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RECORD OF AMENDMENTS AND CORRIGENDA

Amendments			
No.	Date of issue	Date entered	Entered by
1	5 July 2011	5 July 2011	RO MET
2	24 Nov 2011	24 Nov 2011	RO MET
3	15 Feb 2013	15 Feb 2013	RO MET
4	3 Jan 2014	3 Jan 2014	RO MET (align w/ Am76 to Annex 3)
5	11 Feb 2014	11 Feb 2014	MET – Update App. B entries Norway
6	3 Nov 2014	3 Nov 2014	Update wmo ahl russe and ad-hoc METG changes (align w/ global template)
7	26 Oct 2015	26 Oct 2015	Non-controversial editorials. Identification of METWSG best practice guidance. Removal of 'UIR' on its own. Re-ordering of the methods by which spatial location of hazards should be provided – in accordance with IATA's preferences. Updated guidance regarding amending SIGMET/AIRMET. Updates to Appendix B and Appendix H (which includes examples of SIGMET for complex FIRs) as well as the inclusion of Appendix I that provides examples of special air-reports. Appendix F is now a link to SIGMET focal point contact information which was considered dynamic and could be updated more frequently.

Corrigenda			
No.	Date of issue	Date entered	Entered by

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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.icao.int/EURNAT/Pages/welcome.aspx (EUR/NAT Documents ---> EUR Documents ---> 014 – EUR SIGMET and AIRMET Guide). It should be reviewed and updated regularly in order to be kept in line with the ICAO SARPs and regional procedures. This amendment dated 26 October 2015 includes examples of SIGMET and AIRMET for complex FIR boundaries; removal of UIR on its own; re-ordering examples in accordance with IATA; improving guidance related to amending SIGMET; updating WMO AHL list; introducing guidance on corrected SIGMET; and introducing guidance on special air-reports.

PART 2. RESPONSIBILITIES AND COORDINATION

2.1 General

2.1.1 SIGMET and AIRMET 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. In addition, special air-reports of pre-eruption volcanic activity, a volcanic eruption, volcanic ash cloud or aircraft encounter with volcanic ash received by MWOs should be transmitted to their associated VAACs at the address specified in Table 4-2 of Doc 9766, to the WAFC London SADIS at the address specified in Appendix B of ICAO Doc 9766, according to the region containing the area affected, and the WAFC Washington at KWBCYMYX (reference ICAO Doc 9766). The ATS units receiving routine air-reports by data link communication should forward them to the associated MWOs and WAFCs without delay. Examples on the format and dissemination of special air-reports are provided at **Appendix I**.

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 and AIRMET information is also used for the flight planning and in-flight monitoring. This requires global dissemination of SIGMET and AIRMET 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 (WIFS and SADIS/Secure SADIS FTP noting WIFS does not distribute AIRMET and special air-reports) and 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 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). For more assistance, reference **Appendix H** to this guide - SIGMET Guidance Table: Simplified from Annex 3 Table A6-1. 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). *Note that a list of special air-report headers for the EUR Region is provided at the following website:* http://www.icao.int/EURNAT/Pages/welcome.aspx (EUR/NAT Documents ---> EUR Documents ---> MET Guidance ---> Headers – Special air-reports).

2.2.9 Appropriate telecommunication means have to be available at the MWO in order to ensure timely dissemination of SIGMET and AIRMET (as per EUR FASID Table MET 1B) according to a dissemination scheme, which includes transmission to:

- local ATS users;
- aerodrome MET offices within the AOR;
- other MWOs concerned (it should be ensured that SIGMET and 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 and 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 and AIRMET are sent to the designated OPMET data banks in other ICAO Regions, to the

WAFCs and to the uplink stations of SADIS and WIFS noting WIFS does not distribute AIRMET and special air-reports);

- responsible VAAC (if applicable); and

*Note that SIGMET, AIRMET and special air-reports priority indicator is **FF** for flight safety messages (Annex 10, Volume II, 4.4.1.1.3 refers)*

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 and AIRMET issued by the associated MWO;

- receipt and display at the ATS unit of SIGMET and AIRMET issued by MWOs responsible for the neighbouring FIRs /ACCs if these SIGMET and 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 and 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 and 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 and 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, 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. Annex 3, Appendix 6, Table A6-1 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. In addition, incorrect SIGMET (e.g. error in FL) should be cancelled and a new SIGMET issued with the corrected information avoiding the use of COR as it is 1) not in Annex 3; 2) will not be supported by IWXXM; and 3) is not clear to the users what element is corrected. 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.

3.1.6 Some SIGMET are generated using information from special air-reports (received by voice communications or data link (downlink)). The reporting of turbulence and icing used in special air-reports includes both moderate and severe categories (as per Doc 4444, Appendix 1). Some pilots report turbulence as "moderate to severe". A MWO is then faced with determining which category to use in a special air-report (uplink) or in a SIGMET message for severe turbulence. It is recommended to treat such "moderate to severe" observations as 'severe' in the context of using the report to prompt the issuance of a SIGMET message or a special air-report (uplink).

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, SS, and RDOACT CLD); this SIGMET is referred as WS SIGMET;
- SIGMET for volcanic ash is referred as WV SIGMET
- SIGMET for tropical cyclones is referred as WC SIGMET and not described in this document (only WC SIGMET examples and code elements are represented in Appendix G and Appendix H to this Guide).

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 a conditional element, and angled brackets - < > - for symbolic representation of a variable element, which in the real SIGMETs accepts explicit 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:

"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

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 WV 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 WV 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 nine 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 FIR/UIR or CTA	Description of the phenomenon	Observed or forecast	Location of the phenomenon*	Flight level or altitude and extent*
<CCCC>	<name> FIR [FIR/UIR, CTA]	<Phenomenon>	OBS [AT <GGggZ>] or FCST [AT <GGggZ>]	Geographical location of the phenomenon given by coordinates	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	9	
Movement or expected movement*	Changes in intensity*	Forecast position at the end of the validity period*	
MOV <direction, speed> KMH[KT], or STNR	INTSF or WKN or NC	[FCST<GGggZ>]	[location of the phenomenon given by coordinates]

*In the case of the same phenomenon covering more than one area within the FIR, these elements can be repeated, as necessary. The METWSG recommended best practice was that, with the exception of SIGMET for Volcanic ash and tropical cyclone, SIGMET should only contain one instance of a phenomenon.

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

location indicator <name> FIR
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 may be 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. When the phenomenon is based on a forecast without a reported observation, the time given for GGggZ represents the time of commencement of the phenomenon.

Examples:

OBS
OBS AT 0140Z
FCST
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 in degrees, or in degrees and minutes). 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 number of points given with their coordinates should be no less than 4 and normally no greater than 7 noting the first point is repeated (the end point should be a repeat of the start point). The recommended best practice is to list the coordinates in a clockwise order as this is an XML/GML convention.

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:

1) An area of the FIR defined by a polygon. The end point should be a repeat of the start point.

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

For example:

WI N6030 E02550 – N6055 E02500 – N6050 E02630 – N6030 E02550

WI N60 E025 – N62 E027 – N58 E030 – N59 E026 – N60 E025

Use of polygons with complex FIR boundaries

Annex 3 (18th Edition, July 2013) specifies that the points of a polygon '… should be kept to a minimum and should not normally exceed seven'. However, some FIR boundaries are complex, and it would be unrealistic to expect that a polygon would be defined that followed such boundaries exactly. As such, some States have determined that the polygon points be chosen in relation to the complex boundary such that the FIR boundary approximates, but is wholly encompassed by, the polygon, and that any additional area beyond the FIR boundary be the minimum that can be reasonably and practically described. Caution should however be exercised in those instances where international aerodromes are located in close proximity to such a complex FIR boundary. **Appendix G** provides examples and advice with regard to describing such areas.

The following are additional ways to describe the location of the phenomenon:

2a) In a sector of the FIR defined relative to specified line joining two points on the FIR boundary.

With reference to a LINE, described with lat/long of two points. These points should be on the FIR boundary, or so close to the FIR boundary to leave no doubt as to the intent that the points should be considered as being on the FIR boundary.

N OF, NE OF, E OF, SE OF, S OF, SW OF, W OF, NW OF [LINE] <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> - <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>

For example:

NE OF LINE N2500 W08700 – N2000 W08300

W OF LINE N20 E042 – N35 E045

Although currently optional for this construction, the METWSG identified that, as best practice, SIGMET should explicitly include the word 'LINE' for this method.

2b) In a sector of the FIR defined relative to a line of latitude and a line of longitude (effectively a quadrant)

N OF or S OF <Nnn[nn]> or <Snn[nn]> AND E OF or W OF <Ennn[nn]> or <Wnnn[nn]>

For example:

N OF N1200 AND E OF W02530

S OF N60 AND W OF E030

2c) In a sector of the FIR defined relative to a line of latitude or longitude (effectively a segment)

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

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

For example:

N OF S2230

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

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

For example:

W OF E080

3) At a specific point within the FIR

At a specific point within the FIR, indicated by a single coordinate of latitude and longitude

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

For example:

N5530 W02230

S23 E107

More details on reporting of the location of the phenomenon are given in Appendix 6 to Annex 3 and in **Appendix E and G** 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>**;

  For example: **FL320**

- 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;

  For example: **SFC/FL320**, **SFC/3000M**, **SFC/9900FT**

- 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;

  For example: **FL250/290**

- reporting the top of a phenomenon with reference to one flight level (base is unknown but top is known) – **TOP FL<nnn>**

  For example: **TOP FL350**

- reporting a phenomenon with reference to one flight level and the abbreviation ABV (top is unknown, but base is known) –**ABV FL<nnn>**

  For example: **ABV FL350**

- reporting the top of a phenomenon with reference to one flight level and the abbreviation ABV – **TOP ABV FL<nnn>**

Additional examples:

EMBD TS … TOP ABV FL340
SEV TURB … FL180/210
SEV ICE … SFC/FL150
SEV MTW … FL090/180

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 (**N**, **NNE**, **NE**, **ENE**, **E**, **ESE**, **SE**, **SSE**, **S**, **SSW**, **SW**, **WSW**, **W**, **WNW**, **NW**, **NNW**). Speed 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
STNR

Note. – When also including a forecast position, care should be taken to ensure that the rate of movement and forecast position are consistent.

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

3.4.3.1.8 Forecast position at the end of the SIGMET validity period

Note. – Annex 3 (18th Edition, July 2013) enables SIGMET to contain explicit forecast position information relating to hazardous phenomena other than volcanic ash or tropical cyclone.

[FCST<GGggZ><location of phenomenon given by coordinates>]

Forecast position of the phenomenon at the end of the validity period of the SIGMET message is conditional, included wherever applicable, in addition to movement/expected movement. GGgg is the time in hours and minutes (UTC) and should be the same as the end of validity period as given in the first line of the SIGMET message. The location of the phenomenon is indicated by one of the ways described in 3.4.3.1.4 above. The levels of the phenomenon remain fixed throughout the SIGMET validity period because there is currently no provision for indicating changes to the levels affected by phenomena between the initial position and the forecast position. As such, and as per footnote 31 to Table A6-1 of Annex 3 (18th Edition, July 2013), it should be assumed that the levels affected remain the same for both initial and forecast positions. Note that when movement/expected movement is given as STNR the 'forecast position' section can be omitted from the SIGMET.

Example:

FCST 1630Z WI N4519 E02849 – N4400 E02750 – N4338 E02533 – N4351 E02250 – N4519 E02849

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

3.4.4 Structure of the meteorological part of WV 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			Observed or forecast volcanic ash cloud
		Name	Position	Phenomenon	
<CCCC>	<name> FIR [UIR, FIR/UIR, CTA]	[VA ERUPTION] [MT <name>]	[PSN <position>]	VA CLD	OBS [AT <GGggZ>] or FCST [AT <GGggZ>]

5			6
Extent of the cloud			Movement or expected movement*
Location*	Level (Flight level and extent)*		
Location (referring to latitude and longitude in degrees and minutes)	FL<nnn/nnn> *or* SFC/FL<nnn> note that this column is used with the previous location column- if this column and the previous column are selected, do not use the next column	FLnnn/nnn [APRX nnnKM BY nnnKM (APRX nnnNM BY nnnNM)] [nnKM WID LINE BTN (nnNM WID LINE BTN)] [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]] [-Nnn[nn] *or* Snn[nn] Wnnn[nn] *or* Ennn[nn]]] Expansion of above provided in 3.4.4.4 note that if this column is used, the previous two columns are not used	MOV <direction> <speed> KMH[KT] or STNR

7	8	
Changes in intensity*	Volcanic ash cloud forecast at the end of the period of validity*	
	FCST time	Position
INTSF or WKN or NC	FCST <GGggZ>	VA CLD APRX [nnKM WID LINE BTN (nnNM WID LINE BTN)] <lat,lon> - <lat,lon> - … [AND]** or ENTIRE FIR or ENTIRE CTA or NO VA EXP

*In the case of the same phenomenon covering more than one area within the FIR, these elements can be repeated, as necessary.
**To be used for two volcanic ash clouds simultaneously affecting the FIR concerned.

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.

For example:

VA ERUPTION PSN N27 W017 VA CLD

VA ERUPTION MT ASHVAL PSN S1530 E07315 VA CLD

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

OBS [AT <GGgg>Z]
or
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 in the next 12 hours, SIGMET shall be issued, and the abbreviation FCST [AT <GGgg>Z] shall be used. The time given for GGggZ represents the time of commencement of the phenomenon. If the exact time of the observation or forecast is not known, the time is not included.

Examples:

OBS
OBS AT 0100Z
FCST
FCST AT 1200Z

3.4.4.4 Location and level or level and extent of the volcanic ash cloud

Option 1 – location and level

WI <P1(lat,lon) - P2(lat,lon) - … > SFC/FL<nnn> ***or*** **FL<nnn/nnn>**
or
ENTIRE FIR[CTA] SFC/FL<nnn> ***or*** **FL<nnn/nnn>**

For example:

WI N6030 E02550 – N6055 E02500 – N6050 E02630 – N6030 E02550 SFC/FL300

WI N60 E025 – N62 E027 – N58 E030 – N59 E026 – N60 E025 SFC/FL300

ENTIRE FIR SFC/FL300

ENTIRE CTA FL100/320

Note. – The points of a polygon should be provided in a clockwise order, and the end point should be a repeat of the start point.

Use of polygons with complex FIR boundaries.

Annex 3 (18th Edition, July 2013) specifies that the points of a polygon '…should be kept to a minimum and should not normally exceed seven'. However, some FIR boundaries are complex and it would be unrealistic to expect that a polygon would be defined that followed such boundaries exactly. As such, some States have determined that the polygon points be chosen in relation to the complex boundary such that the FIR boundary approximates, but is wholly encompassed by, the polygon, and that any additional area beyond the FIR boundary be the minimum that can be reasonably and practically described. Caution should however be exercised in those instances where international aerodromes are located in close proximity to such a complex FIR boundary. **Appendix G** provides examples and advice with regard to describing such areas.

Option 2 – level and extent
FL<nnn/nnn> APRX nnnKM BY nnnKM <P1(lat,lon) – P2(lat,lon) >
or
FL<nnn/nnn> APRX nnnNM BY nnnNM <P1(lat,lon) – P2(lat,lon) >
or
FL<nnn/nnn> nnKM WID LINE BTN <P1(lat,lon) – P2(lat,lon) - …>
or
FL<nnn/nnn> nnNM WID LINE BTN <P1(lat,lon) – P2(lat,lon) - …>

noting that two points would suffice in using APRX and two or more points used for WID LINE BTN

WI <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
ENTIRE FIR **ENTIRE CTA**	Indicating the VA cloud is forecast to be or present in the horizontal limits of the entire FIR or CTA
SFC/FL<nnn> ***or*** **FL<nnn/nnn>**	The layer of the atmosphere where the VA cloud is situated, given by two levels from the lower to the upper boundary of the cloud
APRX nnnKM BY nnnKM <P1(lat,lon) – P2(lat,lon) > ***or*** **APRX nnnNM BY nnnNM <P1(lat,lon) – P2(lat,lon) >** ***or*** **nnKM WID LINE BTN <P1(lat,lon) – P2(lat,lon) - …>** ***or*** **nnNM WID LINE BTN <P1(lat,lon) – P2(lat,lon) - …>**	Approximate horizontal extent of the VA cloud that may be expressed as an area KM by KM or NM by NM centred on a line described by two points <P1(lat,lon) – P2(lat,lon)> Approximate horizontal extent of the VA cloud that may be described as a zone of specified width in KM or NM, centred on a line described by two or more points <P1(lat,lon) – P2(lat,lon) - …>

[1] The format of geographical coordinates reporting in SIGMET is given in **Appendix E** and examples given in **Appendix G.**

The METWSG recommended best practice was to avoid use of APRX nnnKM BY nnnKM <P1(lat,lon) – P2(lat,lon)> and APRX nnnNM BY nnnNM <P1(lat,lon) – P2(lat,lon)>. As such, in this guide no examples are provided.

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:

FL150/210 50KM WID LINE BTN S0530 E09300 – N0100 E09530 – N1215 E11045 – N1530 E01330

3.4.4.5 Movement or expected movement of the VA cloud

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

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

Note. – When also including a forecast position, care should be taken to ensure that the rate of movement and forecast position are consistent.

3.4.4.6 Expected changes in intensity

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

INTSF
or
WKN
or
NC

For the EUR region, the recommended best practice is that expected changes in intensity should be omitted for Volcanic Ash SIGMET.

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

3.4.4.7.1 The description of the expected position of the volcanic ash cloud is described as a polygon or an area centred on a line.

As a polygon, using the following format:
FCST <GGggZ> VA CLD APRX<P1(lat,lon) – P2(lat,lon) - …>

Example :

FCST 1800Z VA CLD APRX N6300 W02000 – N6030 W01700 – N5815 W02230 – N6100 W02400 – N6300 W02000…

Or as an area centred on a line (of specified width in KM), using the following format:
FCST <GGggZ> VA CLD APRX nnKM WID LINE BTN<P1(lat,lon) – P2(lat,lon) - …>

Example:

FCST 1800Z VA CLD APRX 90KM WID LINE BTN S4000 W09000 – S4300 W08500 – S3800 W07500 – S4500 W06000…

Or as an area centred on a line (of specified width in NM), using the following format:

FCST<GGggZ> VA CLD APRX nnNM WID LINE BTN <P1(lat,lon) – P2(lat,lon) - …>

Example:

FCST 1800Z VA CLD APRX 55NM WID LINE BTN S4000 W09000 – S4300 W08500 – S3800 W07500 – S4500 W06000…

3.4.4.7.2 The **GGggZ** group should indicate the end of the validity period given in the first line of the SIGMET message.

3.4.4.7.3 The description of the expected position of the volcanic ash cloud when the volcanic ash cloud is expected to extend over the entire FIR or CTA is given as:

FCST <GGggZ> ENTIRE FIR
or
FCST <GGggZ> ENTIRE CTA

3.4.4.7.4 The description of the expected position of the volcanic ash cloud when the volcanic ash cloud is expected to be completely out of the FIR or CTA is given as:

FCST<GGggZ> NO VA EXP

3.4.4.7.5 Inclusion of the forecast position of the volcanic ash cloud at the end of the validity period of the SIGMET message is conditional, wherever applicable, in addition to movement or expected movement (Key 'C' in Table A6-1 of Annex 3). The forecast position is not included in the SIGMET when movement or expected movement is given as STNR (a forecast position = an initial position) or when WV SIGMETs (a 'start of eruption SIGMET', an 'interim SIGMET') are being issued by MWO immediately after the outbreak of the volcanic eruption and entrance of volcanic ash into the atmosphere (forecast position is not yet available).

Note. – Currently, there is no provision for indicating changes to the levels affected by volcanic ash between the initial position and the forecast position. As such, as per footnote 31 to Table A6-1 of Annex 3 (18th Edition, July 2013), it should be assumed that the levels affected remain the same for both initial and forecast positions.

3.4.4.8 Use of multiple layers

3.4.4.8.1 The use of more than one layer is necessary when the wind direction changes with height which causes the VA cloud to spread into different directions at different heights. In describing the VA cloud, up to two different layers can be used in a single SIGMET message when 'forecast position' is also used since it is assumed that the levels affected remain the same for both initial and forecast positions. The repeated elements include location, level (or level and horizontal extent) movement or expected movement, changes in intensity, and forecast position (at the end of the validity period of the SIGMET message). Note 21 of Table A6-1 in Appendix 6 of Annex 3 apply to these elements. In the example below, 'AND' is emboldened to make it easier to identify the second layer of ash, the second layer of ash is italicized. Of course, this method of highlighting the separate layers is not possible in real messages due to format limitations.

Example:
…WI N5650 E02540 – N5745 E02540 – N5745 E02445 – N5650 E02445 – N5650 E02540 SFC/FL200 MOV N 25KT NC FCST 1200Z VA CLD APRX N5840 E02540 – N5935 E02540 – N5935 E02445 – N5840 E02445 – N5840 E02540 **AND** *WI N5650 E02200 – N5745 E02200 – N5745 E02105 – N5650*

E02105 – N5650 E02200 FL200/350 MOV N 25KT NC FCST 1200Z VA CLD APRX N5840 E02200 – N5935 E02200 – N5935 E02105 – N5840 E02105 – N5840 E02200

With regard to the portrayal of complex volcanic ash events (which implies multiple areas of volcanic ash at multiple levels) basic guidance in this regard is provided in **Appendix G**.

Footnote 26 of Table A6-1 permits the word 'AND' in the 'Forecast position' section "*To be used for [describing] two volcanic ash clouds or two centres of tropical cyclones simultaneously affecting the FIR concerned*".

Note: Graphical SIGMET for complex volcanic ash events (Model SVA) and the assessment of volcanic ash advisory replacing the SIGMET for volcanic ash is being examined by an ad-hoc group of the International Airways Volcano Watch Operations Group (IAVWOPSG/6 Conclusion 6/21 refers). Therefore, the EUR METG should monitor global developments on the provision of providing volcanic ash information for international civil aviation as they relate to possible changes to EUR Doc 014 in the future.

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. This is in support to Annex 3, 7.1.2 which requires "*SIGMET information shall be cancelled when the phenomena are no longer occurring or are no longer expected to occur in the area*".

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 that represents the remaining time of the original period of validity, and
- second line, which contains the location indicator and name of the FIR, UIR or CTA, the combination CNL SIGMET, followed by the sequential number of the original SIGMET and its original validity period.

Examples:

1. Cancellation of a WS 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 WV 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 131515/132115 VA MOV TO YUDO FIR=

Note. *– For SIGMET for volcanic ash only, the FIR (YUDO in the example) where the volcanic ash has moved into is permitted to be indicated.*

3.4.5.2 If it is known that an existing SIGMET no longer accurately describes the existing or expected future evolution of the phenomena a new SIGMET, correctly describing the hazard should be issued, followed immediately by a cancellation of the original, erroneous SIGMET. The new SIGMET should be issued before the cancellation in order to ensure there is always a SIGMET in force and that the cancellation is not mistakenly understood to mean the hazard has completely dissipated.

In order to prevent unwanted supression or overwriting of SIGMET messages, the WMO AHL must always be unique. This may mean issuing SIGMET bulletins with at least 1 minute difference in the issue time.

Originally issued SIGMET, later determined to no longer be accurate (bold text identifies points that will be changed):

WSAU21 ADRM 201855
YBBB SIGMET E01 VALID 202000/202400 YPDM-
YBBB BRISBANE FIR SEV TURB FCST WI S1530 E13700 – **S1900 E13730 – S2000 E13130** – S1600 E13500 – S1530 E13700 SFC/FL120 MOV SE 12KT WKN=

Updated SIGMET (bold text identifies points that have been changed):

WSAU21 ADRM 202155
YBBB SIGMET E02 VALID 202155/202400 YPDM-
YBBB BRISBANE FIR SEV TURB FCST WI S1530 E13700 – **S2000 E13750 – S2045 E13245** – S1600 E13500 – S1530 E13700 SFC/FL120 MOV SE 12KT WKN=

Cancellation SIGMET (this cancels the original SIGMET):

WSAU21 ADRM 202156
YBBB SIGMET E03 VALID 202156/202400 YPDM-
YBBB BRISBANE FIR CNL SIGMET E01 202000/202400=

3.4.5.3 If a SIGMET was issued with an error (e.g. incorrect FL), a new SIGMET with the correct information should be issued, followed immediately by a cancellation of the original, incorrect SIGMET. Avoid the use of COR as it is 1) not in Annex 3; 2) will not be supported by IWXXM; and 3) is not clear to the users what element is corrected. The new SIGMET should be issued before the cancellation in order to ensure there is always a SIGMET in force and that the cancellation is not mistakenly understood to mean the hazard is no longer present.

Originally issued SIGMET, subsequently determined to contain an error (bold text identifies the element that is considered to be incorrect):

WSAU21 ADRM 201855
YBBB SIGMET E04 VALID 202000/202300 YPDM-
YBBB BRISBANE FIR SEV TURB FCST WI S1530 E13700 – S2000 E13750 – S2045 E13245 – S1600 E13500 – S1530 E13700 SFC/**FL020** MOV SE 12KT WKN=

Updated SIGMET (bold text identifies what has been changed):

WSAU21 ADRM 201900
YBBB SIGMET E05 VALID 202000/202300 YPDM-
YBBB BRISBANE FIR SEV TURB FCST WI S1530 E13700 – S2000 E13750 – S2045 E13245 – S1600 E13500 – S1530 E13700 SFC/**FL120** MOV SE 12KT WKN=

Cancellation SIGMET (this cancels the original incorrect SIGMET)

WSAU21 ADRM 201905
YBBB SIGMET E06 VALID 202000/202300 YPDM-
YBBB BRISBANE FIR CNL SIGMET E04 202000/202300=

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. An inventory on regional exchange of GAMET and graphical products to support low-level flights is provided at the following link: http://www.icao.int/EURNAT/Pages/welcome.aspx (EUR/NAT Documents ---> EUR Documents ---> MET Guidance ---> Headers and exchange – GAMET for LLF Flight).

4.1.4 AIRMET information is prepared in abbreviated plain language using approved ICAO abbreviations, a limited number of non-abbreviated words, 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	Location indicator and name of the FIR/CTA, or part thereof for which the AIRMET is issued^	Description of the phenomenon	Observed or forecast	Location (referring to latitude and longitude (in degrees and minutes))*	Level*
<CCCC>	<name> FIR[/n]	<Phenomenon>	OBS [AT <GGggZ>] or FCST [AT <GGggZ>]	Geographical location of the phenomenon given by coordinates	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

^when FIR is divided in sub-areas: separate AIRMET should be issued for each sub-area, as necessary. Issued AIRMET and GAMET should cover the same sub-area.

*In the case of the same phenomenon covering more than one area within the FIR, these elements can be repeated, as necessary.

4.3.3.1.1 Location indicator and name of the FIR

location indicator <name> FIR[/n]

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 ("An area of changing terrain profile where the changes of terrain elevation exceed 900m (3000 ft) within a distance of 18.5 km (10.0 NM) – Chap 1, Vol II, ICAO Doc 8168 - *Aircraft Operations*), 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 may be 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. When the phenomenon is based on a forecast without a reported observation, the time given for GGggZ represents the time of commencement of the phenomenon.

Examples:

OBS
OBS AT 0140Z
FCST
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 in degrees and minutes). 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 number of coordinates should be no less than 4 and normally no greater than 7 noting the first point is repeated (the end point should be a repeat of the start point). The recommended best practice is to list the coordinates in a clockwise order as this is an XML/GML convention.

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:

1) An area of the FIR defined by a polygon. The end point should be a repeat of the start point.

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]>-
<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]>-

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

For example:

WI N6030 E02550 – N6055 E02500 – N6050 E02630 – N6030 E02550

WI N60 E025 – N62 E027 – N58 E030 – N59 E026 – N60 E025

Use of polygons with complex FIR boundaries

Annex 3 (18th Edition, July 2013) specifies that the points of a polygon '… should be kept to a minimum and should not normally exceed seven'. However, some FIR boundaries are complex, and it would be unrealistic to expect that a polygon would be defined that followed such boundaries exactly. As such, some States have determined that the polygon points be chosen in relation to the complex boundary such that the FIR boundary approximates, but is wholly encompassed by, the polygon, and that any additional area beyond the FIR boundary be the minimum that can be reasonably and practically described. Caution should however be exercised in those instances where international aerodromes are located in close proximity to such a complex FIR boundary. **Appendix G** provides examples and advice with regard to describing such areas.

The following are additional ways to describe the location of the phenomenon:

2a) In a sector of the FIR defined relative to specified line joining two points on the FIR boundary.

With refrence to a LINE, described with lat/long of two points. These points should be on the FIR boundary, or so close to the FIR boundary to leave no doubt as to the intent that the points should be considered as being on the FIR boundary.

N OF, NE OF, E OF, SE OF, S OF, SW OF, W OF, NW OF [LINE] <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]> - <Nnn[nn]> or <Snn[nn]> <Wnnn[nn]> or <Ennn[nn]>

For example:

NE OF LINE N2500 W08700 – N2000 W08300

W OF LINE N20 E042 – N35 E045

For consistency with SIGMET encoding, EUR best practice for AIRMET should explicitly include the word 'LINE' for this method.

2b) In a sector of the FIR defined relative to a line of latitude and a line of longitude (effectively a quadrant)

N OF or S OF <Nnn[nn]> or <Snn[nn]> AND E OF or W OF <Ennn[nn]> or <Wnnn[nn]>

For example:

N OF N1200 AND E OF W02530

S OF N60 AND W OF E030

2c) In a sector of the FIR defined relative to a line of latitude or longitude (effectively a segment)

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

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

  For example:

  N OF S2230

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

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

  For example:

  W OF E080

3) At a specific point within the FIR

At a specific point within the FIR, indicated by a single coordinate of latitude and longitude

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

For example:

N5530 W02230

S23 E107

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>**;

For example: **FL090**

- 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;

  For example: **SFC/FL100**, **SFC/3000M**, **SFC/9900FT**

- 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;

  For example: **FL070/090**

- reporting the top of a phenomenon with reference to one flight level (base is unknown but top is known) – **TOP FL<nnn>**

  For example: **TOP FL080**

- reporting a phenomenon with reference to one flight level and the abbreviation ABV (top is unknown, but base is known) –**ABV FL<nnn>**

  For example: **ABV FL060**

- reporting the top of a phenomenon exceeding the vertical limit of AIRMET message and the abbreviation ABV – **TOP ABV FL<nnn>**

Additional Examples:

ISOL CB … TOP ABV FL100
MOD TURB … FL050/080
MOD ICE … SFC/FL090
MOD MTW … FL060/180

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 (**N**, **NNE**, **NE**, **ENE**, **E**, **ESE**, **SE**, **SSE**, **S**, **SSW**, **SW**, **WSW**, **W**, **WNW**, **NW** and **NNW)**. Speed 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
STNR

Note. – Annex 3 (18th Edition, July 2013) does not enable AIRMET to contain explicit forecast position as per SIGMET message.

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. This is in support to Annex 3, 7.2.2 which requires "*AIRMET information shall be cancelled when the phenomena are no longer occurring or are no longer expected to occur in the area*".

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 (see 4.3.4.2).

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 that represents the remaining time of the original period of validity, 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 original 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 151650
YUDD AIRMET 2 VALID 151650/151800 YUSO-
YUDD SHANLON FIR CNL AIRMET 1 151520/151800=

4.3.4.2 If it is known that an existing AIRMET no longer accurately describes the existing or expected future evolution of the phenomena a new AIRMET, correctly describing the hazard should be issued, followed immediately by a cancellation of the original, erroneous AIRMET. The new AIRMET should be issued before the cancellation in order to ensure there is always an AIRMET in force and that the cancellation is not mistakenly understood to mean the hazard has completely dissipated.

In order to prevent unwanted suppression or overwriting of AIRMET messages, the WMO AHL must always be unique. This may mean issuing AIRMET bulletins with at least 1 minute difference in the issue time.

Originally issued AIRMET, later determined to no longer be accurate (bold text identifies points that will be changed):

WSAU21 ADRM 201855
YBBB AIRMET E01 VALID 202000/202400 YPDM-
YBBB BRISBANE FIR MOD TURB FCST WI **S1900 E13730 – S2000 E13130** -
S1600 E13500 – S1530 E13700 SFC/FL120 MOV SE 12KT WKN=

Update AIRMET (bold text identifies points that have been changed):

WSAU21 ADRM 202155
YBBB AIRMET E02 VALID 202155/202400 YPDM-
YBBB BRISBANE FIR MOD TURB FCST WI S1530 E13700 – **S2000 E13750 – S2045 E13245** – S1600 E13500 – S1530 E13700 SFC/FL120 MOV SE 12KT WKN=

Cancellation AIRMET (this cancels the original AIRMET):

WSAU21 ADRM 202156
YBBB AIRMET E03 VALID 202155/202400 YPDM-
YBBB BRISBANE FIR CNL AIRMET E01 202000/202400=

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
EXP	Expected
FCST	Forecast
FG	Fog
FIR	Flight information region (link to global FIR map: http://gis.icao.int/flexviewer/)
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)*
SFC	Surface
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*

---APPENDIX B---

List of EUR SIGMET (WS, WV) and AIRMET (WA) headers (blue highlight – verification needed by State)

Updated 26 October 2015 – *note that updates to Appendix B during 2014 will be provided at the following website:* http://www.icao.int/EURNAT/Pages/welcome.aspx (EUR/NAT Documents ---> EUR Documents ---> MET Guidance ---> Headers – EUR SIGMET and AIRMET)

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
Albania	LATI	Tirana/Tirana	WSAB31 LATI	WVAB31 LATI	WAAB31 LATI	LAAA	LAAA	Tirana
Algeria	DAMM	Alger/CRT	WSAL31 DAAL	WVAL31 DAAL		DAAA	DAAA	Alger (ACC)
Armenia	UDYZ	Yerevan	WSAY31 UDYZ	WVAY31 UDYZ		UGEZ	UDDD	Yerevan
Austria	LOWW	Wien/Schwechat	WSOS31 LOWW	WVOS31 LOWW	WAOS41 LOWW	LOVV	LOVV	Wien
Azerbaijan	UBBB	Baku	WSAJ31 UBBB	WVAJ31 UBBB	WAAJ31 UBBB	UBBB	UBBA	Baku
Belarus	UMMS	Minsk-2	WSBY31 UMMS	WVBY31 UMMS		UMMV	UMMV	Minsk
Belgium	EBBR	Brussels/National	WSBX31 EBBR	WVBX31 EBBR	WABX31 EBBR	EBBU	EBBU	Brussels(ACC-FIC)
Bosnia And Herzegovina	LQBK	Banja Luka	WSQB31 LQBK	WVQB31 LQBK	N/A	LDZO	LQSB	Sarajevo
Bulgaria	LBSF	Sofia/Vrajbedebna	WSBU31 LBSM	WVBU31 LBSM	WABU31 LBSM	LBSR	LBSR	Sofia
Croatia	LDZA	Zagreb/Pleso	WSRH31 LDZM	WVRH31 LDZM	WARH31 LDZM	LDZO	LDZO	Zagreb
Cyprus	LCLK	Larnaca/Larnaca	WSCY31 LCLK	WVCY31 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 EFIN	WVFI31 EFIN		EFIN	EFIN	Finland
France	LFPW	Toulouse	WSFR34 LFPW	WVFR34 LFPW		LFMM	LFMM	Marseille
France	LFPW	Toulouse	WSFR32 LFPW	WVFR32 LFPW		LFBB	LFBB	Bordeaux
France	LFPW	Toulouse	WSFR31 LFPW	WVFR31 LFPW		LFFF	LFFF	Paris
France	LFPW	Toulouse	WSFR35 LFPW	WVFR35 LFPW		LFRR	LFRR	Brest
France	LFPW	Toulouse	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

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
			WSFR31 LFPW	WVFR31 LFPW		LFRR	LFRR	France UIR
			WSFR31 LFPW	WVFR31 LFPW		LFBB	LFBB	France UIR
Georgia	UGTB	Tbilisi	WSGG31 UGGG	WVGG31 UGGG	WAGG31 UGGG	UGGG	UGGG	Tbilisi
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	WAGR31 LGAT WAGR32 LGAT WAGR33 LGAT WAGR34 LGAT	LGGG	LGGG	Athinai
Hungary	LHBP	Budapest	WSHU31 LHBM	WVHU31 LHBM	WAHU41 LHBM	LHCC	LHCC	Budapest
Ireland	EINN	Shannon	WSIE31 EISN	WVIE31 EISN	N/A	EISN	EISN	Shannon
Israel	LLBD	Meteorological Service	WSIS31 LLBD	WVIS31 LLBD	WAIS31 LLBD		LLLL	Tel-Aviv FIR and SRR
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
Kazakhstan	UATT	Aktobe	WSKZ31 UATT	WVKZ31 UATT		UATT	UATT	Aktobe
Kazakhstan	UAAA	Almaty	WSKZ31 UAAA	WVKZ31 UAAA		UAAA	UAAA	Almaty
Kazakhstan	UACC	Astana	WSKZ31 UACC	WVKZ31 UACC		UACC	UACC	Astana
Kazakhstan	UAII	Shymkent	WSKZ31 UAII	WVKZ31 UAII		UAII	UAII	Shymkent
Kyrgyzstan	UCFM	Bishkek/Manas	WSKY31 UCFM	WVKY31 UCFM		UCFM and/or UAFM (note UAFM not defined in 7910)	UCFM	Bishkek/Manas
	UCFO	Osh	WSKY31 UCFO	WVKY31 UCFO		?	UCFO	Osh

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
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
Morocco	GMMC	(not in Doc 7910)	WSMC31 GMMC	WVMC31 GMMC			GMMM	Casablanca (ACC/FIC)
Netherlands	EHDB	De Bilt	WSNL31 EHDB	WVNL31 EHDB	WANL31 EHDB	EHAA	EHAA	Amsterdam
Norway	ENMI	Oslo	WSNO31 ENMI	WVNO31 ENMI	WANO31 ENMI	ENOS	ENOR	Norway
Norway	ENVV	Bergen	WSNO32 ENMI	WVNO32 ENMI	WANO32 ENMI	ENSV	ENOR	Norway
Norway	ENVV	Bergen	WSNO34 ENMI	WVNO34 ENMI	WANO34 ENMI	ENBD	ENOR	Norway
Norway	ENVN	Tromso	WSNO35 ENMI	WVNO35 ENMI	WANO35 ENMI	ENBD	ENOR	Norway
Norway	ENVN	Tromso	WSNO36 ENMI	WVNO36 ENMI	WANO36 ENMI	ENOB	ENOB	Bodo Oceanic FIR/UIR
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
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	Bucuresti
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	USCC	Chelyabinsk	WSRA33 RUEK	WVRA33 RUEK	N/A	USCC	USCC	Chelyabinsk
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	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
Russian Federation	ULKK	Kotlas	WSRS33 RUAA	WVRS33 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	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
Russian Federation	USTR	Roshchino	WSRA32 RUOM		N/A	USTR	USTR	Tyumen
Russian Federation	URRR	Rostov-na-Donu	WSRS31 RURD	WVRS31 RURD		URRV	URRV	Rostov
Russian Federation	USDD	Salekhard	WSRA37 RUOM		N/A	USDD	USDD	Salekhard
Russian Federation	UWWW	Samara/Kurumoch	WSRS31 RUSM	WVRS31 RUSM	N/A	UWWW	UWWW	Samara
Russian Federation	UUYY	Syktyvkar	WSRS32 RUAA	WVRS32 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

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
Russian Federation	ULWW	Vologda	WSRS34 RUAA	WVRS34 RUAA	N/A	ULWW	ULWW	Vologda
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
Serbia	LYBE	Beograd/Surcin	WSYG31 LYBM	WVYG31 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	Gran Canaria (MET)	WSCR31 LEMM	WVCR31 LEMM	WACR40 LEMM	GCCC	GCCC	Canarias FIC/ACC
Spain	LEVA	Valencia MET	WSSP32 LEMM	WVSP32 LEMM	WASP42 LEMM	LECB	LECB	Barcelona FIC/ACC
	LEVA	Valencia MET	WSSP31 LEMM	WVSP31 LEMM	WASP40 LEMM (Area 1 – LECM MADRID FIR/1…) WASP41 LEMM (Area 2 – LECM MADRID FIR/2…)	LECM	LECM	Madrid FIC/ACC
Sweden	ESSA	Stockholm/Arlanda	WSSN31 ESWI	WVSN31 ESWI	N/A	ESAA	ESAA	Sweden
Switzerland	LSZH	Zurich	WSSW31 LSSW	WVSW31 LSSW	WASW41 LSSW	LSAS	LSAS	Zurich/Geneve
Macedonia, The FYRO	LWSK	Skopje	WSMJ31 LWSK	WVMJ31 LWSK	N/A	LWSS	LWSS	Skopje
Tajikistan	UTDD	Dushanbe	WSTA31 UTDD				UTDD	Dushanbe
Tunisia	DTTA	Tunis/Carthage	WSTS31 DTTA	WVTS31 DTTA			DTTC	Tunis
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	Kyiv	WSUR31 UKBV	WVUR31 UKBV	WAUR31 UKBV	UKBV	UKBV	Kyiv
Ukraine	UKDV	Dnipropetrovs’k	WSUR35 UKDV	WVUR35 UKDV	WAUR35 UKDV	UKDV	UKDV	Dnipropetrovs’k
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

State	MWO Loc	MWO name	WS AHL	WV AHL	WA AHL	ATSU Ind	FIR Ind	FIR Name
Ukraine	UKOV	Odesa	WSUR34 UKOV	WVUR34 UKOV	WAUR33 UKOV (Area 2 – UKFV SIMFEROPOL FIR/2)	UKFV	UKFV	Simferopol
Ukraine	UKDV	Dnipropetrovs'k			WAUR36 UKDV (Area 1 – UKFV SIMFEROPOL FIR/1)	UKFV	UKFV	Simferopol
United Kingdom	EGRR	London/Exeter	WSUK31 EGRR	WVUK31 EGRR	N/A	EGTT	EGTT	London
			WSUK33 EGRR	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	WVUZ31 UTNN	N/A	UTNR	UTNR	Nukus
			WSUZ31 UTSS	WVUZ31 UTSS		UTSD	UTSD	Samarkand
Uzbekistan	UTTT	Tashkent/Yuzhny	WSUZ31 UTTT	WVUZ31 UTTT	N/A	UTTR	UTTR	Tashkent/Yuzhny

APPENDIX C

Meteorological phenomena to be reported by SIGMET

Phenomenon	Description	Meaning
Thunderstorm (TS)	OBSC[2] TS EMBD[3] TS FRQ[4] TS SQL[5] TS OBSC TSGR EMBD TSGR FRQ TSGR SQL TSGR	Obscured thunderstorm(s) Embedded thunderstorm(s) Frequent thunderstorm(s) Squall line thunderstorm(s) Obscured thunderstorm(s) with hail Embedded thunderstorm(s) with hail Frequent thunderstorm(s) with hail 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 SEV ICE (FZRA)	Severe icing 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.*

8. Sandstorm/duststorm should be considered heavy whenever the visibility is below 200 m and the sky is obscured.

APPENDIX D

Meteorological phenomena to be reported by AIRMET

Phenomenon[1]	**Description**	**Meaning**
Surface wind speed	SFC WIND (+wind speed and units)	Widespread[2] 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[2] areas affected by reduction of visibility to less than 5 000 m, including the weather phenomenon causing the reduction of visibility
Thunderstorm	ISOL[3] TS OCNL[4] TS ISOL[3] TSGR OCNL[4] TSGR	Isolated thunderstorm(s) Occasional thunderstorm(s) Isolated thunderstorm(s) with hail Occasional thunderstorm(s) with hail
Mountain obscuration	MT OBSC[5]	Mountains obscured
Cloud	BKN CLD (+height) OVC CLD (+height) ISOL[3] CB OCNL[4] CB FRQ[6] CB ISOL[3] TCU OCNL[4] TCU FRQ[6] TCU	Widespread[2] areas of broken cloud Widespread[2] areas of overcast cloud Isolated CB Occasional CB Frequent CB Isolated TCU Occasional TCU Frequent TCU
Icing	MOD[7] ICE	Moderate icing (except for icing in convective clouds)
Turbulence	MOD[8] TURB	Moderate turbulence
Mountain wave	MOD[9] MTW	Moderate mountain wave

Notes:

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

2. The term "widespread" is used to indicate a spatial coverage of more than 75 percent of the area concerned. (reference: EUR eANP, VOLUME II, PART V – METEOROLOGY, EXAMPLE FOR SPECIFIC REGIONAL REQUIREMENTS)

*3. 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)*

*4. 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)*

*5. Mountain obscured (**MT OBSC**) should be used to indicate widespread mountain obscuration. (reference: EUR eANP, VOLUME II, PART V – METEOROLOGY, EXAMPLE FOR SPECIFIC REGIONAL REQUIREMENTS)*

*6. 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)*

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

*8. 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.*

*9. 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*

10. Mountainous area is an area of changing terrain profile where the changes of terrain elevation exceed exceed 900 m (3 000 ft) within a distance of 18.5 km (10.0 NM)

APPENDIX E

Guidelines for reporting geographical coordinates in SIGMET and AIRMET

When reporting geographical coordinates of points in SIGMET or AIRMET 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 – S0530 E09300

S05 E093 – N01 E095 – N12 E110 – S08 E103 – S05 E093

Note 1: The points of a polygon should be provided in a clockwise order, and the end point should be a repeat of the start point.

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, EUR/NAT SIGMET test focal points can be accessed at http://www.icao.int/EURNAT/Pages/welcome.aspx - EUR/NAT Documents; EUR Documents; MET Guidance; EUR/NAT SIGMET test focal points

APPENDIX G

SIGMET EXAMPLES

Note. — The figures used in this appendix are intended simply to clarify the intent of the SIGMET message in abbreviated plain language, and therefore how each SIGMET should be constructed by MWOs and also interpreted by users. The figures used are not intended to give guidance on how a SIGMET in graphical format should be produced.

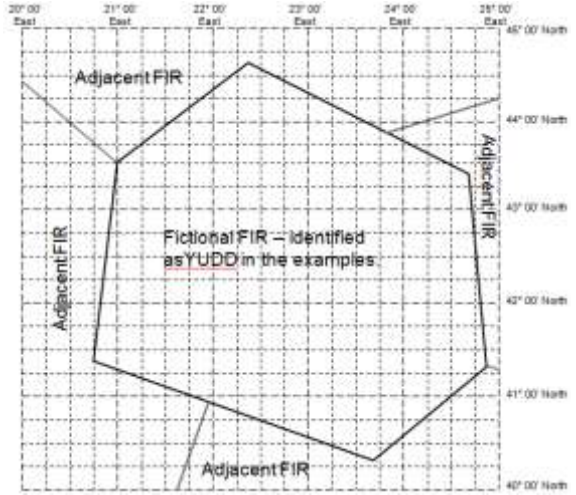
Examples of '**WS**' SIGMET. See the sections for SIGMET for volcanic ash only (WV) and SIGMET for tropical cyclone only (WC) for examples specific to those phenomena.

Contents

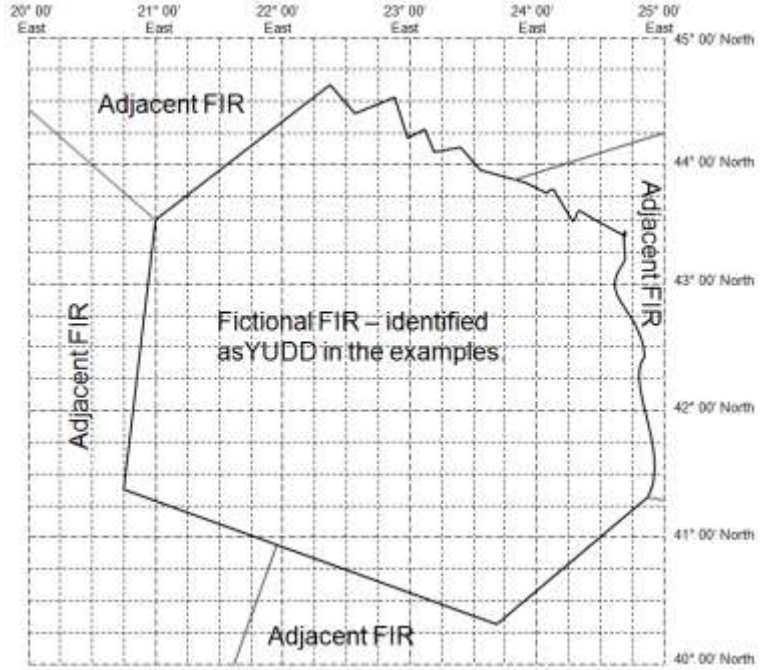
General

Explanation of fictional FIR.

In each of the examples below, a fictional FIR area is indicated, with portions of adjacent FIRs also indicated. The FIR areas are overlaid on a coordinate grid, in order that the example plain language SIGMETs can be explicitly related to the intended meaning.



For some cases, examples are given where the FIR has boundaries that are complex (country borders for example, especially when defined by rivers)



Fictional FIR is used for the examples.

Repetition of start point as last coordinate.

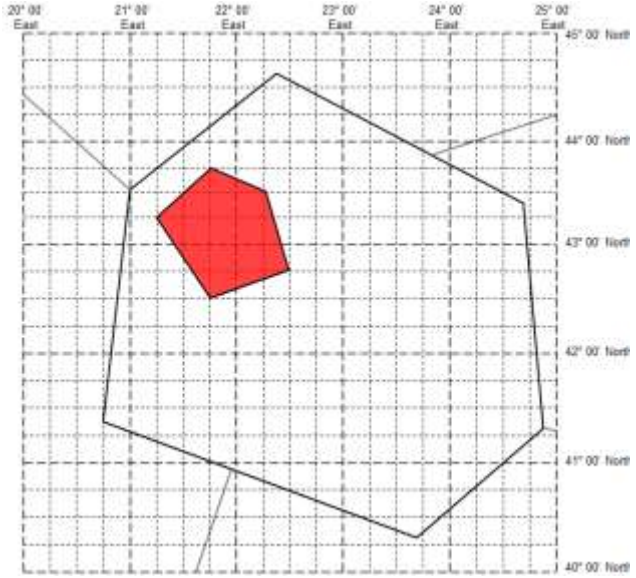
In accordance with practices and procedures laid down for other aeronautical bulletins (i.e. NOTAM), it is recommended that the last point of a polygon is a repeat of the first point of the polygon. This will ensure that the polygon has been closed, and that no points have been omitted.

'Direction' of encoding of the points of a polygon

In accordance with practices and procedures laid down for other aeronautical bulletins and international practice (e.g. BUFR encoding of WAFS significant weather (SIGWX) forecasts), it is recommended that the points of a polygon are provided in a 'clockwise' sense. This assists automated systems in determining the 'inside' of polygons.

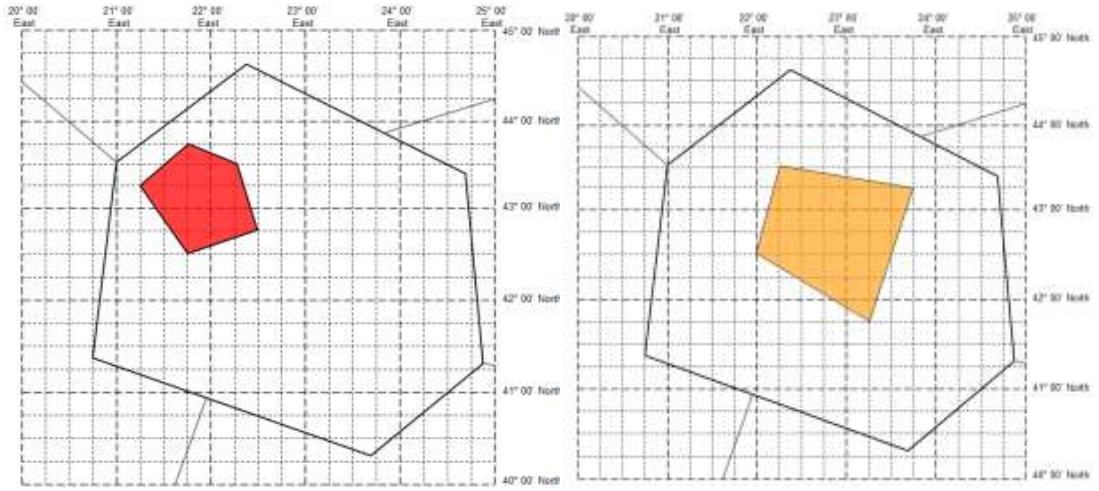
1) An area of the FIR defined by a polygon. The end point should be a repeat of the start point.

When the SIGMET does not include a 'forecast position' section.



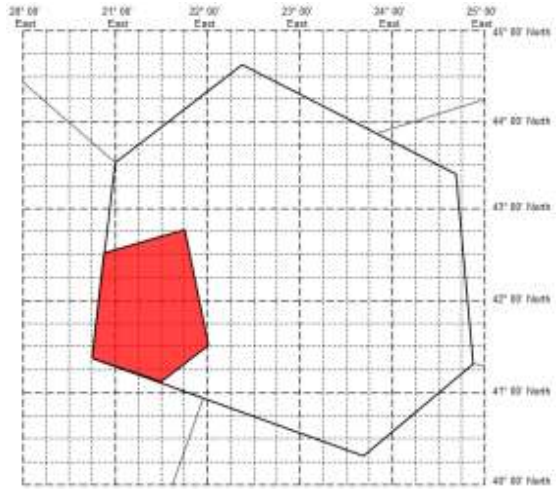
YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST WI N4230 E02145 - N4315 E02115 - N4345 E02145 - N4330 E02215 - N4245 E02230 - N4230 E02145 FL250/370 MOV ESE 20KT INTSF=

With an explicit forecast position:



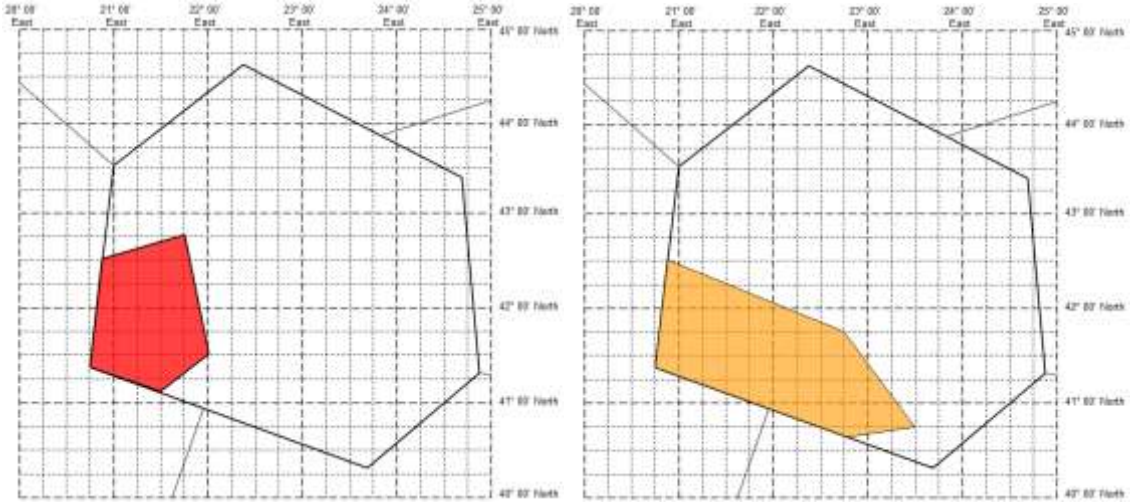
YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST WI N4230 E02145 – N4315 E02115 – N4345 E02145 – N4330 E02215 – N4245 E02230 - N4230 E02145 FL250/370 MOV ESE 20KT INTSF FCST 1600Z WI N4145 E02315 – N4230 E02200 – N4330 E02215 – N4315 E02345 - N4145 E02315=

When the SIGMET does not include a ‘forecast position’ section.



YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST WI N4230 E02052 - N4245 E02145 - N4130 E02200 - N4107 E02130 - N4123 E02045 - N4230 E02052 FL250/370 MOV SE 30KT WKN=

With an explicit forecast position:



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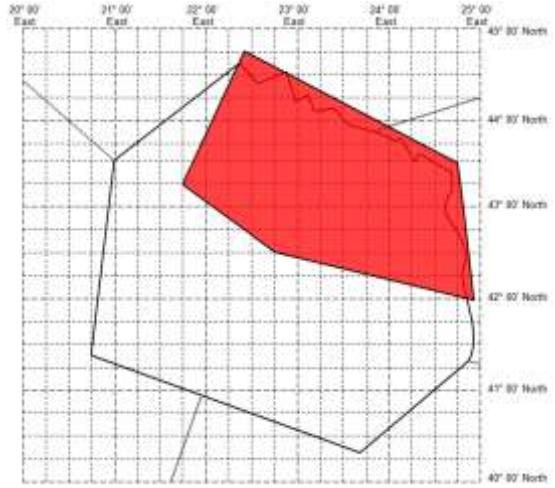
YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST WI N4230 E02052 - N4245 E02145 - N4130 E02200 - N4107 E02130 - N4123 E02045 -
N4230 E02052 FL250/370 MOV SE 30KT WKN FCST 1600Z WI N4230 E02052 - N4145 E02245 - N4045 E02330 - N4040 E02248 -
N4123 E02045 - N4230 E02052=
```

Use of polygons with complex FIR boundaries.

Annex 3 (18th Edition, July 2013) specifies that the points of a polygon '... should be kept to a minimum and should not normally exceed seven'. However, some FIR boundaries are complex, and it would be unrealistic to expect that a polygon would be defined that followed such boundaries exactly. As such, some States have determined that the polygon points be chosen in relation to the complex boundary such that the FIR boundary approximates, but is wholly encompassed by, the polygon, and that any additional area beyond the FIR boundary be the minimum that can be reasonably and practically described. Caution should however be exercised in those instances where international aerodromes are located in close proximity to such a complex FIR boundary.

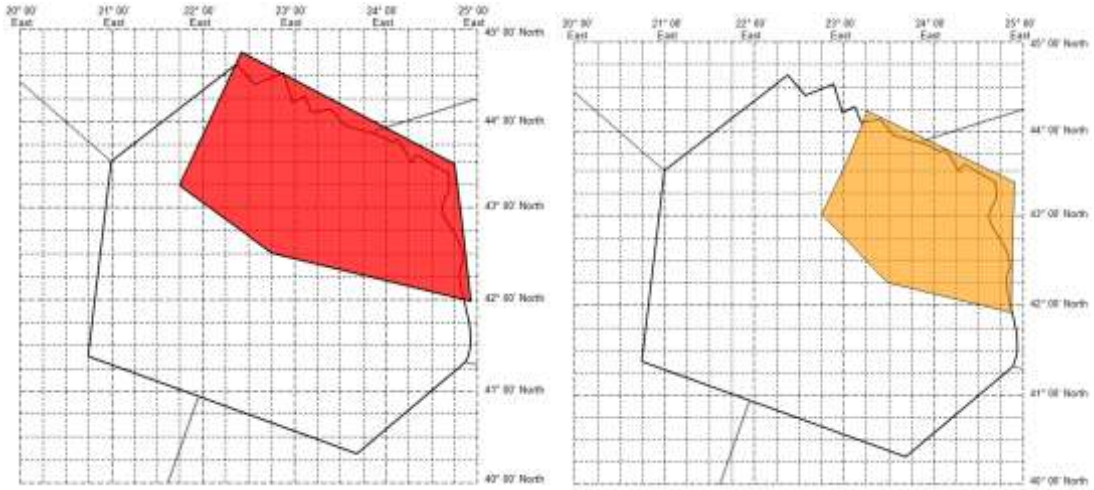
In the examples below, it would not be practical to follow the NE boundaries exactly. The point close to N4330 E02245 is obviously a 'major' turning point along the FIR boundary, but the other, numerous and complex turning points can only be approximated when constrained to seven points.

When the SIGMET does not include a ‘forecast position’ section.



YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST WI N4315 E02145 - N4445 E02245 - N4330 E02445 - N4200 E02455 - N4230 E02245 - N4315 E02145 FL250/370 MOV SE 20KT WKN=

With an explicit forecast position:

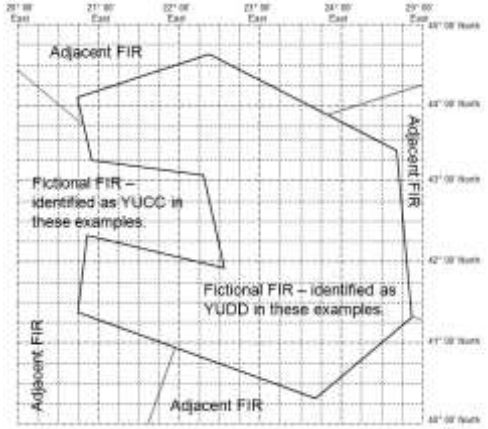


YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST WI N4315 E02145 – N4445 E02245 – N4330 E02445 – N4200 E02455 – N4230 E02245 – N4315 E02145 FL250/370 MOV SE 20KT WKN FCST 1600Z WI N4300 E02245 – N4415 E02315 – N4322 E02452 – N4155 E02445 – N4215 E02330 - N4300 E02245=

There are examples of FIRs that partially surround adjacent FIRs and are what might be described as concave or 'horseshoe' shaped. An example is given below.

a)

b)

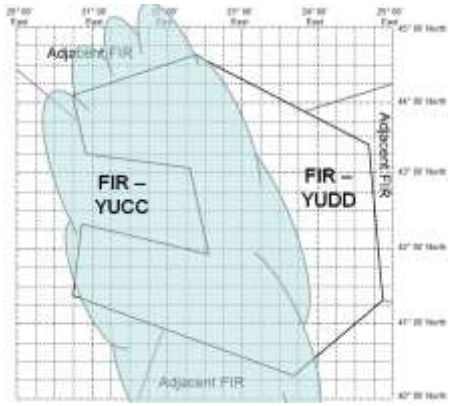


1. Figure 1: Fictional example of a complex 'concave' FIR – YUDD, partially surrounding FIR - YUCC[2]

c) The question arises as to how to encode a SIGMET under circumstances where the hazard affects the outer FIR (YUDD in this case) and the FIR that is partially enclosed (YUCC in this case).

d)

e)



[2] YUDD and YUCC used in this paper are fictional FIRs

2. Figure 2: Fictional example of a complex 'concave' FIR – YUDD partially surrounding FIR – YUCC when both are affected by a meteorological hazard

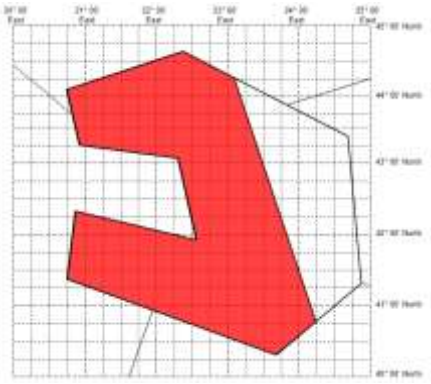
With due regard to removing any possible ambiguity, and also with regard to consistency with protocols for iWXXM versions of SIGMET, the following best practice for the EUR region is provided.

In these examples, it is taken as accepted that MWOs are coordinating their SIGMETs. The clarification sought is how the SIGMET (or AIRMET) should be compiled for an FIR that partially surrounds another FIR.

In the examples below, the area indicated in red is taken as representing the meteorological hazard.

Example 1)

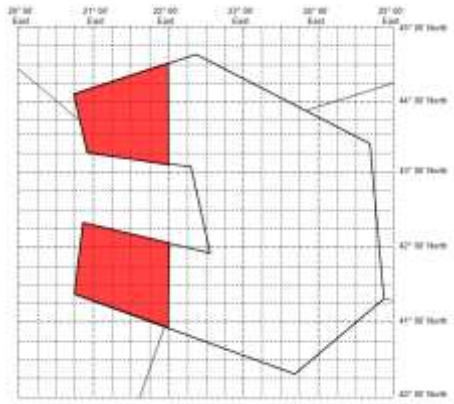
In this example, it is considered that the situation below could be encoded as a single, simple SIGMET. Users would be expected to interpret the SIGMET as indicating the area identified in red was affected by the hazard within the YUDD FIR.



YUDD SIGMET 2 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST SW OF LINE N4415 E02305 – N4045 E02415 FL250/370 MOV SW 15KT WKN=

Example 2)

In this example, in order to prevent any possible ambiguity and to prevent complications and inconsistencies with equivalent iWXXM versions of SIGMET then two separate SIGMETs should be issued.



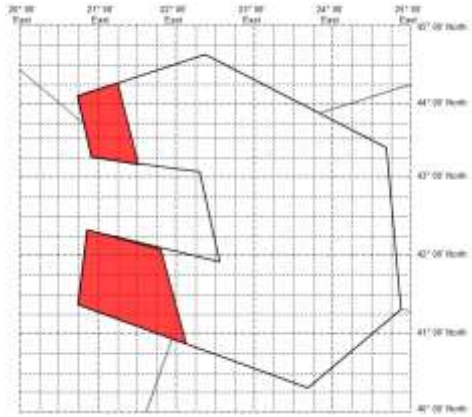
In this case, the following is recommended:

One SIGMET (northern extension of the 'horseshoe' shape)
YUDD SIGMET 2 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST W OF LINE N4430 E02200 – N4307 E02200 FL250/370 MOV W 15KT WKN=

AND a second SIGMET (southern extension of the 'horseshoe' shape)

YUDD SIGMET 3 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST W OF LINE N4203 E02200 – N4058 E02200 FL250/370 MOV W 15KT WKN=

Where the line delineating the hazard is not a line of latitude or longitude, a similar process should be followed



One SIGMET (northern extension of the 'horseshoe' shape)

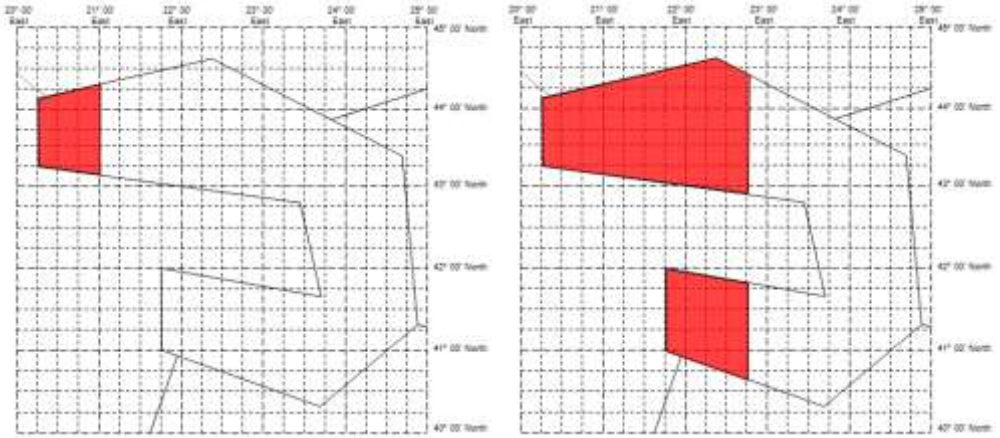
YUDD SIGMET 2 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST SW OF LINE N4415 E02115 – N4312 E02130 FL250/370 MOV W 15KT WKN=

AND a second SIGMET (southern extension of the 'horseshoe' shape)

YUDD SIGMET 3 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST SW OF LINE N4205 E02147 – N4052 E02206 FL250/370 MOV W 15KT WKN=

Considering a concave, 'horseshoe' shaped FIR partially surrounding another FIR with 'legs' of very different size.

If the southern 'leg' is expected to be affected during the forecasted validity period, as the example below then 2 SIGMETs should be issued.



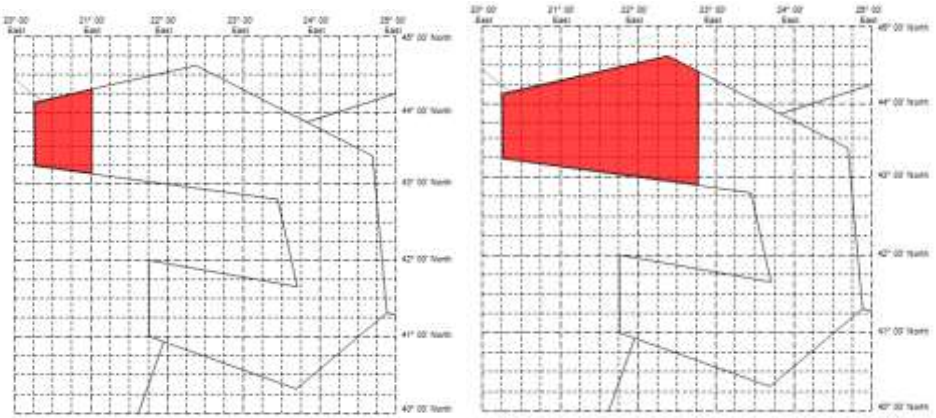
YUDD SIGMET 2 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST AT 1200Z W OF LINE N4416 E02100 – N4307 E02100 FL250/370 MOV E 25KT WKN FCST 1600Z W OF LINE N4427 E02245 – N4252 E02245=

And

YUDD SIGMET 3 VALID 101330/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST AT 1330Z W OF LINE N4200 E02145 – N4100 E02145 FL250/370 MOV E 25KT WKN FCST 1600Z W OF LINE N4147 E02245 – N4038 E02245=

Note, the validity time (highlighted) of the second SIGMET commences sometime after that of the first since the southern extension of the horseshoe shape is not as far west.

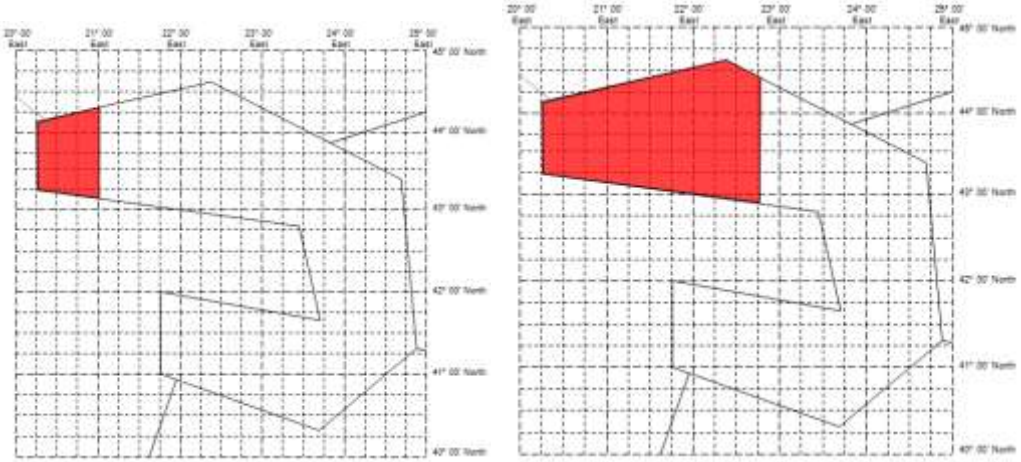
If the southern leg of the FIR is not expected to be affected, as in the example below,



Then a single SIGMET could be issued.

YUDD SIGMET 2 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST AT 1200Z W OF LINE N4415 E02100 – N4307 E02100 FL250/370 MOV E 25KT WKN=

However, to remove any possible doubt it is better to include an explicit forecast position,

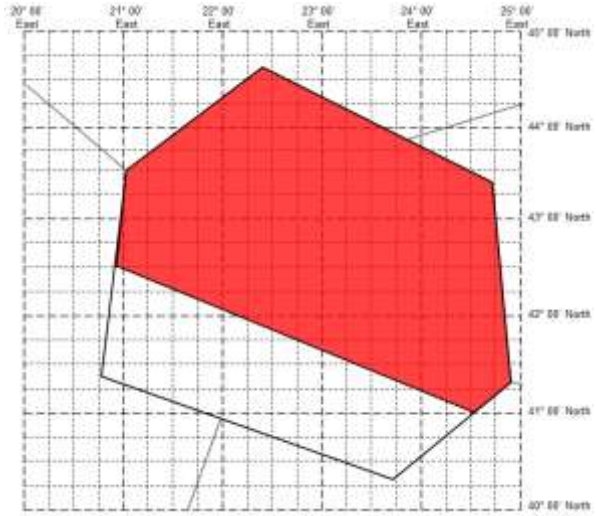


YUDD SIGMET 2 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST AT 1200Z W OF LINE N4415 E02100 – N4307 E02100 FL250/370 MOV E 25KT WKN FCST 1600Z W OF LINE N4427 E02245 – N4252 E02245=

It should also be noted that in all of these examples relating to concave, horseshoe shaped FIRs, polygons could also be used to explicitly define the areas affected. The above examples are intended to show that the principle under such circumstances is that two SIGMETs should be issued. This, as noted, will prevent ambiguity and will permit straightforward translation of alphanumeric SIGMET into iWXXM versions of SIGMET.

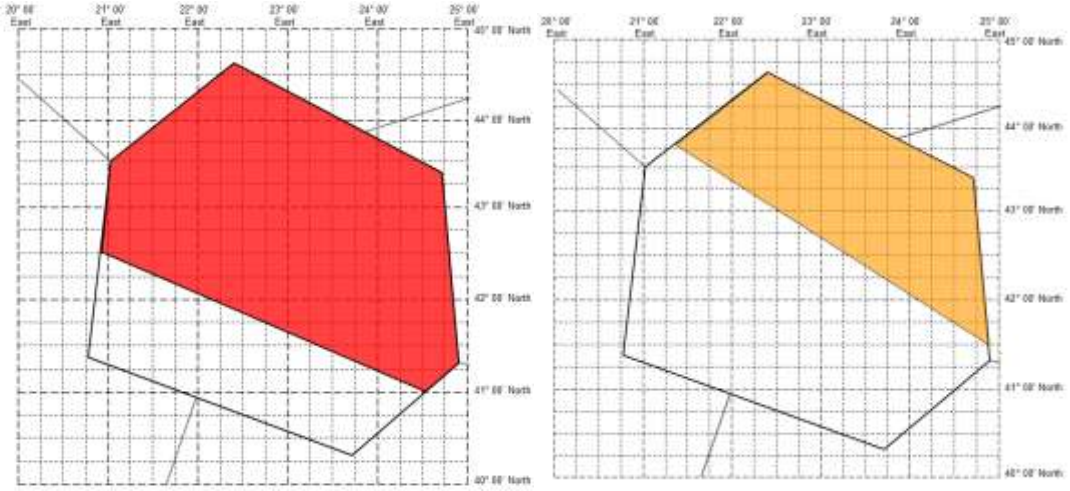
2a) In a sector of the FIR defined relative to specified line joining two points on the FIR boundary.

When the SIGMET does not include a ‘forecast position’ section.

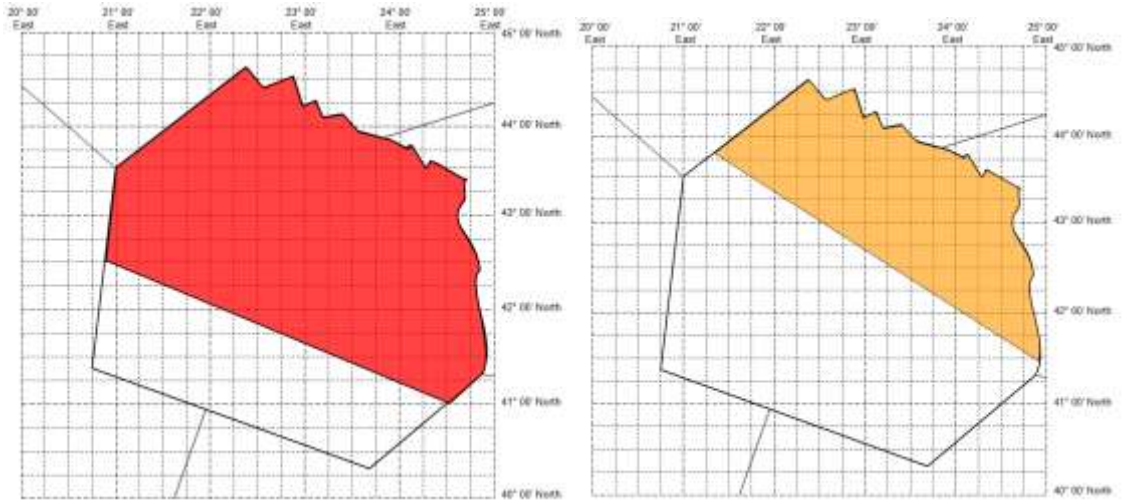


YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST NE OF LINE N4230 E02052 - N4100 E02430 FL250/370 MOV NE 15KT WKN=

With an explicit forecast position:



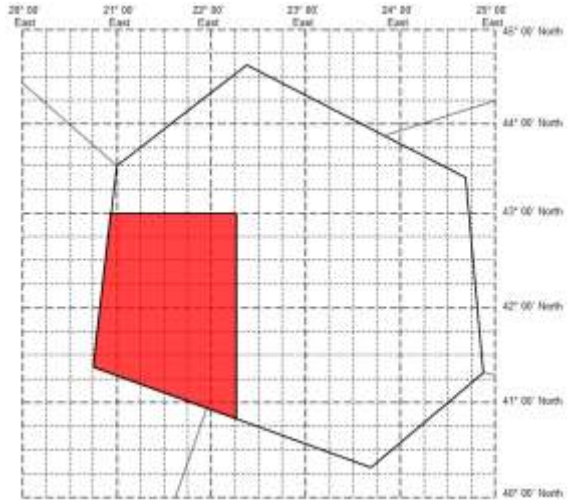
YUDD SIGMET 2 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST NE OF LINE N4230 E02052 – N4100 E02430 FL250/370 MOV NE 15KT WKN FCST 1600Z NE OF LINE N4346 E02122 – N4130 E02452=



YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST NE OF LINE N4230 E02052 - N4100 E02430 FL250/370 MOV NE 15KT WKN FCST 1600Z NE OF LINE N4346 E02122 - N4130 E02457=

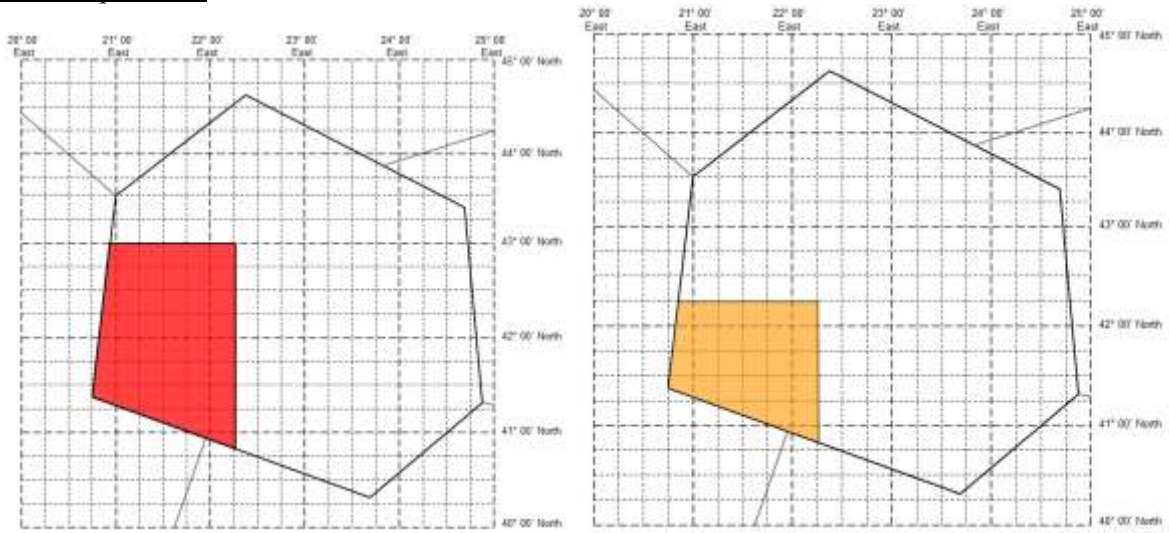
2b) In a sector of the FIR defined relative to a line of latitude and a line of longitude (effectively a quadrant)

When the SIGMET does not include a 'forecast position' section.



```
YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST S OF N4300 AND W OF E02215 FL250/370 MOV S 12KT WKN=
```

When the SIGMET does include a ‘forecast position'.

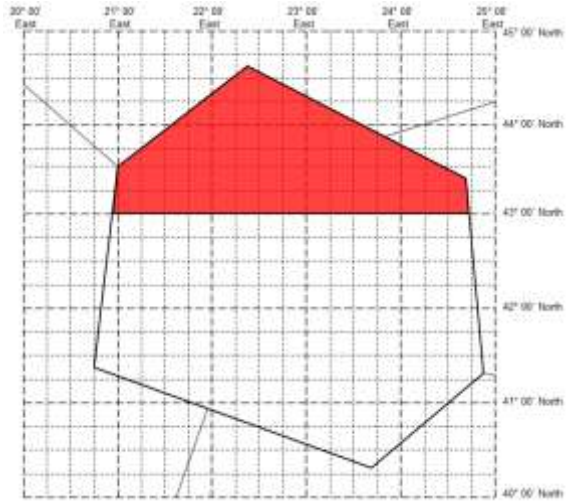


With an explicit forecast position:

```
YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST S OF N4300 AND W OF E02215 FL250/370 MOV S 12KT WKN FCST 1600Z S OF N4215 AND W
OF E02215=
```

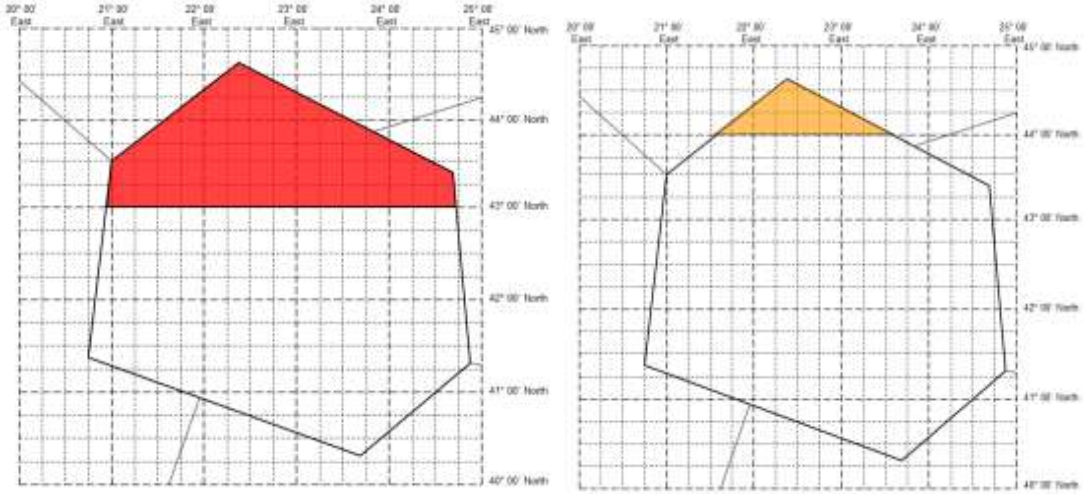
2c) In a sector of the FIR defined relative to a line of latitude or longitude (effectively a segment)

When the SIGMET does not include a 'forecast position' section.



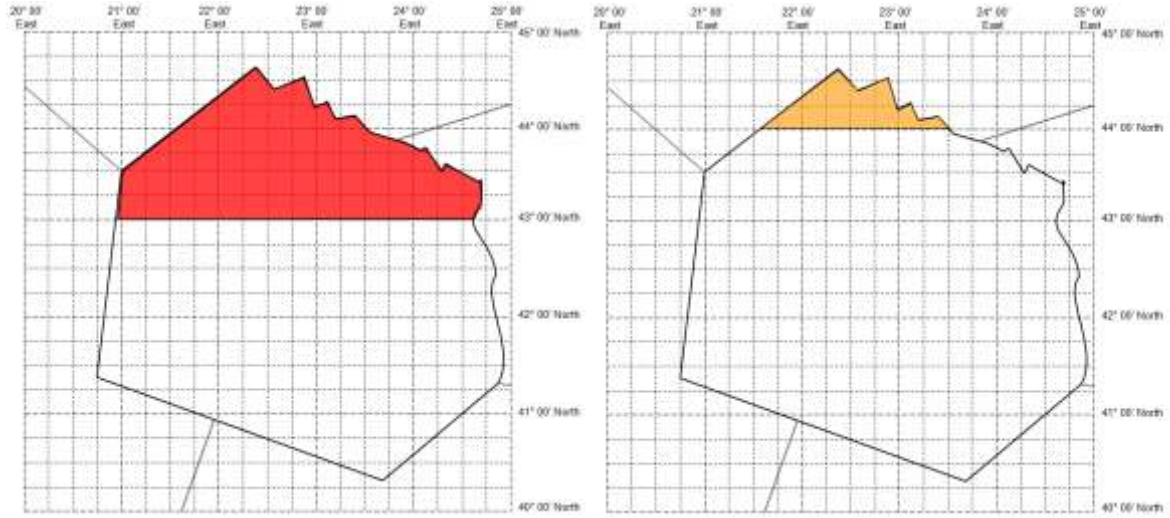
```
YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST N OF N43 FL250/370 MOV N 15KT WKN=
```

When the SIGMET does include a ‘forecast position’ section.



YUDD SIGMET 2 VALID 101200/101600 YUSO–
YUDD SHANLON FIR/UIR SEV TURB FCST N OF N43[3] FL250/370 MOV N 15KT WKN FCST 1600Z N OF N44=

[3] It would be equally valid to use 'N4300'.

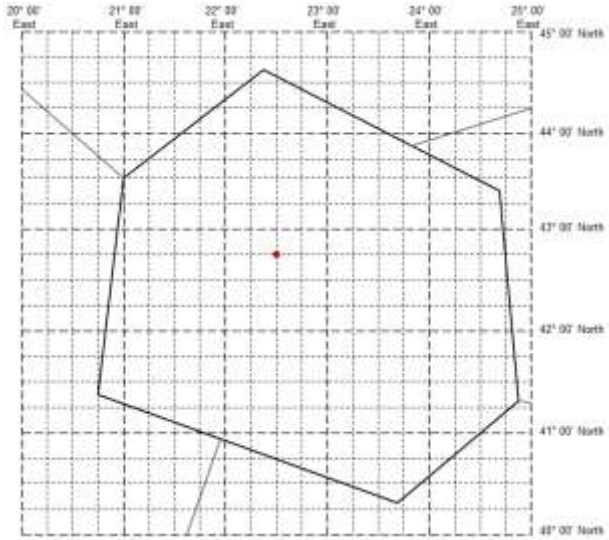


```
YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB FCST N OF N43[4] FL250/370 MOV N 15KT WKN FCST 1600Z N OF N44=
```

[4] It would be equally valid to use 'N4300'.

3) At a specific point within the FIR;

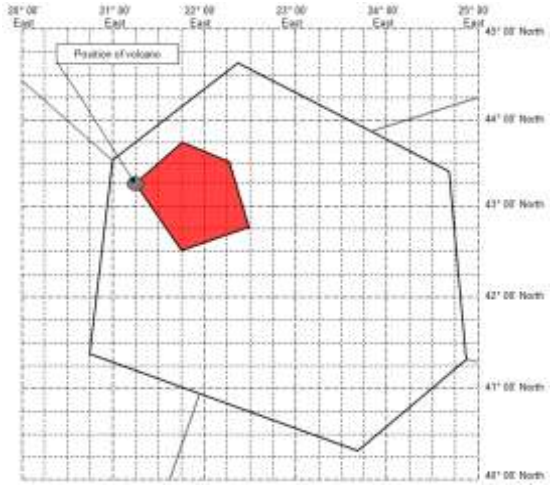
When the SIGMET does not include a ‘forecast position’ section.




```
YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR SEV TURB OBS N4245 E02230 FL250/370 STNR WKN=
```

4) Volcanic Ash SIGMET Only

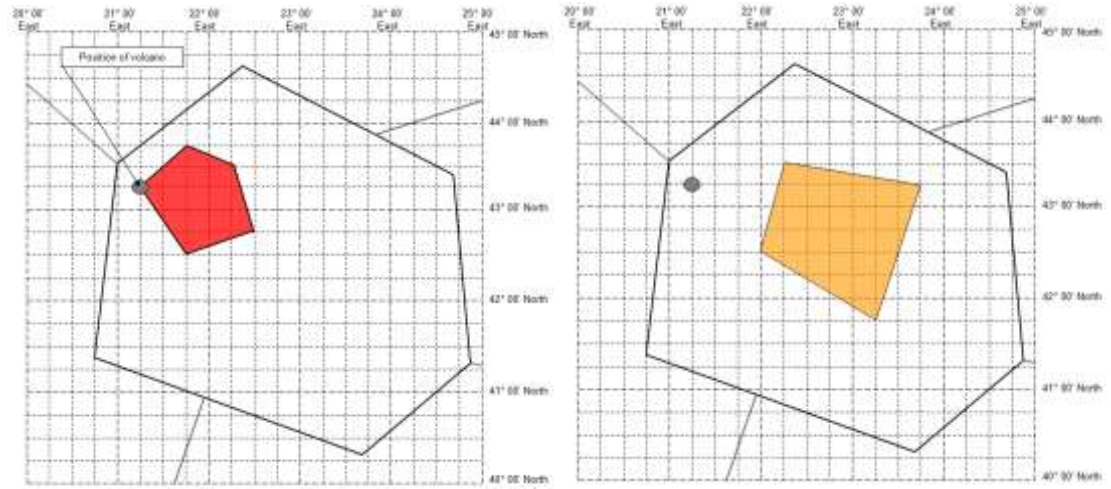
When the VA SIGMET does not include a ‘forecast position’ section.




```
YUDD SIGMET 2 VALID 101200/101600 YUSO-
YUDD SHANLON FIR/UIR VA ERUPTION MT ASHVAL PSN N4315 E02115 VA CLD OBS AT 1200Z WI N4315 E02115 - N4345 E02145 -
N4230 E02215 - N4245 E02230 - N4230 E02145 - N4315 E02115 FL250/370 MOV ESE 20KT NC=
```

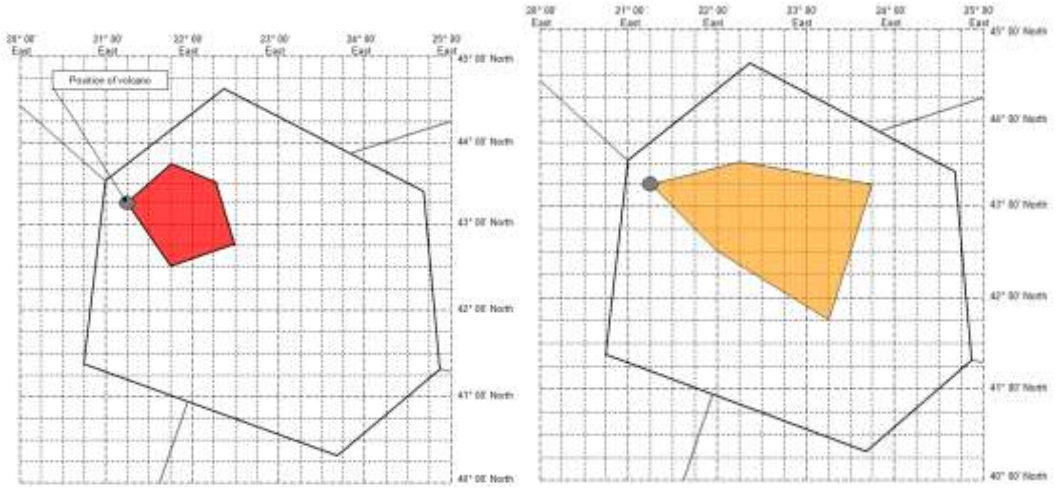
When the SIGMET does include a ‘forecast position’ section.

For VA (eruption ceased, ash cloud persists downwind):



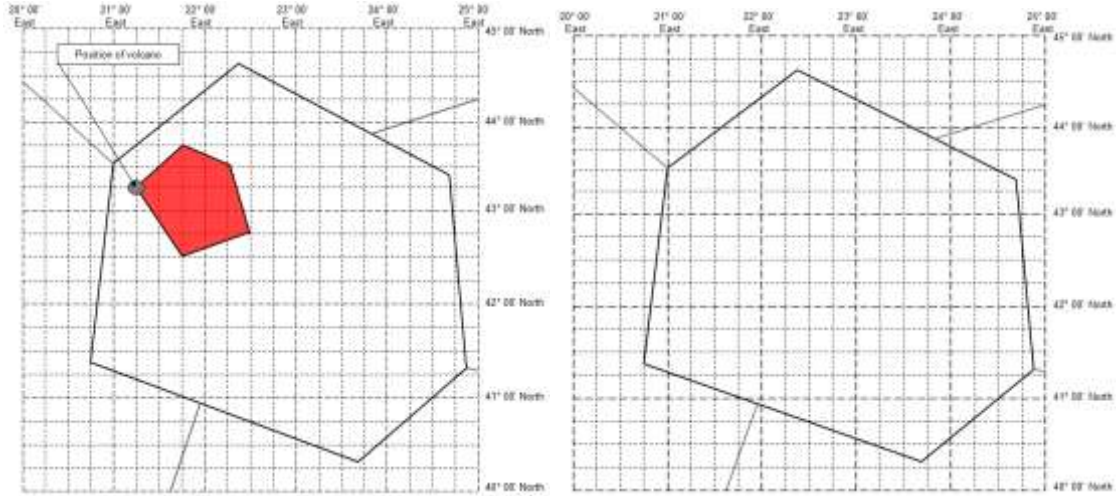
YUDD SIGMET 2 VALID 101200/101800 YUSO-
YUDD SHANLON FIR/UIR VA ERUPTION MT ASHVAL PSN N4315 E02115 VA CLD OBS AT 1200Z WI N4315 E02115 – N4345 E02145 N4330 E02215 – N4245 E02230 – N4230 E02145 - N4315 E02115 FL250/370 MOV ESE 20KT NC FCST 1800Z VA CLD APRX N4330 E02215 – N4315 E02345 – N4145 E02315 – N4230 E02200 - N4330 E02215=

For VA (eruption on-going):



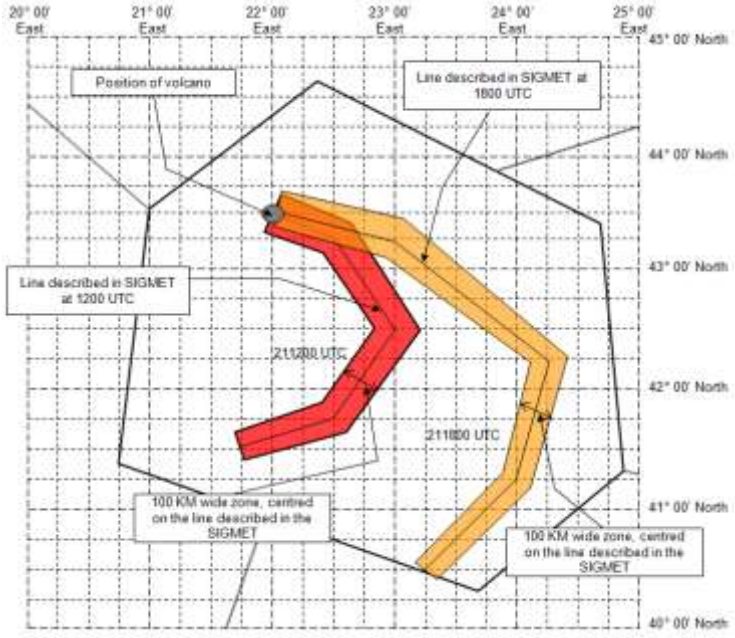
YUDD SIGMET 2 VALID 101200/101800 YUSO–
YUDD SHANLON FIR/UIR VA ERUPTION MT ASHVAL PSN N4315 E02115 VA CLD OBS AT 1200Z WI N4315 E02115 - N4245 E02145 – N4330 E02215 – N4245 E02230 – N4230 E02145 – N4315 E2115 FL250/370 MOV ESE 20KT NC FCST 1800Z VA CLD APRX N4315 E02115 - N4330 E02215 – N4315 E02345 – N4145 E02315 – N4230 E02200 – N4315 E02115=

For VA (eruption ceasing, ash dispersing):



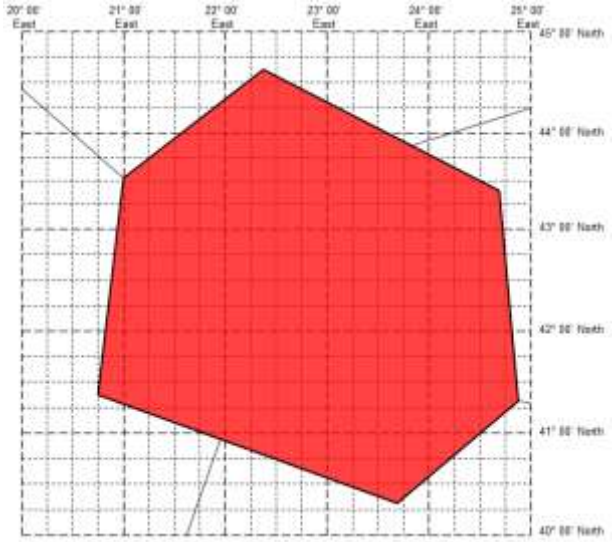
YUDD SIGMET 2 VALID 101200/101800 YUSO–
YUDD SHANLON FIR/UIR VA ERUPTION MT ASHVAL PSN N4315 E02115 VA CLD OBS AT 1200Z WI N4315 E02115 - N4345 E02145 – N4330 E02215 – N4245 E02130 - N4230 E02145 - N4315 E02115 FL250/370 MOV ESE 20KT WKN FCST 1800Z NO VA EXP=

For VA (eruption on-going), defining the area affected as a line of specified width:




```
YUDD SIGMET 2 VALID 211200/211800 YUSO-
YUDD SHANLON FIR/UIR VA ERUPTION MT ASHVAL PSN N4330 E02200 VA CLD FCST 1200Z FL310/450 100KM WID LINE BTN N4330
E02200 - N4315 E02230 - N4230 E02300 - N4145 E02230 - N4130 E02145 NC FCST 1800Z VA CLD APRX 100KM WID LIN BTN
N4330 E02200 - N4315 E02300 - N4215 E02415 - N4115 E02400 - N4030 E02315=
```

Covering entire FIR (volcanic ash only).

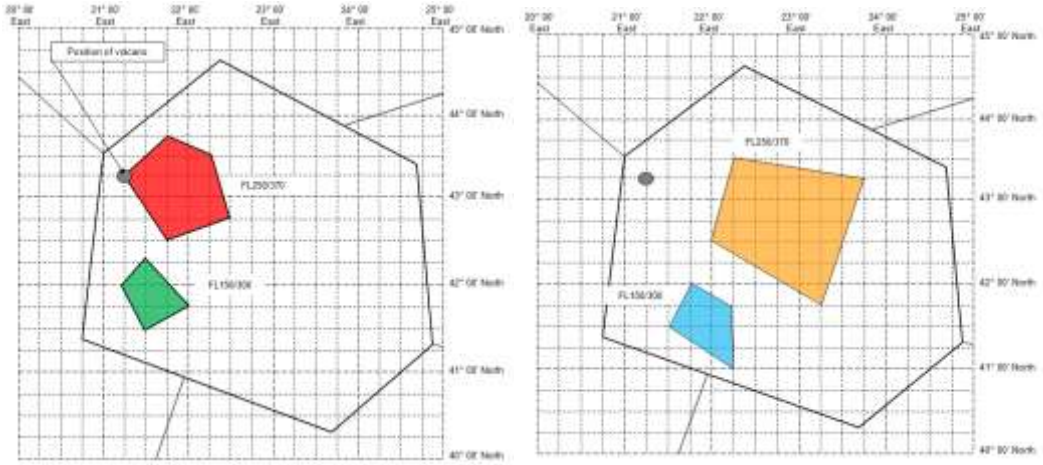



```
YUDD SIGMET 2 VALID 101200/101800 YUSO-
YUDD SHANLON FIR/UIR VA ERUPTION MT ASHVAL PSN N4315 E02115 VA CLD FCST ENTIRE FIR FL250/370 STNR WKN=
```

Multiple areas in SIGMET for volcanic ash.

Strictly, the only way to include a second instance of a volcanic ash cloud in a SIGMET message is to use the 'AND' option in the 'Forecast position' section.

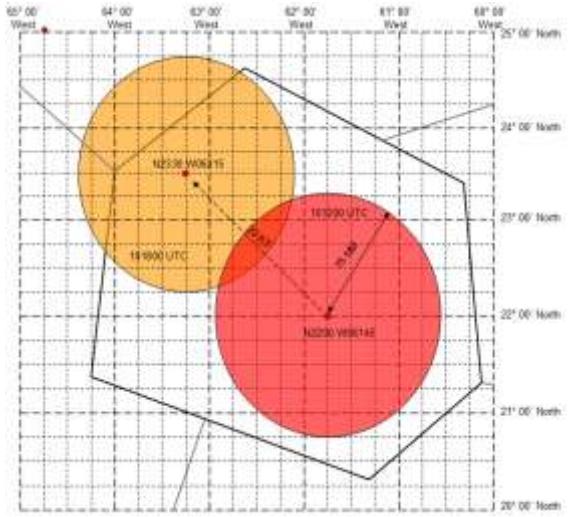
In the example below, two areas of volcanic ash cloud (at different levels) are forecast to move as described. The normal courier font refers to the northernmost areas of ash, and the italicised font refers to the southernmost areas of ash during the period. 'AND' is highlighted in **bold** to identify the separation of the two features.



YUDD SIGMET 2 VALID 101200/101800 YUSO-
YUDD SHANLON FIR/UIR VA ERUPTION MT ASHVAL PSN N4315 E02115 VA CLD OBS AT 1200Z WI N4315 E02115 - N4345 E02145 N4330 E02215 - N4245 E02230 - N4230 E02145 - N4315 E02115 FL250/370 MOV ESE 20KT NC FCST 1800Z VA CLD APRX N4330 E02215 - N4315 E02345 - N4145 E02315 - N4230 E02200 - N4330 E02215 **AND** *WI N4200 E02115 - N4217 E02130 - N4145 E02200 - N4130 E02130 - N4200 E02115 FL150/300 MOV ESE 20KT NC FCST 1800Z VA CLD APRX N4200 E02145 - N4145 E02215 - N4100 E02215 - N4130 E02130 - N4200 E02145*=

The above only works if there are two instances of ash at the start and end of the period. If the number of ash areas is different at the start and end, it is recommended that separate SIGMETs be issued as necessary.

5) Tropical Cyclone SIGMET Only

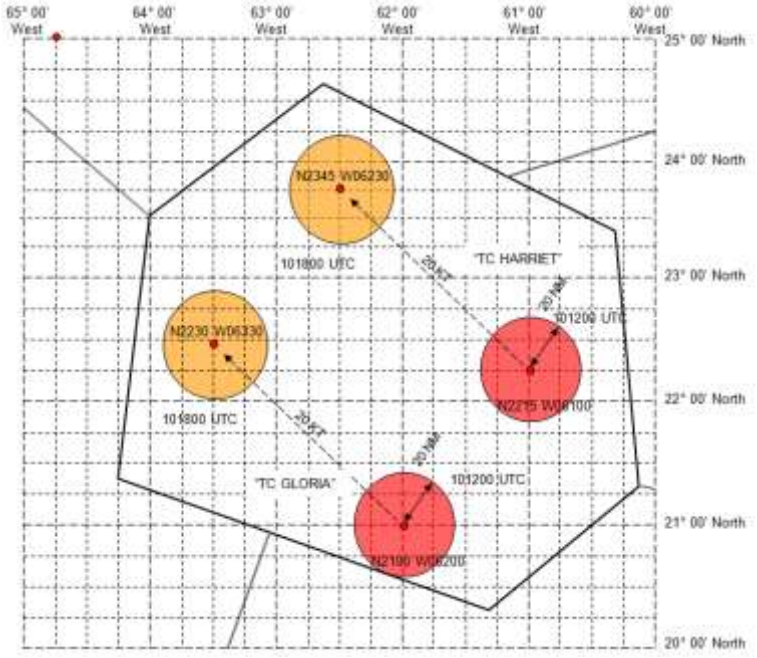


YUDD SIGMET 2 VALID 101200/101800 YUSO-
YUDD SHANLON FIR/UIR TC GLORIA FCST AT 1200Z N2200 W06145 CB TOP FL500 WI 75NM OF CENTRE MOV NW 20KT WKN FCST 1800Z TC CENTRE N2330 W06315=

Multiple areas in SIGMET for tropical cyclone.

Strictly, the only way to include a second instance of a tropical cyclone in a SIGMET is to use the 'AND' option in the 'Forecast position' section.

The example below demonstrates how two separate TCs, and the CB within a specified radius of those TCs, can be described. The normal courier font refers to TC Gloria, and the italicised font refers to TC Harriet. 'AND' is highlighted in **bold** to identify the separation between information for the two features.



YUDD SIGMET 2 VALID 101200/101800 YUSO-
YUDD SHANLON FIR/UIR TC GLORIA FCST AT 1200Z N2100 W06200 CB TOP FL500 WI 20NM OF CENTRE MOV NW 20KT WKN FCST 1800Z TC CENTRE N2230 W06330 **AND** *TC HARRIET FCST AT 1200Z N2215 W06100 CB TOP FL400 WI 20NM OF CENTRE MOV NW 20KT WKN FCST 1800Z TC CENTRE N2345 W06230=*

APPENDIX H

SIGMET GUIDANCE TABLE: SIMPLIFIED FROM ANNEX 3 TABLE A6-1

Note. – The table below seeks to provide more explicit guidance than that given in Table A6-1 of Annex 3 (18th Edition, July 2013). It does this by removing all references to the AIRMET message and special air-report message elements contained in Table A6-1. The table below simplifies the available options and provides more specific expansion of the symbolic structure of SIGMET messages, with guidance sub-titles where appropriate. It should be noted that Annex 3, Appendix 6, Table A6-1 remains the authoritative reference.

Ref No.	Element as specified in Chapter 5 and Appendix 6	Detailed Content	Expanded symbolic - These 'expanded' symbolic representations of the various SIGMET code elements represent the interpretation of Table A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the guidelines below.	Examples. These examples of various SIGMET code elements represent the interpretation A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the examples below.
1.1	Location indicator of FIR/CTA (M)[1]	ICAO location indicator of the ATS unit serving the FIR or CTA to which the SIGMET refers (M)	nnnn	YUCC[2] YUDD[2]
1.2	Identification	Message identification and sequence number (M)[3]	1.1.1.1 SIGMET n 1.1.1.2 SIGMET nn 1.1.1.3 SIGMET nnn	SIGMET 5 SIGMET A3 SIGMET B10
1.3	Validity period	Day-time groups indicating the period of validity in UTC (M)	VALID nnnnnn/nnnnnn	VALID 221215/221600 VALID 101520/101800 VALID 252000/252400 VALID 122000/130400 (6 hour validity applicable to TC or VA SIGMET only)
1.4	Location indicator of MWO (M)	Location indicator of MWO originating the message with a separating hyphen (M)	nnnn-	YUDO-[2] YUSO-[2]
1.5	Name of the FIR/CTA *or* aircraft identification (M)	Location indicator and name of the FIR/CTA for which the SIGMET is issued (M)	nnnn nnnnnnnnnn FIR nnnn nnnnnnnnnn FIR/UIR nnnn nnnnnnnnnn CTA	YUCC AMSWELL FIR[2] YUDD SHANLON FIR/UIR[2] YUDD SHANLON FIR[2] YUCC AMSWELL CTA
2.1	Phenomenon (M)[4]	Description of phenomenon causing the	OBSC[5] TS OBSC[5] TSGR[6]	OBSC TS OBSC TSGR EMBD TS

Ref No.	Element as specified in Chapter 5 and Appendix 6	Detailed Content	Expanded symbolic - These 'expanded' symbolic representations of the various SIGMET code elements represent the interpretation of Table A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the guidelines below.	Examples. These examples of various SIGMET code elements represent the interpretation A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the examples below.
		issuance of SIGMET (C)	EMBD[7] TS EMBD[7] TSGR[6] FRQ[8] TS FRQ[8] TSGR[6] SQL[9] TS SQL[9] TSGR[6] TC nnnnnnnnnn TC NN[10] SEV TURB[11] SEV ICE[12] SEV ICE (FZRA)[12] SEV MTW[13] HVY DS[14] HVY SS[14] VA ERUPTION PSN Nnn[nn] *or* Snn[nn] Ennn[nn] *or* Wnnn[nn] VA CLD VA ERUPTION MT nnnnnnnnnn PSN Nnn[nn] *or* Snn[nn] Ennn[nn] *or* Wnnn[nn] VA CLD VA CLD RDOACT CLD	EMBD TSGR FRQ TS FRQ TSGR SQL TS SQL TSGR TC GLORIA TC NN SEV TURB SEV ICE SEV ICE (FZRA) SEV MTW HVY DS HVY SS VA ERUPTION PSN N27 W017 VA CLD VA ERUPTION PSN S1200 E01730 VA CLD VA ERUPTION MT ASHVAL PSN S15 E073 VA CLD VA ERUPTION MT VALASH PSN N2030 E02015 VA CLD VA CLD RDOACT CLD
2.2	Observed or forecast phenomenon (M)	Indication whether the information is observed and expected to continue, *or* forecast (M)	OBS OBS AT nnnnZ FCST FCST AT nnnnZ	OBS AT 1210Z OBS FCST AT 1815Z FCST

Ref No.	Element as specified in Chapter 5 and Appendix 6	Detailed Content	Expanded symbolic - These 'expanded' symbolic representations of the various SIGMET code elements represent the interpretation of Table A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the guidelines below.	Examples. These examples of various SIGMET code elements represent the interpretation A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the examples below.

2.3	Location (C)[15]	Location (referring to latitude and longitude (in degrees and minutes))	1) An area of the FIR defined by a polygon. The end point shall be a repeat of the start point. Minimum 4 coordinates and not normally more than 7 coordinates.
			
			`WI`[21] `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][ - Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn]]`
			
			or
			
			2a) In a sector of the FIR defined relative to a specified line joining two points on the FIR boundary. (or so close to the FIR boundary so as to leave no doubt that the intent is for the line to connect to the FIR boundary at that point).
			
			`[N][NE][E][SE][S][SW][W][NW] OF [LINE] Nnn[nn]` *or* `Snn[nn] Wnnn[nn]` *or* `Ennn[nn] – Nnn[nn]` *or* `Snn[nn] Wnnn[nn]` *or* `Ennn[nn]`
			
			or
			
			2b) In a sector of the FIR defined relative to a line of latitude and a line of longitude (effectively a quadrant);
			
			`N OF Nnn[nn] AND W OF Wnnn[nn]` *or*
			`N OF Nnn[nn] AND E OF Wnnn[nn]` *or*
			`S OF Nnn[nn] AND W OF Wnnn[nn]` *or*
			`S OF Nnn[nn] AND E OF Wnnn[nn]` *or*
			`N OF Snn[nn] AND W OF Ennn[nn]` *or*
			`N OF Snn[nn] AND E OF Ennn[nn]` *or*
			`S OF Snn[nn] AND W OF Ennn[nn]` *or*
			`S OF Snn[nn] AND E OF Ennn[nn]` *or*
			
			or
			
			2c) In a sector of the FIR defined relative to a line of latitude or longitude (effectively a segment);
			
			`N OF Nnn[nn]` *or*
			`S OF Nnn[nn]` *or*
			`N OF Snn[nn]` *or*
			`S OF Snn[nn]` *or*
				1) An area of the FIR defined by a polygon. The end point shall be a repeat of the start point. Minimum 4 coordinates (including the last point as a repeat of the first), and not normally more than 7 coordinates.
				
				`WI N6030 E02550 – N6055 E02500 – N6050 E02630 – N6030 E02550`
				
				`WI N30 W067 – N32 W070 – N35 W068 – N30 W067`
				
				or
				
				2a) In a sector of the FIR defined relative to a specified line joining two points on the FIR boundary (or so close to the FIR boundary so as to leave no doubt that the intent is for the line to connect to the FIR boundary at that point).
				
				`NE OF LINE N2515 W08700 – N2000 W08330`
				`S OF LINE S14 E150 – S14 E155`
				
				or
				
				2b) In a sector of the FIR defined relative to a line of latitude and a line of longitude (effectively a quadrant);
				
				`S OF N3200 AND E OF E02000`
				`S OF S3215 AND W OF E10130`
				`S OF N12 AND W OF E040`
				`N OF N35 AND E OF E078`
				
				or
				
				2c) In a sector of the FIR defined relative to a line of latitude or longitude (effectively a segment);
				
				`N OF S2230`
				`S OF S43`
				`E OF E01700`
				`E OF W005`

Ref No.	Element as specified in Chapter 5 and Appendix 6	Detailed Content	Expanded symbolic - These 'expanded' symbolic representations of the various SIGMET code elements represent the interpretation of Table A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the guidelines below.	Examples. These examples of various SIGMET code elements represent the interpretation A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the examples below.
			W OF Wnnn[nn] *or* E OF Wnnn[nn] *or* W OF Ennn[nn] *or* E OF Ennn[nn] *or* 3) At a specific point within the FIR; Nnn[nn] Wnnn[nn] *or* Nnn[nn] Ennn[nn] *or* Snn[nn] Wnnn[nn] *or* Snn[nn] Ennn[nn] *or* 4) A reference to the whole FIR/CTA ENTIRE FIR[18] ENTIRE CTA[18]	*or* 3) At a specific point within the FIR; N5530 W02230 S12 E177 *or* 4) A reference to the whole FIR/CTA ENTIRE FIR[18] ENTIRE CTA[18]
2.4	Level (C)[15]	Flight level or altitude and extent (C)[16]	1) Generic height/range descriptors to be used when 'Location' descriptors above are used. FLnnn SFC/FLnnn SFC/nnnnM SFC/nnnnFT nnnnM nnnnFT FLnnn/nnn TOP FLnnn ABV FLnnn TOP ABV FLnnn *or*[17] 2) Radius from TC centre from which CB related to Tropical Cyclone ONLY may be expected. CB TOP FLnnn WI nnn{KM/NM} OF CENTRE CB TOP ABV FLnnn WI nnn{KM/NM} OF CENTRE CB TOP BLW FLnnn WI nnn{KM/NM} OF CENTRE *or*[18]	1) Generic height/range descriptors. FL180 SFC/FL070 SFC/3000M SFC/9000FT 3000M 9000FT FL050/080 FL310/450 TOP FL390 ABV FL280 TOP ABV FL100 *or*[17] 2) Radius from TC centre from which CB related to Tropical Cyclone ONLY may be expected. CB TOP FL500 WI 270KM OF CENTRE CB TOP FL500 WI 150NM OF CENTRE CB TOP ABV FL450 WI 250KM OF CENTRE CB TOP BLW FL530 WI 150NM OF CENTRE

Ref No.	Element as specified in Chapter 5 and Appendix 6	Detailed Content	Expanded symbolic - These 'expanded' symbolic representations of the various SIGMET code elements represent the interpretation of Table A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the guidelines below.	Examples. These examples of various SIGMET code elements represent the interpretation A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the examples below.
			3) Zone defined by a line of specified width within which volcanic ash is expected. FLnnn/nnn nnKM WID LINE[19] BTN 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][– Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn]] *or* FLnnn/nnn nnNM WID LINE[19] BTN 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][– Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn]]	*or*[18] 3c) Zone defined by a line of specified width within which volcanic ash is expected. FL310/450 100KM WID LINE BTN S4330 E02200 – N4315 E02230 – N4230 E02300 – N4145 E02230 – N4130 E02145 *or* FL310/450 60NM WID LINE BTN S4330 E02200 – N4315 E02230 – N4230 E02300 – N4145 E02230 – N4130 E02145
2.5	Movement *or* expected movement (C)[15]	Movement *or* expected movement (direction and speed) with reference to one of the sixteen points of compass, *or* stationary (C)	MOV[N][NNE][NE][ENE][E][ESE][SE][SSE][S][SSW][SW][WSW][W][WNW][NW][NNW] nnKMH *or* MOV[N][NNE][NE][ENE][E][ESE][SE][SSE][S][SSW][SW][WSW][W][WNW][NW][NNW] nnKT *or* STNR	MOV E 40KMH MOV E 20KT MOV SE STNR
2.6	Changes in intensity (C)[15]	Expected changes in intensity (C)	INTSF *or* WKN *or* NC	WKN INTSF NC
2.7	Forecast position (C)[15, 16, 25]	Forecast position of volcanic ash cloud *or* the centre of the TC *or* other hazardous	1a) Specific to Tropical Cyclone only. FCST nnnnZ TC CENTRE Nnnnn or Snnnn Ennnnn or Wnnnnn FCST nnnnZ TC CENTRE Nnn or Snn Ennn or Wnnn	1a) Specific to Tropical Cyclone only. FCST 2200Z TC CENTRE N2740 W07345 FCST 1600Z TC CENTRE S15 W110

Ref No.	Element as specified in Chapter 5 and Appendix 6	Detailed Content	Expanded symbolic - These 'expanded' symbolic representations of the various SIGMET code elements represent the interpretation of Table A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the guidelines below.	Examples. These examples of various SIGMET code elements represent the interpretation A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the examples below.

		phenomena[23] at the end of the validity period of the SIGMET message (C)	`[AND]`[20]
			
			or
			
			2a) Specific to Volcanic Ash only: A polygon defining an ash cloud. The end point shall be a repeat of the start point. Minimum 4 coordinates and not normally more than 7 coordinates.
			
			`FCST nnnnZ VA CLD APRX 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]] [ – Nnn[nn]` *or* `Snn[nn] Wnnn[nn]` *or* `Ennn[nn]]`
			
			or
			
			2b) Specific to Volcanic Ash only: A zone, defined by a line of specified width, defining an ash cloud.
			
			`FCST nnnnZ VA CLD APRX nnKM (nnNM) WID LINE`[19] `BTN 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]] [ – Nnn[nn]` *or* `Snn[nn] Wnnn[nn]` *or* `Ennn[nn]]`
			
			`[AND]`[20]
			
			or
			
			2c) Specific to Volcanic Ash affecting entire FIR or CTA
			
			`FCST nnnnZ ENTIRE FIR`[18]
			
			or
			
			`FCST nnnnZ ENTIRE CTA`[18]
			
			or
			2d) Specific to Volcanic Ash only: the volcanic ash cloud is expected to be completely out of the FIR or CTA
			
			FCST nnnnZ NO VA EXP
			
			or
				or
				
				2a) Specific to Volcanic Ash only: A polygon defining an ash cloud. The end point shall be a repeat of the start point. Minimum 4 coordinates and not normally more than 7 coordinates.
				
				`FCST 1700Z VA CLD APRX S15 E075 – S15 E081 – S17 E083 – S18 E079 – S15 E075`
				
				or
				
				2b) Specific to Volcanic Ash only: A zone defined by a line of specified width, defining an ash cloud.
				
				`FCST 1700Z VA CLD APRX 180KM WID LINE BTN S15 E075 – S15 E081 – S17 E083 – S18 E079`
				
				`FCST 1700Z VA CLD APRX 90NM WID LINE BTN S15 E075 – S15 E081 – S17 E083 – S18 E079`
				
				or
				
				2c) Specific to Volcanic Ash only affecting entire FIR or CTA
				
				`FCST 1400Z ENTIRE FIR`[18]
				
				or
				
				`FCST 0300Z ENTIRE CTA`[18]
				
				or
				
				2d) Specific to Volcanic Ash only: the volcanic ash cloud is expected to be completely out of the FIR or CTA
				
				FCST 0600Z NO VA EXP
				
				or
				
				3a) Specific to hazards other than TC or VA, an area of the FIR

Ref No.	Element as specified in Chapter 5 and Appendix 6	Detailed Content	Expanded symbolic - These 'expanded' symbolic representations of the various SIGMET code elements represent the interpretation of Table A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the guidelines below.	Examples. These examples of various SIGMET code elements represent the interpretation A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the examples below.
			3a) Specific to hazards other than TC or VA, an area of the FIR defined by a polygon. The end point shall be a repeat of the start point. Minimum 4 (including the last point being a repeat of the first point) coordinates, and not normally more than 7 coordinates. FCST nnnnZ WI[21] 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][- Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn]] *or* 3b) Specific to hazards other than TC or VA, in a sector of the FIR defined relative to specified line joining two points on the FIR boundary (or so close to the FIR boundary so as to leave no doubt that the intent is for the line to connect to the FIR boundary at that point). FCST nnnnZ [N][NE][E][SE][S][SW][W][NW] OF [LINE] Nnn[nn] *or* Snn[nn] Wnnn[nn] *or* Ennn[nn] – Nnn[nn] *or* Snn[nn] Wnnn[nn] *or* Ennn[nn] *or* 3c) Specific to hazards other than TC or VA, in a sector of the FIR defined relative to a line of latitude and a line of longitude (effectively a quadrant); FCST nnnnZ N OF Nnn[nn] AND W OF Wnnn[nn] *or* FCST nnnnZ N OF Nnn[nn] AND E OF Wnnn[nn] *or* FCST nnnnZ S OF Nnn[nn] AND W OF Wnnn[nn] *or* FCST nnnnZ S OF Nnn[nn] AND E OF Wnnn[nn] *or* FCST nnnnZ N OF Snn[nn] AND W OF Ennn[nn] *or* FCST nnnnZ N OF Snn[nn] AND E OF Ennn[nn] *or* FCST nnnnZ S OF Snn[nn] AND W OF Ennn[nn] *or* FCST nnnnZ S OF Snn[nn] AND E OF Ennn[nn] *or* *or* 3d) Specific to hazards other than TC or VA, in a sector of the FIR	defined by a polygon. The end point shall be a repeat of the start point. Minimum 4 coordinates (including the last point being a repeat of the first point), and not normally more than 7 coordinates. FCST 1600Z WI N6030 E02550 – N6055 E02500 – N6050 E02630 – N6030 E02550 FCST 0800Z WI N30 W067 – N32 W070 – N35 W068 – N30 W067 *or* 3b) Specific to hazards other than TC or VA, in a sector of the FIR defined relative to specified line joining two points on the FIR boundary (or so close to the FIR boundary so as to leave no doubt that the intent is for the line to connect to the FIR boundary at that point). FCST 2100Z NE OF N2500 W08700 – N2000 W08300 FCST 1200Z NE OF LINE N2500 W08700 – N2000 W08300 FCST 1600Z S OF S14 E150 – S14 E155 FCST 2000Z S OF LINE S14 E150 – S14 E155 *or* 3c) Specific to hazards other than TC or VA, in a sector of the FIR defined relative to a line of latitude and a line of longitude (effectively a quadrant); FCST 1600Z S OF N3200 AND E OF E02000 FCST 0600Z S OF S3215 AND W OF E10130 FCST 1230Z S OF N12 AND W OF E040 FCST 0300Z N OF N35 AND E OF E078 *or* 3d) Specific to hazards other than TC or VA, in a sector of the FIR defined relative to a line of latitude or longitude (effectively a segment);

Ref No.	Element as specified in Chapter 5 and Appendix 6	Detailed Content	Expanded symbolic - These 'expanded' symbolic representations of the various SIGMET code elements represent the interpretation of Table A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the guidelines below.	Examples. These examples of various SIGMET code elements represent the interpretation A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the examples below.
			defined relative to a line of latitude or longitude (effectively a segment); FCST nnnnZ N OF Nnn[nn] *or* FCST nnnnZ S OF Nnn[nn] *or* FCST nnnnZ N OF Snn[nn] *or* FCST nnnnZ S OF Snn[nn] *or* FCST nnnnZ W OF Wnnn[nn] *or* FCST nnnnZ E OF Wnnn[nn] *or* FCST nnnnZ W OF Ennn[nn] *or* FCST nnnnZ E OF Ennn[nn] *or* 3e) Specific to hazards other than TC or VA, at a point: FCST nnnnZ Nnn[nn] Wnnn[nn] or FCST nnnnZ Nnn[nn] Ennn[nn] or FCST nnnnZ Snn[nn] Wnnn[nn] or FCST nnnnZ Snn[nn] Ennn[nn]	FCST 1600Z N OF S2230 FCST 1130Z S OF S43 FCST 0800Z E OF E01700 FCST 1200Z E OF W005 *or* 3e) Specific to hazards other than TC or VA, at a point: FCST 0800Z N5530 W02230 FCST 1500Z S12 E177
	Cancellation of SIGMET (C)[27]	Cancellation of SIGMET referring to its identification	CNL SIGMET n nnnnnn/nnnnnn CNL SIGMET nn nnnnnn/nnnnnn CNL SIGMET nnn nnnnnn/nnnnnn *or* CNL SIGMET n nnnnnn/nnnnnn VA MOV TO nnnn FIR[18] CNL SIGMET nn nnnnnn/nnnnnn VA MOV TO nnnn FIR[18] CNL SIGMET nnn	CNL SIGMET 2 102000/102400[24] CNL SIGMET 12 101200/101600[24] CNL SIGMET A12 031600/032000[24] CNL SIGMET 3 251030/251630 VA MOV TO YUDO FIR[24] CNL SIGMET 06 191200/191800 VA MOV TO YUDO FIR[24]

Ref No.	Element as specified in Chapter 5 and Appendix 6	Detailed Content	Expanded symbolic - These 'expanded' symbolic representations of the various SIGMET code elements represent the interpretation of Table A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the guidelines below.	Examples. These examples of various SIGMET code elements represent the interpretation A6-1 of Annex 3. MWOs are encouraged to align their SIGMETs with the examples below.
			251030/251430 VA MOV TO YUDO FIR[18]	CNL SIGMET B10 030600/031200 VA MOV TO YUDO FIR[24]

Table A-1: Expanded SIGMET template

Footnotes to table: (note, the number in brackets at the end of each footnote refers to the footnote reference in Table A6-1 of Annex 3 (18th Edition, July 2013).

1. See 4.1. "**Recommendation.—** *In cases where the airspace is divided into a flight information region (FIR) and an upper flight information region (UIR), the SIGMET should be identified by the location indicator of the air traffic services unit serving the FIR. Note.— The SIGMET message applies to the whole airspace within the lateral limits of the FIR, i.e. to the FIR and to the UIR. The particular areas and/or flight levels affected by the meteorological phenomena causing the issuance of the SIGMET are given in the text of the message.*" (2)
2. Fictitious location. (3)
3. In accordance with 1.1.3 "The sequence number referred to in the template in Table A6-1 shall correspond with the number of SIGMET messages issued for the flight information region since 0001 UTC on the day concerned. The meteorological watch offices whose area of responsibility encompasses more than one FIR and/or CTA shall issue separate SIGMET messages for each FIR and/or CTA within their area of responsibility." (4)
4. As per 1.1.4 "In accordance with the template in Table A6-1, only one of the following phenomena shall be included in a SIGMET message, using the abbreviations as indicated below [list of SIGMET phenomena follows]" (7)
5. In accordance with 4.2.1 a) "*obscured (OBSC) if it is obscured by haze or smoke or cannot be readily seen due to darkness*". (8)
6. In accordance with 4.2.4 "*Hail (GR) should be used as a further description of the thunderstorm, as necessary*" (9)
7. accordance with 4.2.1 b) "*embedded (EMBD) if it is embedded within cloud layers and cannot be readily recognized*" (10)
8. In accordance with 4.2.2 "An area of thunderstorms should be considered frequent (FRQ) if within that area there is little or no separation between adjacent thunderstorms with a maximum spatial coverage greater than 75 per cent of the area affected, or forecast to be affected, by the phenomenon (at a fixed time or during the period of validity)" (11)
9. In accordance with 4.2.3 "Squall line (SQL) should indicate a thunderstorm along a line with little or no space between individual clouds." (12)
10. Used for unnamed tropical cyclones. (13)
11. In accordance with 4.2.5 and 4.2.6 "Severe turbulence (TURB) should refer only to: low-level turbulence associated with strong surface winds; rotor streaming; or turbulence whether in cloud or not in cloud (CAT). Turbulence should not be used in connection with convective clouds." and "Turbulence shall be considered: a) severe whenever the peak value of the cube root of EDR exceeds 0.7" (14)
12. In accordance with 4.2.7 "Severe icing (ICE) should refer to icing in other than convective clouds. Freezing rain (FZRA) should refer to severe icing conditions caused by freezing rain". (15)
13. In accordance with 4.2.8 "A mountain wave (MTW) should be considered: a) severe whenever an accompanying downdraft of 3.0 m/s (600 ft/min) or more and/or severe turbulence is observed or forecast; and *b) moderate whenever an accompanying downdraft of 1.75–3.0 m/s (350–600 ft/min) and/or moderate turbulence is observed or forecast.*" (16)
14. In accordance with 4.2.9 "Sandstorm/duststorm should be considered: a) heavy whenever the visibility is below 200 m and the sky is obscured; and b) moderate whenever the visibility is: 1) below 200 m and the sky is not obscured; or 2) between 200 m and 600 m." (no footnote in Annex 3, but this is applicable reference)
15. In the case of the same phenomenon covering more than one area within the FIR, these elements can be repeated, as necessary. (21)
16. Only for SIGMET messages for volcanic ash cloud and tropical cyclones. (22)

17. Only for SIGMET messages for tropical cyclones. (23)
18. Only for SIGMET messages for volcanic ash. (24)
19. A straight line between two points drawn on a map in the Mercator projection or a straight line between two points which crosses lines of longitude at a constant angle. (25)
20. To be used for two volcanic ash clouds or two centres of tropical cyclones simultaneously affecting the FIR concerned. (26)
21. The number of coordinates should be kept to a minimum and should not normally exceed seven. (27)
22. Optionally can be used in addition to Movement or Expected Movement. (28, but ‘28’ does not appear to exist within the original A6-1 table to Annex 3.)
23. To be used for hazardous phenomena other than volcanic ash cloud and tropical cyclones. (29)
24. End of the message (as the SIGMET/AIRMET message is being cancelled). (30)
25. The levels of the phenomena remain fixed throughout the forecast period. (31)
26. During any SIGMET test message, no other information should be included after the specified text. (N/A)

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Appendix I - Guidance on Special air-reports

Example - Special air-report on volcanic ash

- **pilot to ACC Petropovlovsk-Kamchatsky**

  - A pilot provides a special air-report on volcanic ash via voice communications to ACC. Referencing PANS-ATM Appendix 1, Part 1 – Reporting instructions sections 1-4 and 9, the following example is provided.

    ‘**AIREP SPECIAL UNITED AIRLINES TREE TOO TOO POSITION FIFE FIFE ZERO TREE NORTH WUN SEVen ZERO TOO ZERO EAST FLIGHT LEVEL TREE ZERO ZERO CLIMBING TO FLIGHT LEVEL TREE FIFE ZERO VOLCANIC ASH CLOUD EXERCISE VOLKAM15 EXERCISE EXERCISE EXERCISE**‘

- **ACC Petropovlovsk-Kamchatsky (PKK) to MWO Yelizovo**

  There are different arrangements between ACC and MWO (e.g. information provided by fax or phone vs. AFTN). The following is an example of providing a special air-report from the ACC to the MWO via AFTN.

  - The format used for forwarding of meteorological information received by voice communications to the associated meteorological watch office (MWO) is provided in subtitle 3 of Appendix 1 of PANS-ATM. An example is provided based on the information given by the pilot or dispatch.

  - **ARS UAL322 5503N17020E 0105 F300 ASC F350 VA CLD=**

- **MWO Yelizovo to VAAC Tokyo, Regional OPMET Centre-ROC Vienna, SADIS, WIFS**

  - The format used for forwarding of a special air-report from the MWO to VAAC, ROC, SADIS and WIFS is in accordance to Annex 3, Appendix 6, Table A6-1 (**uplink**). An example is provided based on the informaton given by the ACC.

    ARS UA322 VA CLD FL300/350 OBS AT 0105Z N5503E17020=

  - The MWO should send this information using the World Meteorological Organization Abbreviated Header Line (WMO AHL) of **UARA71 RUPK** to:

    - Appropriate ROC – in this case, ROC Vienna at AFTN address **LOWMMMXX** which will then route to SADIS (EGZZWPXX) and WIFS (KWBCYMYX) Appropriate VAAC – in this case, VAAC Tokyo (fax: +81 (3) 3212 6446; email vaac@eqvol2.kishou.go.jp; AFTN address **RJTDYMYX**), according to the regional OPMET exchange schema

There is currently no provision for NO VA CLD, however, the following example is provided.

ARS UA322 NO VA CLD FL040/330 OBS AT 2315Z N5151E15734=

Example - Special air-report for severe turubulence

- **pilot to ACC Paris**

  - A pilot provides a special air-report on severe turbulence via voice communications to ACC. Referencing PANS-ATM Appendix 1, Part 1 – Reporting instructions sections 1-4 and 9, the following example is provided.

    ‘**AIREP SPECIAL AIR NEW ZEALAND WUN ZERO WUN POSITION FIFE ZERO ZERO FIFE NORTH ZERO ZERO TOO ZERO WUN WEST WUN FIFE TREE SIX FLIGHT LEVEL TREE WUN ZERO CLIMBING TO FLIGHT LEVEL TREE FIFE ZERO SEVERE TURBULENCE**‘

- **ACC Pairs (LFFF) to MWO Toulouse (Centre Meteo)**

  There are different arrangements between ACC and MWO (e.g. information provided by fax or phone vs. AFTN). The following is an example of providing a special air-report from the ACC to the MWO via AFTN.

  - The format used for forwarding of meteorological information received by voice communications to the associated meteorological watch office (MWO) is provided in subtitle 3 of Appendix 1 of PANS-ATM. An example is provided based on the information given by the pilot or dispatch.

  - **ARS ANL101 5005N00201W 1536 F310 ASC F350 SEV TURB=**

- **MWO Toulouse to Regional OPMET Centre-ROC Toulouse, SADIS, WIFS**

  - The format used for forwarding of a special air-report from the MWO to ROC, SADIS and WIFS is in accordance to Annex 3, Appendix 6, Table A6-1 (**uplink**). An example is provided based on the informaton given by the ACC.

    ARS NL101 SEV TURB OBS AT 1536Z N5005W00201 FL310=

  - The MWO should send this information using the World Meteorological Organization Abbreviated Header Line (WMO AHL) of **UAFR61 LFPW** to:

    - Appropriate ROC – in this case, ROC Toulouse at AFTN address **LFPWYMEU** which will then route to SADIS (EGZZWPXX) and WIFS (KWBCYMYX) according to the regional OPMET exchange schema