kurumoch	WSRS31 RUSM	WVRS31 RUSM	N/A	UWWW	UWWW	Samara
Russian Federation	USRR	Surgut	WSRA35 RUOM		N/A	USRR	USRR	Surgut
Russian Federation	UUYY	Syktyvkar	WSRA32 RUAA	WVRA32 RUAA	N/A	UUYY	UUYY	Syktyvkar
Russian Federation	USDS	Tarko-Sale	WSRA34 RUOM		N/A	USDS	USDS	Tarko-Sale
Russian Federation	UEST	Tiksi	WSRA38 RUYK	WVRA38 RUYK	N/A	UEST	UEST	Tiksi
Russian Federation	UWUU	Ufa	WSRA31 RUUF	WVRA31 RUUF	N/A	UWUU	UWUU	Ufa
Russian Federation	ULOL	Velikie Luki	WSRS32 RUSP	WVRS32 RUSP	N/A	ULOL	ULOL	Velikie Luki
Russian Federation	ULWW	Vologda	WSRA34 RUAA	WVRA34 RUAA	N/A	ULWW	ULWW	Vologda
Russian Federation	UUYW	Vorkuta	WSRS36 RUAA	WVRS36 RUAA	N/A	UUYW	UUYW	Vorkuta
Russian Federation	UEEE	Yakutsk	WSRA31 RUYK	WVRA31 RUYK	N/A	UEEE	UEEE	Yakutsk
			WSRA39 RUYK			UEVV	UEVV	Zhigansk
Russian Federation	USSS	Yekaterinburg/ Koltosovo	WSRA31 RUEK	WVRA31 RUEK	N/A	USSS	USSS	Yekaterinburg
Russian Federation	UHSS	Yuzhno-Sakhalinsk	WSRA31 RUVV	WVRA31 RUSH	N/A	UHSS	UHSS	Yuzhno-Sakhalinsk
Serbia	LYBE	Beograd/Surcin	WSYG31 LYBM		WAYG31 LYBM	LYBA	LYBA	Beograd
Slovakia	LZIB	Bratislava	WSSQ31 LZIB	WVSQ31 LZIB	WASQ41 LZIB	LZBB	LZBB	Bratislava
Slovenia	LJLJ	Ljubljana/Brnik	WSLJ31 LJLJ	WVLJ31 LJLJ	WALJ31 LJLJ	LJLA	LJLA	Ljubljana
Spain	GCGC	Las Palmas	WSEW33 LEMM	WVEW33 LEMM	WAEW43 LEMM	GCCC	GCCC	Canarias
Spain	LEMM	Madrid	WSEW32 LEMM	WVEW32 LEMM	WAEW42 LEMM	LECB	LECB	Barcelona
			WSEW31 LEMM	WVEW31 LEMM	WAEW40 LEMM	LECM	LECM	Madrid
					WAEW41 LEMM	LECS	LECS	Madrid FIR South Subzone (See Spain AIP)
Sweden	ESSA	Stockholm/Arlanda	WSSN31 ESWI	WVSN31 ESWI	N/A	ESAA	ESAA	Sweden
Switzerland	LSSW	Zurich	WSSW31 LSSW	WVSW31 LSSW	WASW41 LSSW	LSAS	LSAS	Zurich/Geneve

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
Macedonia, The FYRO	LWSK	Skopje	WSMJ31 LWSK	WVMJ31 LWSK	N/A	LWSS	LWSS	Skopje
Tajikistan	UTDD	Dushanbe					UTDD	Dushanbe
Turkey	LTAC	Ankara/Esenboga	WSTU31 LTAC	WVTU31 LTAC	WATU31 LTAC	LTAA	LTAA	Ankara
Turkey	LTBA	Istanbul/Ataturk	WSTU31 LTBA	WVTU31 LTBA	WATU31 LTBA	LTBB	LTBB	Istanbul
Turkmenistan	UTAA	Askhabad	WSTR31 RUMS			UTAA	UTAA	Askhbad
Ukraine	UKBV	Boryspil	WSUR31 UKBV	WVUR31 UKBV	WAUR31 UKBV	UKBV	UKBV	Kyiv
Ukraine	UKDV	Dnepropetrovsk	WSUR35 UKDV	WVUR35 UKDV	WAUR35 UKDV	UKDV	UKDV	Dnepropetrovsk
Ukraine	UKLV	L'viv	WSUR32 UKLV	WSUR32 UKLV	WAUR32 UKLV	UKLV	UKLV	L'viv
Ukraine	UKOV	Odesa	WSUR33 UKOV	WVUR33 UKOV	WAUR33 UKOV	UKOV	UKOV	Odesa
Ukraine	UKFV	Simferopol	WSUR34 UKFV	WVUR34 UKFV	WAUR34 UKFV	UKFV	UKFV	Simferopol
United Kingdom	EGRR	London/Exeter	WSUK31 EGRR	WVUK31 EGRR	N/A	EGTT	EGTT	London
			WSUK33 EGGY	WVUK33 EGRR		EGPX	EGPX	Scottish
			WSNT21 EGRR	WVNT21 EGRR		EGGX	EGGX	Shanwick Oceanic
United Kingdom	EGJJ	Jersey	WSUK32 EGJJ	WVUK32 EGJJ	N/A	EGJJ	EGJJ	Jersey
Uzbekistan	UTSS	Samarkand	WSUZ31 UTNN		N/A	UTNN	UTNN	Nukus
			WSUZ31 UTSS			UTSS	UTSS	Samarkand
Uzbekistan	UTTT	Tashkent/Yuzhny	WSUZ31 UTTT		N/A	UTTT	UTTT	Tashkent/Yuzhny

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APPENDIX C

Meteorological phenomena to be reported by SIGMET

Phenomenon	Description	Meaning
Thunderstorm (TS)	OBSC[2] TS	Obscured thunderstorm(s)
	EMBD[3] TS	Embedded thunderstorm(s)
	FRQ[4] TS	Frequent thunderstorm(s)
	SQL[5] TS	Squall line thunderstorm(s)
	OBSC TSGR	Obscured thunderstorm(s) with hail
	EMBD TSGR	Embedded thunderstorm(s) with hail
	FRQ TSGR	Frequent thunderstorm(s) with hail
	SQL TSGR	Squall line thunderstorm(s) with hail
Tropical cyclone (TC)	TC (+ TC name)	Tropical cyclone (+ TC name)
Turbulence (TURB)	SEV TURB[6]	Severe turbulence
Icing (ICE)	SEV ICE	Severe icing
	SEV ICE (FZRA)	Severe icing due to freezing rain
Mountain wave (MTW)	SEV MTW[7]	Severe mountain wave
Duststorm (DS)	HVY DS	Heavy duststorm
Sandstorm (SS)	HVY SS	Heavy sandstorm
Volcanic ash cloud (VA)	VA (+ volcano name, if known)	Volcanic ash (+ volcano name)
Radioactive cloud	RDOACT CLD	Radioactive cloud

Notes:

1. Only one of the weather phenomena listed should be selected and included in each SIGMET

*2. Obscured (**OBSC**) indicates that the thunderstorm is obscured by haze or smoke or cannot be readily seen due to darkness*

*3. Embedded (**EMBD**) – indicates that the thunderstorm is embedded within cloud layers and cannot be readily recognized*

*4. Frequent (**FRQ**) indicates an area of thunderstorms within which there is little or no separation between adjacent thunderstorms with a maximum spatial coverage greater than 75% of the area affected, or forecasts to be affected, by the phenomenon (at a fixed time or during the period of validity)*

*5. Squall line (**SQL**) indicates thunderstorms along a line with little or no space between individual clouds*

*6. Severe (**SEV**) turbulence (**TURB**) refers only to:*

- *low-level turbulence associated with strong surface winds;*
- *rotor streaming;*
- *turbulence whether in cloud or not in cloud (CAT) near to jet streams.*
- *Turbulence is considered severe whenever the peak value of the cube root of the eddy dissipation rate (EDR) exceeds 0.7.*

*7. A mountain wave (**MTW**) is considered:*

- *severe – whenever an accompanying downdraft of 3.0 m/s (600 ft/min) or more and/or severe turbulence is observed or forecasted.*

APPENDIX D

Meteorological phenomena to be reported by AIRMET

Phenomenon[1]	Description	Meaning
Surface wind speed	SFC WIND (+wind speed and units)	Widespread mean surface wind speed above 15 m/s (30 kt)
Surface visibility	SFC VIS (+visibility) (+ one of the weather phenomena causing the reduction of visibility)	Widespread areas affected by reduction of visibility to less than 5 000 m, including the weather phenomenon causing the reduction of visibility
Thunderstorm	ISOL[2] TS OCNL[3] TS ISOL[2] TSGR OCNL[3] TSGR	Isolated thunderstorm(s) Occasional thunderstorm(s) Isolated thunderstorm(s) with hail Occasional thunderstorm(s) with hail
Mountain obscuration	MT OBSC	Mountains obscured
Cloud	BKN CLD (+height) OVC CLD (+height) ISOL[2] CB OCNL[3] CB FRQ[4] CB ISOL[2] TCU OCNL[3] TCU FRQ[4] TCU	Broken cloud Overcast cloud Isolated CB Occasional CB Frequent CB Isolated TCU Occasional TCU Frequent TCU
Icing	MOD[5] ICE	Moderate icing (except for icing in convective clouds)
Turbulence	MOD[6] TURB	Moderate turbulence
Mountain wave	MOD[7] MTW	Moderate mountain wave

Notes:

1. Only one of the weather phenomena listed should be selected and included in each AIRMET

*2. Isolated (**ISOL**) indicates that an area of thunderstorms, or cumulonimbus cloud, or towering cumulus cloud, consists of individual features which affect, or are forecast to affect, an area with a maximum spatial coverage less than 50 per cent of the area concerned (at a fixed time or during the period of validity)*

*3. Occasional (**OCNL**) indicates that an area of thunderstorms, or cumulonimbus cloud, or towering cumulus cloud, consists of well-separated features which affect, or are forecast to affect, an area with a maximum spatial coverage between 50 and 75 per cent of the area concerned (at a fixed time or during the period of validity)*

*4. Frequent (**FRQ**) indicates an area of cumulonimbus cloud or towering cumulus cloud, within which there is little or no separation between adjacent CB or TCU clouds, with a maximum spatial coverage greater than 75% of the area affected, or forecasts to be affected, by the phenomenon (at a fixed time or during the period of validity)*

*5. Moderate (**MOD**) icing (**ICE**) should refer to icing in other than convective clouds.*

*6. Moderate (**MOD**) turbulence (**TURB**) refers only to:*

- *low-level turbulence associated with strong surface winds;*
- *rotor streaming;*
- *turbulence whether in cloud or not in cloud (CAT);*
- *Turbulence is considered moderate whenever the peak value of the cube root of the eddy dissipation rate (EDR) is above 0.4 and below or equal to 0.7.*

*7. A mountain wave (**MTW**) is considered moderate (**MOD**) whenever an accompanying downdraft of 1.75–3.0 m/s (350–600 ft/min) and/or moderate turbulence is observed or forecast*

.

APPENDIX E

Guidelines for reporting geographical coordinates in SIGMET and AIRMET

When reporting geographical coordinates of points in SIGMET the following should apply:

1. Each point is represented by latitude/longitude coordinates in whole degrees or degrees and minutes in the form:

N(S)nn[nn] W(E)nnn[nn]

Note: There is a space between the latitude and longitude value.

Examples: **N3623 W04515**
S1530 E12500
N42 E023

2. In describing lines or polygons, the latitude, longitude coordinates of the respective points are separated by the combination space-hyphen-space, as in the following examples:

S0530 E09300 – N0100 E09530 – N1215 E11045 – S0820 E10330

S05 E093 – N01 E095 – N12 E110 – S08 E103

Note 1: It is not necessary to repeat the first point when describing a polygon.

Note 2: In the case of the same phenomenon covering more than one area within the FIR, these elements may be repeated, as necessary.

3. When describing a volcanic ash cloud approximate form and position, a limited number of points, which form a simplified geometric figure (a line, or a triangle, or quadrangle, etc.) should be used in order to allow for a straightforward interpretation by the user.

APPENDIX F

SIGMET test focal points

NOMINATED SIGMET TEST FOCAL POINTS AMONGST STATES ACCREDITED TO THE EUR/NAT OFFICE

(Last updated: 31 December 2010)

STATE	SIGMET TEST FOCAL POINT	ORGANIZATION	CONTACT EMAIL ADDRESS	CONTACT TELEPHONE NUMBER	CONTACT FAX NUMBER
ALBANIA	Fisnik Tabaku	Albanian Civil Aviation Authority	fisnik.tabaku@dgca.gov.al	+355 42 22 62 32	+355 42 22 62 32
	Redi Alikaj	Albanian Civil Aviation Authority	redi.alikaj@dgca.gov.al	+355 42 22 62 32	+355 42 22 62 32
ALGERIA	--				
ANDORRA	*Not applicable*				
ARMENIA	Danghyan Vachik	ARMATS JSC	vachik52@mail.ru	+374 10 59 31 43	+374 10 59 30 50
AUSTRIA	Michael Pichler	Austrocontrol	Michael.Pichler@austrocontrol.at		
	Roland Elentner	Austrocontrol	roland.elentner@austrocontrol.at	+43 5 1703 2545 +43 664 8321 167	
AZERBAIJAN	Dr. Nazim Huseynov	Azeraeronavigation	dr.nazim@azans.az	+99412 497 17 14	+99412 497 27 58
	Melikov Baxruz	Azeraeronavigation	melikov@azans.az	+99412 497 16 93	+99412 497 27 58
	Tatyana Alehverdiyeva	Azeraeronavigation	sinoptic@azans.az	+99412 497 16 93	+99412 497 27 58
BELARUS	--				
BELGIUM	Wim de Mol	Belgocontrol	Wim_Demol@belgocontrol.be	+32 2 2062810	+32 2 2062809
BOSNIA & HERZEGOVINA	Tomislav Stojiljkovic	Civil Aviation Directorate of Republic of Srpska	tomislav.stojiljkovic@rscad.org	+387 51 337 573	+387 51 337 571
BULGARIA	Georgi Mednikarov	BULATSA	georgi.mednikarov@atsa.bg	+359 2 937 1260	+359 2 98 000 43
	Antony Kolarov	BULATSA	antony.kolarov@atsa.bg	+359 2 937 1264	+359 2 98 000 43

STATE	SIGMET TEST FOCAL POINT	ORGANIZATION	CONTACT EMAIL ADDRESS	CONTACT TELEPHONE NUMBER	CONTACT FAX NUMBER
CROATIA	Vladimir Malovic	NHMI	vlado@cirus.dhz.hr	+385 1 4565 617	
	Milan Roca	Croatia Control Ltd	milan.roca@crocontrol.hr szm@crocontrol.hr	+385 1 6259 286	+385 1 6259 223
CYPRUS	--				
CZECH REPUBLIC	Zoja Kvasnickova	CHMI	kvasnickova@chmi.cz	+420 244 0 32 132	+420 244 0 32 128
	Pavel Gal	CHMI	pavel.gal@chmi.cz	+420 244 0 32 135	+420 244 0 32 128
	Bohumil Techlovsky	CHMI	techlovskyb@chmi.cz	+605 221 5 50 (+420)	+420 244 0 32 241
DENMARK	Ole O. Kristensen	DMI	ook@dmi.dk epost@dmi.dk		
	Johnny Hörling Funder		jhf@naviair.dk		
	sfj@dmi.gl [Greenland]		sfj@dmi.gl		
ESTONIA	Natalja Verbenko	EHMI	natalia@emhi.ee	+372 666 0933	+372 666 0931
	Margarita Gorohhovatskaja	EHMI	rita@emhi.ee	+372 666 0992	
FINLAND	Kari Osteberg	FMI	lentosaa@fmi.fi	+358 919 2 93 800	+358 919 2 93 303
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FRANCE	Patrick Simon	Meteo-France	Patrick.Simon@meteo.fr	+33 5 61 07 81 50	+33 5 61 07 81 09
GEORGIA	Nino Gelovani	United Administration of Georgia	n.gelovani@uta.gov.ge	+995 32 51 06 43 +995 77 40 06 90	+995 32 36 40 51
GERMANY	Bernd Richter	DWD	Bernd.Richter@dwd.de	+49 69 80622559	+49 69 80623559
	Horn Reinhold	DWD	Reinhold.Horn@dwd.de	+49 69 80622558	+49 69 80623559
GREECE	Ilias Iliadis	HNMS	ili@hnms.gr	+30 210 96 9 9141	+30 210 96 2 8952 +30 210 96 4 9646
	Kostas Kasapas	HNMS	kasapas@hnms.gr aeronauticalia@hnms.gr	+30 210 96 9 9012	+30 210 96 2 8952

STATE	SIGMET TEST FOCAL POINT	ORGANIZATION	CONTACT EMAIL ADDRESS	CONTACT TELEPHONE NUMBER	CONTACT FAX NUMBER
HUNGARY	Laszlo Tölgyesi	HMS	tolgyesi.l@met.hu	+36 1 346 4644	+36 1 346 4949
ICELAND	Unnur Olafsdottir	ISAVIA	unnur.offalfsdottir@isavia.is	+354 424 4000 +354 424 4196 (Direct)	+354 424 4001
	Kristin Hermannsdottir	IMO	kristin@vedur.is	+354 522 6000	+354 522 6001
IRELAND	Kyran Dollard	Met Eireann	Kyran.Dollard@met.ie	+353 01 806 4272	
ISRAEL	Tammy Elias	Meteo-tech Ltd	tammy@meteo-tech.co.il tammye@iaa.gov.il	+972 3 975 6224 +972 54 768 9687	+972 3 979 5258
ITALY	Giuseppe Leonforte	Centro Nazionale di Meteorologia	leonforte@meteoam.it	+39 06 9129 3879	+39 06 9129 3887
	Sergio Fiacconi	Centro Meteorologico Regionale	fiacconi@meteoam.it	+39 02 7390 4600	+39 02 7390 4605
	Forecast Office	Centro Meteorologico Regionale	cmrwatch@meteoam.it	+39 02 7390 4600	+39 02 7390 4605
KAZAKHSTAN	Gulsagida Jigitcheyeva	JSC "Kazairservice"	kazairservice@mail.ru gulsagida-m.d@mail.ru	+77172799 181 +77172799 182	+77172797 182
KYRGYZSTAN	--				
LATVIA	Alla Zilina	SJSC "Latvijas Gaisa Satiksme"	alla.zilina@lgs.lv	+37167300 760	+37167300 705
	Alla Kajevchenko	SLLC "Latvian Environmental, Geology and Meteorology Centre"	alla.kajevcenko@lvgmc.lv	+37167032 637	+37167145 154
LITHUANIA	Zita Derenciene	Lithuanian Hydrometeorological Service	zita.derenciene@meteo.lt	+370 5 271 5058	+370 5 272 8874
LUXEMBOURG	*Not applicable*				
MALTA	Charles Galdies	Malta International Airport plc	charles.galdies@maltairport.com	+356 2369 6527	+356 2124 6694
MONACO	*Not applicable*				

STATE	SIGMET TEST FOCAL POINT	ORGANIZATION	CONTACT EMAIL ADDRESS	CONTACT TELEPHONE NUMBER	CONTACT FAX NUMBER
MONTENEGRO	--				
MOROCCO	Abderrahim Mouhtadi	Direction de la Meteorologie Nationale	Abderrahim.mouhtadi@gmail.com Mouhtadi.abderrahim@marocmeteo.ma	+212 5 22 65 49 10 +212 6 61 47 23 38	+212 5 22 91 36 98
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	Kees Blom	KNMI	metno-l@knmi.nl	+31 6 112 469 76	+31 30 2210 407
NORWAY	John F. Syer	met.no	johnfs@met.no	+47 22 963 000	+47 22 963 050
POLAND	Anna Klokowska-Siejek	IMGW	anna.siejek@imgw.pl	+48 5694454	+48 5694454
PORTUGAL	Augusto Rodrigues	IM	augusto.rodrigues@meteo.pt	+351 21 844 7000	+351 21 840 2370
REPUBLIC OF MOLDOVA	Leonid Vidibozski	MoldATSA	vidibozski@moldatsa.md	+37322 502 924	+373 22 502 907
	Aleksey Gashchenko	MoldATSA	gascenko@moldatsa.md	+37322 502 924	+373 22 502 907
ROMANIA	Laurentiu Brojboiu	ROMATSA	laurentiu.brojboiu@romatsa.ro	+4021 2083 318 +4073 0505 082	+4021 2083 579
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RUSSIAN FEDERATION	Elena Averyanova	Main Radio Meteorological Centre (MRMC)Roshydromet	Averyanova.Elena@mecom.ru	+7 499 252 1039	+7 499 252 5504
	Yuilya Naryshkina	Meteoagency of Roshydromet	juliaavia@mail.ru	+7 499 252 2729	+7 499 255 5075
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SAN MARINO	*Not applicable*				
SERBIA	Snezana Lazarevic	RHMZ	snezana.lazarevic@hidmet.gov.rs	+381 11 3050816	+381 11 2542676
	Perisa Sunderic	RHMZ	perisa.sunderic@hidmet.gov.rs	+381 11 3050886	+381 11 2542676

STATE	SIGMET TEST FOCAL POINT	ORGANIZATION	CONTACT EMAIL ADDRESS	CONTACT TELEPHONE NUMBER	CONTACT FAX NUMBER
	Danijela Milosavljevic	RHMZ	danijela.milosavljevic@hidmet.gov.rs	+381 11 2861074	+381 11 2542676
	Ilija Malidzan	SMATSA	mwo.beograd@smatsa.rs	+38111 3104 868	+38111 3104 956
SLOVAKIA	Cyril Kunzo	SHMI	cyril.kunzo@shmu.sk	+421 2 4857 4262	+421 2 4333 8548
SLOVENIA	Petar Hitij	SEA	petar.hitij@gov.si	+386 1 478 4190	+386 1 478 4053
	Petar Colic	SEA	petar.colic@gov.si	+386 4 280 4500	+386 4 280 4518
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	Victoria Conde Torrijos	AEMET	mcondet@aemet.es	+34 915810219	
	Guillermo García Yáñez	AEMET	ggarciay@aemet.es telepro@inm.es	+34 915819 757	+34 915445307
SWEDEN	Gunilla Mild	SMHI	gunilla.mild@smhi.se	+46 11 495 8507	+46 11 495 8001
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