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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 aeronautical meteorological warnings for hazardous en-route meteorological phenomena, known as SIGMET information. The guidance is complementary to the Annex 3 standards and recommended practices regarding SIGMET and to the SIGMET related provisions of the EUR ANP/FASID (ICAO Doc 7754).

1.2 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 3A 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 The SIGMET Guide is intended mainly to assist the meteorological watch offices (MWOs) in the EUR Region in preparing and disseminating SIGMET information. It provides detailed information on the format of SIGMET 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.

1.5 This document is prepared by the ICAO EUR/NAT Regional Office and published on the website at: (http://www.paris.icao.int/ under “Documents” folder). It should be reviewed and updated regularly in order to be kept in line with the ICAO SARPs and regional procedures.

PART 2. RESPONSIBILITIES AND COORDINATION

2.1 General

2.1.1 SIGMET is warning information, hence it is of highest priority among other types of OPMET information provided to aviation users. The primary purpose of SIGMET is for in-flight service, which requires timely transmission of the SIGMET 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 information. Pilots contribute to the effectiveness of the SIGMET service through issuance of special air-reports to the ATS units. Special air-reports are among the most valuable sources of information for the Meteorological Watch Offices (MWO) in the preparation of SIGMET. The ATS units receiving special air-reports should forward them to the associated MWOs without delay.

2.1.3 As seen from the above, the SIGMET service involves MET, ATS and pilots. In order for the SIGMET 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. This requires global dissemination of SIGMET through the international OPMET data banks and the satellite broadcasts: ISCS and SADIS. SIGMET should also be distributed to the World Area Forecast Centres (WAFC) London and Washington for use in the preparation of the significant weather (SIGWX) forecasts.

2.1.6 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

2.2.1 SIGMET 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 provides information concerning the location, extent, intensity and expected evolution of the specified phenomena.

2.2.2 Information about the provision of SIGMET 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, 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 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 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 for weather phenomena of lower intensity or such of 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 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 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 SIGMETs 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 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 is required for transmission;
- the responsible MOTNE centre and international EUR OPMET data banks (it should be arranged through the MOTNE scheme, that SIGMETs are sent to the designated OPMET data banks in other ICAO Regions, to the WAFCs and to the uplink stations of SADIS and ISCS);
- responsible VAAC (if applicable); and
- Vienna MOTNE centre (LOZZMMSS), especially for WV SIGMETs, for further dissemination within the EUR Region.

2.2.10 In issuing SIGMET for volcanic ash, the MWOs have to include as appropriate 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 SIGMETs issued by the associated MWO;
- receipt and display at the ATS unit of SIGMETs issued by MWOs responsible for the neighbouring FIRs /ACCs if these SIGMETs are required according to paragraph 2.3.4 below (within 925 km /500 NM range from the reported phenomenon); and
- transmission without delay of special air-reports received through voice communication to the associated MWO.

2.3.2 SIGMET 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 information passed to aircraft should cover a portion of the route up to a flying time of one hour 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 distance of 500 NM (925 km), which corresponds to a flying time of one hour 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 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. 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 [CCx]

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 **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 The group **CCx** is used only when sending a correction of a SIGMET, which has already been transmitted; the third letter "x" takes the value A for the first correction, B for the second correction, etc.

3.4.1.5 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:

```
"WSDL31 EDZB" and "WVDL31 EDZB" for EDBB BERLIN FIR
"WSDL31 EDZE" and "WVDL31 EDZE" for EDLL DUSSELDORF FIR
"WSDL31 EDZF" and "WVDL31 EDZF" for EDFF FRANKFURT FIR
"WSDL31 EDZH" and "WVDL31 EDZH" for EDWW BREMEN FIR
"WSDL31 EDZM" and "WVDL31 EDZM" for EDMM MUNCHEN FIR
"WSDL32 EDZB" and "WVDL32 EDZB" for EDBB BERLIN UIR
"WSDL32 EDZF" and "WVDL32 EDZF" for EDUU RHEIN UIR
"WSDL32 EDZH" and "WVDL32 EDZH" for EDYY HANNOVER UIR
```

Examples:

WSDL32 EDZF 121200
WVJP01 RJTD 010230
WCNG21 AYPY 100600 CCA

*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:

EDBB SIGMET 3 VALID 121100/121500 EDZB-
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>] FCST	Geographical location of the phenomenon given by coordinates, or geographical objects, or location indicators	FL<nnn> FL<nnn/nnn> [TOP, ABV, BLW]

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

The indication whether the information is observed or forecast is given by the abbreviations OBS and FCST. OBS is optionally followed by a time group in the form AT GGggZ, where GGgg is the time of the observation in hours and minutes UTC. If the exact time of the observation is not known the time is not included. When FCST is used, it is assumed that the time of occurrence or commencement of the phenomenon coincides with the beginning of the period of validity included in the first line of the SIGMET.

Examples:

OBS AT 0140Z
FCST

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 are the most common ways to describe the location of the phenomenon:

- 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 D** to this Guide.

3.4.3.1.5 Flight level and extent

FL<nnn>
or FL<nnn/nnn>
or TOP FL<nnn>
or [TOP] ABV FL<nnn>
or [TOP] BLW 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 a layer – **FL<nnn/nnn>**, where the lower level is reported first; this is used particularly in reporting turbulence and icing;
- reporting a level or layer with reference to one FL using ABV or BLW
- reporting the level of the tops of the TS clouds using the abbreviation TOP.

Examples:

EMBD TS … TOP ABV FL340
SEV TURB … FL180/210
SEV ICE … BLW 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 eight points of compass. Speed is given in KMH or KT. The abbreviation STNR is used if no significant movement is expected.

Examples:

MOV NW 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	Phenomenon	Volcano		Volcanic ash cloud
			Name	Location	
<CCCC>	<name> FIR [UIR, FIR/UIR, CTA]	VA	[ERUPTION] [MT <name>]	[LOC <location>]	VA CLD OBS AT <GGggZ> VA CLD FCST

5			6
Extent of the cloud			Expected movement
Vertical	Horizontal	Position	
FL <nnn/nnn>	APRX <nnn> BY <nnn> KM	<lat,lon> - <lat,lon> - …	MOV <direction> <speed>

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

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

VA [ERUPTION] [MT <name>] [LOC <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:

- starts with the abbreviation **VA** – volcanic ash;
- the word **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. location of the volcano is given by the abbreviation **LOC** – location, followed by the latitude and longitude in degrees and minutes;
  e.g., **LOC 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 observation or expected commencement of the VA CLD

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

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 shall be used.

Examples:

VA CLD OBS AT 0100Z
VA CLD FCST

3.4.4.4 Level and extent of the volcanic ash cloud

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

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
<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

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:

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

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 compass: N, NE, E, SE, S, SW, W, NW. The speed of movement is given in KMH or KT.

Examples:

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

MOV E 35 KMH
MOV SW 20 KT

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 <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. 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=

APPENDIX A

List of the abbreviations and decode used in SIGMET

ABV	Above
AND*	And
APRX	Approximate or approximately
AT	At *(followed by time)*
BLW	Below
BY*	By
CB	Cumulonimbus
CENTRE*	Centre *(used to indicate tropical cyclone centre)*
CLD	Cloud
CNL	Cancel *or* cancelled
CTA	Control area
DS	Duststorm
E	East *or* eastern longitude
ERUPTION*	Eruption *(used to indicate volcanic eruption)*
EMBD	Embedded in layer *(to indicate CB embedded in layers of other clouds)*
FCST	Forecast
FIR	Flight information region
FL	Flight level
FRQ	Frequent
FZRA	Freezing rain
GR	Hail
HVY	Heavy *(used to indicate intensity of weather phenomena)*
ICE	Icing
INTSF	Intensify *or* intensifying
ISOL	Isolated
KM	Kilometres
KMH	Kilometres per hour
KT	Knots
LINE*	Line
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
NW	North-west
OBS	Observe *or* observed *or* observation
OBSC	Obscure *or* obscured *or* obscuring
OCNL	Occasional *or* occasionally
OF*	Of … *(place)*
RA	Rain
RDOACT*	Radioactive
S	South *or* southern latitude
SE	South-east
SEV	Severe *(used e.g. to qualify icing and turbulence reports)*
SIGMET	Information concerning en-route weather phenomena which may affect the safety of aircraft operations
SQL	Squall line
SS	Sandstorm

STNR	Stationary
SW	South-west
TC	Tropical cyclone
TO	To … *(place)*
TOP	Cloud top
TS	Thunderstorm
TURB	Turbulence
UIR	Upper flight information region
VA	Volcanic ash
VALID*	Valid
W	West *or* western longitude
WI	Within
WID	Width
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 headers

State	MWO Loc	MWO name	WS AHL	WV 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	LOVV	LOVV	Wien
Azerbaijan	UBBB	Baku				UBBB	Baku/Heydar Aliyev
Belarus	UMMM	Minsk	WSBY31 UMMS		UMMV	UMMV	Minsk
Belgium	EBBR	Brussels/National	WSBX31 EBBR	WVBX31 EBBR	EBBU	EBBU	Brussels(ACC-FIC)
Bosnia And Herzegovina	LYBE	Beograd/Surcin	WSQB32 LYBM	WVQB32 LYBM	LYBA	LQSB	Sarajevo (E)
Bosnia And Herzegovina	LDZA	Zagreb/Pleso	WSQB31 LDZM	WVQB31 LDZM	LDZO	LQSB	Sarajevo (W)
Bulgaria	LBSF	Sofia/Vrajbedebna	WSBU31 LBSM	WVBU31 LBSM	LBSR	LBSR	Sofia
Bulgaria	LBWN	Varna/Acsakovo	WSBU31 LBSM	WVBU31 LBSM	LBWR	LBWR	Varna
Croatia	LDZA	Zagreb/Pleso	WSRH31 LDZM	WVRH31 LDZM	LDZO	LDZO	Zagreb
Cyprus	LCLK	Larnaca/Larnaca	WSCY31 LCLK		LCCC	LCCC	Nicosia
Czech Republic	LKPW	Praha/Ruzyne	WSCZ31 LKPW	WVCZ31 LKPW	LKAA	LKAA	Praha
Denmark	EKMI	Kobenhavn	WSDN31 EKCH	WVDN31 EKCH	EKDK	EKDK	Kobenhavn
Estonia	EEMH	Tallinn	WSEO31 EETN	WVEO31 EETN	EETT	EETT	Tallinn
Finland	EFHK	Helsinki-Vantaa	WSFI31 EFHK	WVFI31 EFHK	EFES	EFIN	Finland (S part)
Finland	EFRO	Rovaniemi	WSFI32 EFHK	WVFI32 EFHK	EFPS	EFIN	Finland (N part)
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
Germany	EDZB	Berlin	WSDL32 EDZB	WVDL32 EDZB	EDBB	EDBB	Berlin UIR

State	MWO Loc	MWO name	WS AHL	WV AHL	ATSU Ind	FIR Ind	FIR Name
			WSDL31 EDZB	WVDL31 EDZB	EDBB	EDBB	Berlin
Germany	EDZE	Essen	WSDL31 EDZE	WVDL31 EDZE	EDLL	EDLL	Dusseldorf
Germany	EDZH	Hamburg	WSDL32 EDZH	WVDL32 EDZH	EDYY	EDYY	Hannover UIR
			WSDL31 EDZH	WVDL31 EDZH	EDWW	EDWW	Bremen
Germany	EDZM	Munchen	WSDL31 EDZM	WVDL31 EDZM	EDMM	EDMM	Munchen
Germany	EDZF	Frankfurt	WSDL32 EDZF	WVDL32 EDZF	EDUU	EDUU	Rhein UIR
			WSDL31 EDZF	WVDL31 EDZF	EDFF	EDFF	Frankfurt
Greece	LGAT	Athinai	WSGR31 LGAT	WVGR31 LGAT	LGGG	LGGG	Athinai
Hungary	LHBP	Budapest	WSHU31 LHBM	WVHU31 LHBM	LHCC	LHCC	Budapest
			WSHU41 LHBM		LHCC	LHCC	Budapest
Ireland	EINN	Shannon	WSIE31 EIDB	WVIE31 EIDB	EIDB	EISN	Shannon
Italy	LIBR	Brindisi	WSIY31 LIIB	WVIY31 LIIB	LIBB	LIBB	Brindisi
			WSIY31 LIIB	WVEU31 LIBB	LIBB	LIBB	Italia UIR
Italy	LIMM	Milano	WSIY31 LIIB		LIMM	LIMM	Italia UIR
			WSIY31 LIIB	WVIY31 LIIB WVEU31 LIBB	LIMM	LIMM	Milano
Italy	LIIB	Roma	WSIY31 LIIB		LIRR	LIRR	Italia UIR
			WSIY31 LIIB	WVIY31 LIIB WVEU31 LIBB	LIRR	LIRR	Roma
Kazakhstan	UATE	Aktau			UATE	UATE	Aktau
Kazakhstan	UATT	Aktyubinsk	WSRA31 UAAA		UATT	UATT	Aktyubinsk
Kazakhstan	UAAA	Almaty	WSRA31 UAAA	WVRA31 UAAA	UAAA	UAAA	Almaty
Kazakhstan	UACC	Astana	WSRA41 UACC		UACC	UACC	Astana
Kazakhstan	UATG	Atyrau			UATG	UATG	Atyrau
Kazakhstan	UAUU	Kostanay			UAUU	UAUU	Kustanay/Kostanay
Kazakhstan	UAOO	Kyzylorda			UAOO	UAOO	Kyzylorda
Kazakhstan	UASS	Semipalatinsk			UASS	UASS	Semipalatinsk
Kazakhstan	UAII	Shymkent			UAII	UAII	Shymkent
Kazakhstan	UARR	Uralsk			UARR	UARR	Uralsk
Kazakhstan	UAKD	Zhezkazgan			UAKD	UAKD	Zhezkazgan
Kyrgyzstan	UAFM	Bishkek	WSKG41 UAFM		UAFM	UAFM	Bishkek/Manas

State	MWO Loc	MWO name	WS AHL	WV AHL	ATSU Ind	FIR Ind	FIR Name
Latvia	EVRA	Riga	WSLV31 EVRA	WVLV31 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	EHAA	EHAA	Amsterdam
Norway	ENMI	Oslo	WSNO31 ENMI	WVNO31 ENMI	ENOR	ENOR	Norway
Norway	ENVN	Tromsoe	WSNO36 ENMI	WVNO36 ENMI	ENOB	ENOB	Bodo Oceanic
Poland	EPWA	Warszawa/Okecie	WSPL31 EPWA	WVPL31 EPWA	EPWW	EPWW	Waszawa
Portugal	LPPT	Lisboa	WSAZ31 LPMG	WVNT32 LPMG	LPPO	LPPO	Santa Maria Oceanic
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	ULDD	ULDD	Amderma
Russian Federation	UHMA	Anadyr	WSRA31 RUPV	WVRA32 RUPV	UHMA	UHMA	Anadyr
Russian Federation	ULAA	Arkhangelsk/Talagi	WSRS31 RUAA	WVRS31 RUAA	ULAA	ULAA	Arkhangelsk/Talagi
			WSRS37 RUAA		ULAM	ULAM	Naryan-Mar
Russian Federation	URWA	Astrakhan	WSRS32 RURD	WVRS32 RURD	URWA	URWA	Astrakhan
Russian Federation	UNBB	Barnaul	WSRA33 RUNW		UNBB	UNBB	Barnaul
Russian Federation	UEBB	Batagay	WSRA36 RUYK		UEBB	UEBB	Batagay
Russian Federation	USHB	Beryozovo	WSRA36 RUOM	WVRA36 RUOM	USHB	USHB	Beryozovo
Russian Federation	UHBB	Blagoveshchensk	WSRA33 RUHB	WVRA33 RUHB	UHBB	UHBB	Blagoveshchensk
			WSRA34 RUHB		UHBI	UHBI	Magadachi
Russian Federation	UIBB	Bratsk	WSRA33 RUIR	WVRA33 RUIR	UIBB	UIBB	Bratsk
Russian Federation	USCC	Chelyabinsk	WSRA33 RUEK	WVRA33 RUEK	USCC	USCC	Chelyabinsk
			WSRA34 RUEK			USUU	Kurgan
Russian Federation	USCC	Chersky	WSRA34 RUYK	WVRA34 RUYK	USCC	UESS	Chersky
Russian Federation	UIAA	Chita/Kadala	WSRA31 RUCH	WVRA31 RUCH	UIAA	UIAA	Chita
Russian Federation	UESO	Chokurdakh	WSRA35 RUYK	WVRA35 RUYK	UESO	UESO	Chokurdakh
Russian Federation	UELL	Chulman/Neryungri	WSRA32 RUYK	WVRA32 RUYK	UELL	UELL	Chulman
Russian Federation	UIII	Irkutsk	WSRA31 RUIR	WVRA31 RUIR	UIII	UIII	Irkutsk
Russian Federation	UMKK	Kaliningrad	WSRS31 RUKG	WVRS31 RUKG	UMKK	UMKK	Kaliningrad
Russian Federation	USDK	Kamenny cape	WSRA32 RUAM		USDK	USDK	Kamenny cape
Russian Federation	UWKD	Kazan	WSRS31 RUKZ	WVRS31 RUKZ	UWKD	UWKD	Kazan
Russian Federation	UHHH	Khabarovsk/Novy	WSRA31 RUHB	WVRA31 RUHB	UHHH	UHHH	Khabarovsk

State	MWO Loc	MWO name	WS AHL	WV AHL	ATSU Ind	FIR Ind	FIR Name
Russian Federation	USHH	Khanty-Mansiysk	WSRA31 RUOM		USHH	USHH	Khanty-Mansiysk
Russian Federation	UOHH	Khatanga	WSRA31 RUDS		UOHH	UOHH	Khatanga
Russian Federation	UIKK	Kirensk	WSRA32 RUIR	WVRA32 RUIR	UIKK	UIKK	Kirensk
Russian Federation	USKK	Kirov	WSRS31 RUNN	WVRS31 RUNN	USKK	USKK	Kirov
Russian Federation	UNLL	Kolpashevo	WSRA32 RUNW		UNLL	UNLL	Kolpashevo
Russian Federation	ULKK	Kotlas	WSRA33 RUAA	WVRA33 RUAA	ULKK	ULKK	Kotlas
Russian Federation	UNKL	Krasnoyarsk/Yemelyanovo	WSRA31 RUKR		UNKL	UNKL	Krasnoyarsk
Russian Federation	UHMM	Magadan	WSRA31 RUMG	WVRA31 RUMG	UHMM	UHMM	Magadan
Russian Federation	UERR	Mirny	WSRA33 RUYK		UERR	UERR	Mirny
			WSRA39 RUYK		UEVV	UEVV	Zhigansk
Russian Federation	UUWV	Moskcow/Meteoagency	WSRS31 RUMA		UUWV	UUWV	Moskcow
Russian Federation	ULMM	Murmansk	WSRS31 RUMU	WVRS31 RUMU	ULMM	ULMM	Murmansk
Russian Federation	UHNN	Nikolaevsk-na-Amure	WSRA32 RUHB	WVRA32 RUHB	UHNN	UHNN	Nilkoslaevsk-on-Amur
Russian Federation	UOOO	Norilsk	WSRA32 RUKR		UOOO	UOOO	Norilsk
Russian Federation	UNNT	Novosibirsk/Tolmachevo	WSRA31 RUNW		UNNT	UNNT	Novosibirsk
Russian Federation	UHSH	Okha	WSRA32 RUSH	WVRA32 RUSH	UNSH	UNSH	Okha
			WSRA31 RUOM		UNOO	UNOO	Omsk
Russian Federation	UWOO	Orenburg/Tsentralny	WSRS32 RUSM	WVRS32 RUSM	UWOO	UWOO	Orenburg
Russian Federation	UUYP	Pechora	WSRS35 RUAA	WVRS35 RUAA	UUYP	UUYP	Pechora
Russian Federation	UWPP	Penza	WSRS33 RUSM	WVRS33 RUSM	UWPP	UWPP	Penza
Russian Federation	USPP	Perm/Bolshoe Savino	WSRA32 RUEK	WVRA32 RUEK	USPP	USPP	Perm
Russian Federation	UHPP	Petropavlovsk-Kamchatsky/Yelizovo	WSRA31 RUPK	WVRA31 RUPK	UHPP	UHPP	Petropavlovsk-Kamchatsky
Russian Federation	UHMP	Pevek	WSRA31 RUPV	WVRA31 RUPV	UHMP	UHMP	Pevek
			WSRA33 RUPV		UHMI	UHMI	Smidta cape
Russian Federation	URRV	Rostov-na-Donu	WSRS31 RURD	WVRS31 RURD	URRV	URRV	Rostov-na-Donu
Russian Federation	USDD	Salekhard	WSRA37 RUOM		USDD	USDD	Salekhard
Russian Federation	UWWW	Samara/Kurumoch	WSRS31 RUSM	WVRS31 RUSM	UWWW	UWWW	Samara
Russian Federation	ULLI	Sankt-Petersburg/Pulkovo	WSRS31 RUSP	WVRS31 RUSP	ULLL	ULLL	Sankt Peterburg
			WSRS33 RUSP		ULPB	ULPB	Petrozavodsk
Russian Federation	USRR	Surgut	WSRA35 RUOM		USRR	USRR	Surgut

State	MWO Loc	MWO name	WS AHL	WV AHL	ATSU Ind	FIR Ind	FIR Name
Russian Federation	UUYY	Syktyvkar	WSRA32 RUAA	WVRA32 RUAA	UUYY	UUYY	Syktyvkar
Russian Federation	USDS	Tarko-Sale	WSRA34 RUOM		USDS	USDS	Tarko-Sale
Russian Federation	UEST	Tiksi	WSRA38 RUYK	WVRA38 RUYK	UEST	UEST	Tiksi
Russian Federation	UOTT	Turukhansk	WSRA33 RUKR		UOTT	UOTT	Turukhansk
Russian Federation	USTR	Tyumen/Roshchino	WSRA32 RUOM		USTT	USTT	Tyumen
Russian Federation	UWUU	Ufa	WSRA31 RUUF	WVRA31 RUUF	UWUU	UWUU	Ufa
Russian Federation	ULOL	Velikie Luki	WSRS32 RUSP	WVRS32 RUSP	ULOL	ULOL	Velikie Luki
Russian Federation	UHWW	Vladivostok/Knevichi	WSRA31 RUVV	WVRA31 RUVV	UHWW	UHWW	Vladivostok
Russian Federation	ULWW	Vologda	WSRA31 RUAA	WVRA31 RUAA	ULWW	ULWW	Vologda
Russian Federation	UUYW	Vorkuta	WSRS36 RUAA	WVRS36 RUAA	UUYW	UUYW	Vorkuta
Russian Federation	UEEE	Yakutsk	WSRA31 RUYK		UEEE	UEEE	Yakutsk
Russian Federation	USSS	Yekaterinburg/Koltosovo	WSRA31 RUEK	WVRA31 RUEK	USSS	USSS	Yekaterinburg
Russian Federation	UHSS	Yuzhno-Sakhalinsk	WSRA31 RUVV	WVRA31 RUSH	UHSS	UHSS	Yuzhno-Sakhalinsk
Russian Federation	UESU	Zyryanka	WRA37 RUYK	WVRA37 RUYK	UESU	UESU	Zyryanka
Serbia and Montegro	LYBE	Beograd/Surcin	WSYG31 LYBM		LYBA	LYBA	Beograd
Slovakia	LZIB	Bratislava	WSSQ31 LZIB	WVSQ31 LZIB	LZBB	LZBB	Bratislava
Slovenia	LJLJ	Ljubljana/Brnik	WSLJ31 LJLJ	WVLJ31 LJLJ	LJLA	LJLA	Ljubljana
Spain	GCGC	Las Palmas	WSEW33 LEMM	WVEW33 LEMM	GCCC	GCCC	Canarias
Spain	LEMM	Madrid	WSEW32 LEMM	WVEW32 LEMM	LECB	LECB	Barcelona
			WSEW31 LEMM	WVEW31 LEMM	LECM	LECM	Madrid
Sweden	ESSA	Stockholm/Arlanda	WSSN31 ESWI	WVSN31 ESWI	ESAA	ESAA	Sweden
Sweden	ESNN	Sundsvall/Harnosand	WSSN32 ESWI		ESAA	ESAA	Sweden
Switzerland	LSSW	Zurich	WSSW31 LSSW	WVSW31 LSSW	LSAS	LSAS	Zurich/Geneve
Macedonia	LWOH	Ohrid				LWOH	Ohrid
Macedonia	LWSK	Skopje	WSMJ31 LWSK	WVMJ31 LWSK	LWSS	LWSS	Skopje
Tajikistan	UTDD	Dushanbe				UTDD	Dushanbe
Turkey	LTAC	Ankara/Esenboga	WSTU31 LTAC	WVTU31 LTAC	LTAA	LTAA	Ankara
Turkey	LTBA	Istanbul.Ataturk	WSTU31 LTBA	WVTU31 LTBA	LTBB	LTBB	Istanbul
Turkmenistan	UTAA	Askhabad	WSTR31 RUMS		UTAA	UTAA	Askhbad
Ukraine	UKBB	Borispil	WSUR31 UKBB	WVUR31 UKBB	UKBV	UKBV	Kyiv
Ukraine	UKHH	Kharkiv	WSUR35 UKHH	WVUR35 UKHH	UKHV	UKHH	Kharkiv
Ukraine	UKLL	L'viv	WSUR32 UKLL	WSUR32 UKLL	UKLV	UKLL	L'viv

State	MWO Loc	MWO name	WS AHL	WV AHL	ATSU Ind	FIR Ind	FIR Name
Ukraine	UKOO	Odessa	WSUR33 UKOO	WVUR33 UKOO	UKOO	UKOO	Odessa
Ukraine	UKFF	Simferopol	WSUR34 UKFF	WVUR34 UKFF	UKFV	UKFF	Simferopol
United Kingdom	EGRR	London/Exeter	WSUK31 EGRR	WVUK31 EGRR	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	EGJJ	EGJJ	Jersey
Uzbekistan	UTSS	Samarkand	WSUZ31 UTNN		UTNN	UTNN	Nukus
			WSUZ31 UTSS		UTSS	UTSS	Samarkand
Uzbekistan	UTTT	Tashkent/Yuzhny	WSUZ31 UTTT		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

Guidelines for reporting geographical coordinates in SIGMET

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

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.

– END –