INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFRICA AND INDIAN OCEAN (AFI) REGIONAL SIGMET GUIDE

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RECORD OF AMENDMENTS AND CORRIGENDA

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Corrigenda			
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1	28/10/2008	27/10/2008	RO/MET

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1. INTRODUCTION

1.1 The main purpose of this document is to provide guidance for standardization and harmonization of the procedures and formats related to the aeronautical meteorological warnings for hazardous en-route meteorological phenomena, known as SIGMET information. The guidance is complementary to the Annex 3 standards and recommended practices regarding SIGMET and to the SIGMET related provisions of the AFI Basic ANP and FASID, ICAO Doc 7474.

1.2 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, 3.4 – 3.7, Chapter 7, 7.1, and Part II, Appendix 6;
- AFI Basic ANP, Part I and VI, and AFIFASID Table MET 1B, MET 3A and MET 3B;
- Annex 11 - Air Traffic Services, Chapter 4, 4.2.1 and Chapter 7, 7.1;
- PANS – Air Traffic Management, Doc 4444, Chapter 9, 9.1.3.2;
- Regional Supplementary Procedures, Doc 7030, Part 1, 8.2.

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

1.3 The SIGMET Guide is intended mainly to assist the MWOs in the ICAO African and Indian Ocean (AFIAFI) Region in preparing and disseminating SIGMET information. It provides detailed information on the format of SIGMET messages as specified by Annex 3. The explanations of the format are accompanied by 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.

1.4 This document was prepared by the ICAO AFI and ESAF Regional Offices. It is reviewed and updated regularly in order to be kept in line with the relevant ICAO SARPs and regional procedures. This current version incorporates the changes to SIGMET-related provisions included in Amendment 74 to Annex 3 which was approved by ICAO Council on 21 February 2007.

2. RESPONSIBILITIES AND COORDINATION

2.1 General

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

2.1.2 Airlines are the main users of the SIGMET information. They contribute to the effectiveness of the SIGMET service through issuance of special air-reports reported by pilots to the ATS units. Special air-reports are among the most valuable sources of information for the Meteorological Watch Offices (MWO) in the preparation of SIGMET. The ATS units receiving special air-reports should forward them to the associated MWOs without delay.

2.1.3 In view of the foregoing, it should be well understood that the effectiveness of the SIGMET service depends strongly on the level of collaboration between the MWOs, ATS units and pilots. That is why, close coordination between these parties, as well as mutual understanding of their needs and responsibilities, are essential for the successful implementation of the SIGMET service.

2.1.4 For the special cases of SIGMET for volcanic ash and tropical cyclones, the MWOs are provided with advisories from the volcanic ash advisory centres (VAAC), and tropical cyclone advisory centres (TCAC) designated in the Regional ANP.

2.1.5 Another use of SIGMET is for the flight planning. This requires global dissemination of SIGMET through the international OPMET data banks and the satellite broadcasts: ISCS and SADIS. SIGMET should also be distributed to the World Area Forecast Centres (WAFC) London and Washington for use in the preparation of the significant weather (SIGWX) forecasts.

2.1.6 In the next paragraphs, the main responsibilities and coordination links,related to the provision of SIGMET information, are described.

2.2 Meteorological Watch Office - responsibilities and procedures related to SIGMET

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

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

2.2.3 All designated MWOs in the AFI Region are listed in Appendix A to this Guide extracted from the FASID AFI Table MET 1B. The MWOs situated outside of the AFI Region are in italic.

2.2.4 If, for some reason, a State is not able to meet its obligations for establishing MWO(s) and for provision of SIGMET for the FIR(s) or control area(s) the State is providing air traffic services, arrangements should be made between the meteorological authorities of the States concerned, that another

MWOtakes over these responsibilities for certain period of time. Such delegation of responsibilities should 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 other 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. Corresponding operational procedures should be established and the meteorological staff should be trained accordingly.

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

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

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

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

a) issue SIGMET information based on the special-air report; 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 concerned is of transient nature).

2.2.9 Appropriate telecommunication means should be available at the MWO in order to ensure timely dissemination of SIGMET according to a dissemination scheme, which should include transmission to:

- Local ATS users;
- Aeronautical MET offices within its AOR, where SIGMET is required for briefing and/or flight documentation;
- Other MWOs concerned (it should be ensured that SIGMET is sent to all MWOs whose AORs are, at least partly, within the 1800 km (1000 NM) range from the observed phenomenon);
- Centres designated for transmission of VOLMET or D-VOLMET where SIGMET is required for those transmissions;
- Responsible AMBEX centre and Regional OPMET Data Bank (it should be arranged that through the AMBEX scheme SIGMETs are sent to the designated OPMET data banks in the other ICAO regions, to the WAFCs and to the SADIS and ISCS providers);

- Responsible TCAC or VAAC according to FASID Tables MET 3A and MET 3B.

2.2.10 In issuing SIGMET for tropical cyclones or volcanic ash, the MWOs should include as appropriate the advisory information received from the responsible TCAC or VAAC. In addition to the information received from the TCAC and VAAC the MWOs may use the 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) and arrangements should be in place to ensure:

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

- receipt and display at the ATS unit of SIGMETs issued by MWOs responsible for the adjacent FIRs/ACCs if these SIGMETs are required according to para2.3.4 below, (within 1800 km (1000 NM) range from the observed phenomenon); and

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

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

2.3.3 SIGMET information transmitted to aircraft-in-flight should cover a portion of the route up to two hours flying time ahead of the aircraft. SIGMET should be transmitted only during the time corresponding to their period of validity (p. 3.4.2.3 refers).

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 the FIR/CTA boundary, up to a distance of 1000 NM (1800 KM), which corresponds to two hours flying time ahead of the current position of the aircraft. If this is the case, the controllers should at their own initiative transmit the SIGMET promptly to the aircraft-in-flight likely to be affected. If necessary, the controller should pass to the aircraft available SIGMETs issued for the adjacent FIR/CTA, which the aircraft will be entering, if relevant to the expected flight route.

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

2.4 Responsibilities of pilots

2.4.1 Timely issuance of SIGMET information is largely dependant 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 TCACs and VAACs

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

2.5.2 Since the identification, analysis and forecasting of volcanic ash and tropical cyclones requires considerable technical and human resource, normally not available at each MWO, the Volcanic Ash Advisory Centres (VAAC) and Tropical Cyclone Advisory Centres (TCAC) have been designated to provided VA and TC advisories to the users and assist the MWOs in the preparation of the forecast part of the SIGMETs for those phenomena. Close coordination should be established between the MWO and its responsible TCAC and/or VAAC.

2.5.3 Information regarding the VAACs and TCACs serving the AFIRegionwith their corresponding areas of responsibility and lists of MWOs and ACCs to which advisories are to be sent is provided in FASID Tables MET 3A and MET 3B of the AFIFASID. These tables are reproduced in Appendix B and Appendix C to this Guide.

2.5.4 TC and VA advisories are required for global exchange through the satellite distribution systems, SADIS and ISCS. They are used by the operators during the preflight planning. Nevertheless, it should be emphasized that SIGMET information is still of higher operational status and is required especially for in-flight re-planning. SIGMETs should be transmitted to aircraft-in-flight through voice communication or VOLMET or D-VOLMET thus providing vital information for making in-flight decisions regarding large-scale route deviations due to volcanic ash clouds or tropical cyclones.

3. PROCEDURES FOR PREPARATION OF SIGMET INFORMATION

3.1 General

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

3.1.2 The increasing use of automated systems for handling the MET information by 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, which provides detailed information regarding the content and order of elements in the SIGMET message, should be followed strictly by the MWOs.

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

3.1.4 After the issuance of a SIGMET the MWO should maintain watch over the evolution of the phenomenon for which the SIGMET has been issued and issue updated SIGMET when necessary. The TC and VA SIGMET should be updated at least every 6 hours.

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

3.2 Types of SIGMET

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

- SIGMET for en-route weather phenomena other than VA and TC (this includes: TS, CB, TURB, ICE, MTW, DS and SS); this SIGMET will be referred as WS SIGMET;
- SIGMET for volcanic ash, which will hereafter be denoted as VA SIGMET or WV SIGMET; and
- SIGMET for tropical cyclones, which will hereafter be denoted as TC SIGMET or WC SIGMET.

3.2.2 The three types of SIGMET can be identified by the data type designator included in the WMO abbreviated heading of the SIGMET message, as explained below.

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 respective ATS unit and MWO, sequential number and period of validity;
- SIGMET main body, containing information concerning the observed or forecast weather phenomenon for which the SIGMET is issued together with its expected evolution within the period of validity;

3.3.2 The first two parts of the SIGMET message are common for all types of SIGMET. The format and content of the third part is different; that is why, in the following paragraphs the meteorological part of the SIGMET message is described separately for the three types of SIGMET.

3.4 Format of SIGMET

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

3.4.1 WMO Header

$T_1T_2A_1A_2$ii CCCC YYGGgg [CCx]

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

T_1T_2	Data type designator	WS – for SIGMET for meteorological phenomena other than volcanic ash cloud or tropical cyclone WC – for SIGMET for tropical cyclone WV – for SIGMET for volcanic ash
A_1A_2	Country or territory designators	Assigned according to Table C1, Part II of Manual on the Global Telecommunication System, Vol I – Global Aspects (WMO - No. 386)
ii	Bulletin number	Assigned on national level according to p 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 location indicator).

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

3.4.1.4 The group CCx should be used only when issuing a correction to a SIGMET which had already been transmitted.The third letter "x" takes the value A for the first correction, B for the second correction, etc.

Examples:

WSSG31 GOOY121200
WVCV31 GVAC 010230
WCGG31FCBB 100600 CCA

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 p.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 p.3.4.2.3)
CCCC	ICAO location indicator of the issuing MWO
-	hyphen to separate the preamble from the text

3.4.2.2 The numbering of SIGMETs starts 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:

GOOO SIGMET 2 VALID 121100/121700 GOOY-
DGACSIGMET A04 VALID 202230/210430 DGAA-

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 communication between ATC and pilots and in VOLMET and D-VOLMET.

3.4.2.3 The following considerations should be taken into account when determining the validity period:

- The period of validity of a WS SIGMET should not be more than 4 hours;
- The period of validity of a WC or WV SIGMET should not be more than 6 hours;
- In case of a SIGMET for an observed phenomenon, the filing time (date/time group in the WMO header) should be the same or very close to the time in the date/time group indicating the start of the SIGMET validity period;
- When the SIGMET is issued for a forecast phenomenon:
  - the beginning of validity period should be the time of the expected commencement (occurrence) of the phenomenon in the MWO area of responsibility;
  - the time of issuance of the SIGMET should not be more than 4 hours before the start of validity period (i.e., expected time of occurrence of the phenomenon); for TC and VA SIGMET the lead time should be up to 12 hours.

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

Examples:

1. SIGMET for an observed phenomenon:

WSNI31 DNKN241120
DNKKSIGMET 3 VALID 241120/241500 DNKN-

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

WSCG31 FCBB 311130
FCBBSIGMET 1 VALID 1530/1930 FCCC-

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

3.4.3.1 The meteorological part of a SIGMET for weather phenomena consists of seven elements as shown in the table below.

Start of the second line of the message

1	2	3	4	5
Name of the FIR/UIR or CTA	Description of the phenomenon	Observed or forecast	Location	Level
<CCCC><name> FIR [CTA]	<Phenomenon>	OBS [AT <GGgg>Z] FCST OBS [AT <GGgg>Z] AND FCST	Geographical location of the phenomenon given by coordinates, or geographical objects, or location indicators	FL<nnn> or FL<nnn/nnn> or [TOP [ABV or BLW]] FL<nnn>

6	7
Movement or expected movement	Changes in intensity
MOV <direction, speed>KMH[KT] or STNR	INTSF or WKN or NC

3.4.3.1.1 Name of the FIR/UIR or CTA(Column 1)

CCCC <name> FIR[/UIR]
or
CCCC <name> CTA

The ICAO location indicator and the name of the FIR/CTA is given followed by the appropriate abbreviation: FIR, FIR/UIR or CTA.

Examples:

DRRRNIAMEYFIR

3.4.3.1.2 Phenomenon(Column 2)

The phenomenon description consists of a qualifier and a phenomenon abbreviation. SIGMET should be issued only for the following phenomena:

at cruising levels (irrespective of altitude):

thunderstorms (TS) – if they are OBSC, EMBD, FRQ or SQL with or without hail;
turbulence (TURB) – only SEV
icing (ICE) – only SEV with or without FZRA
mountain waves (MTW) – only SEV
dust storm (DS) – only HVY
sand storm (SS) – only HVY
radioactive cloud – RDOACT CLD

The appropriate abbreviations and combinations, and their meaning are given in Appendix E.

3.4.3.1.3 Indication whether the phenomenon is observed or forecast(Column 3)

OBS [AT <GGgg>Z]
or FCST

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

Examples:

OBS AT 0140Z
FCST

3.4.3.1.4 Location of the phenomenon(Column 4)

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

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

- Indication of a part of the FIR with reference to latitude:
  N OF or S OF <Nnn[nn]> or <Snn[nn]>
- Indication of a part of the FIR with reference to longitude:

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

- Indication of a part of the FIR with reference to latitude and longitude: any combination of the above two cases;
- with reference to a location with ICAO location abbreviation CCCC (normally, this should be the case of SIGMET based on special air-report in which the reported phenomenon is given with reference to an airport or another object with ICAO location indicator CCCC);
- with reference to geographical features well known internationally.

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

3.4.3.1.5 Flight level and extent(Column 5)

FL<nnn>
or FL<nnn/nnn>
or TOP FL<nnn>
or [TOP] ABVFL<nnn>
or [TOP] BLWFL<nnn>

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

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

Examples:

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

3.4.3.1.6 Movement(Column 6)

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

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

Examples:

MOV NW 30KMH
MOV E 25KT

3.4.3.1.7 Expected changes in intensity(Column 7)

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

INTSF – intensifying
WKN – weakening
NC – no change

3.4.4 Structure of the meteorological part of VA SIGMET

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

Start of the second line of the message

1	2			3
FIR/UIR or CTA	Phenomenon	Volcano		Volcanic ash cloud observed or forecast
		Name	Location	
<CCCC><name> FIR [/UIR][CTA]	VA	[ERUPTION] [MT <name>]	[LOC <lat,lon>]	VA CLD OBS AT <GGgg>Z VA CLD FCST

4			5
Extent of the cloud			Expected movement
Vertical	Horizontal	Position	
FL <nnn/nnn>	[APRX <nnn> KM[NM] BY <nnn> KM[NM]]	[<lat,lon> - <lat,lon> - …]	MOV <direction><speed>

6	
Volcanic ash cloud forecast at the end of the period of validity	
FCST time	Position
FCST <GGgg>Z	VA CLD APRX <lat,lon> - <lat,lon> - …

3.4.4.2 Name and location of the volcano and/or indicator for VA cloud(Column 2)

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

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

- starts with the abbreviation VA – volcanic ash;
- the word ERUPTION is used when the SIGMET is issued for a known volcanic eruption;
- geographical/location information:

i. if the name of the volcano is known, it is given by the abbreviation MT – mountain, followed by the name;
e.g., MT RABAUL
ii. location of the volcano is given by the abbreviation LOC – location, followed by the latitude and longitude in degrees and minutes;
e.g., LOC N3520 E09040

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

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

3.4.4.3 Time of observation or indication of forecast(Column 3)

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

The time of observation is taken from the source of the observation – satellite image, special air- report, report from a ground volcano logical station, etc. If the VA cloud is not yet observed over the FIR but the volcanic ash advisory received from the responsible VAAC indicates that the cloud is going to affect the FIR within the next 12 hrs, SIGMET should be issued, according to paragraph 2.4 above, and the abbreviation VA CLD FCST should be used.

Examples:

VA CLD OBS AT 0100Z
VA CLD FCST

3.4.4.4 Level and extent of the volcanic ash cloud(Column 4)

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

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

If the VA cloud spreads over more than one FIR, separate SIGMETs should 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 and keep the description of the volcanic ash clouds consistent by checking the SIGMET messages received from the neighbouring MWOs.

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

Examples:

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

3.4.4.5 Movement or expected movement of the VA cloud(Column 5)

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

The direction of movement is given by the abbreviation MOV – moving, followed by one of the eight points of compass: N, NE, E, SE, S, SW, W, NW. The speed of movement is given in KMH or KT.

Examples:

MOV E 35KMH
MOV SW 20KT
STNR

3.4.4.6 Forecast position of the VA cloud at the end of the validity period of the SIGMET message(Column 6)

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

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

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

3.4.5 Structure of the meteorological part of TC SIGMET

3.4.5.1 The general structure of the meteorological part of the TC SIGMET is given in the table below:

Start of the second line of the message

1	2	3		4
		Observed or forecast		
FIR/UIR or CTA	TC name	Time	Locationof TC centre	Extent
<CCCC><name> FIR [/UIR][CTA]	TC <name>	OBS AT <GGgg>Z [FCST]	<lat,lon>	CB TOP [ABV or BLW] FL<nnn> WI <nnn>KM[NM] OF CENTRE

5	6	7
Expected movement	Intensity change	Forecast of the centre position at the end of the validity period
MOV <direction><speed>KMH[KT] or STNR	INTSF or WKN or NC	FCST <GGgg>Z TC CENTRE <lat,lon>

3.4.5.2 Name of the tropical cyclone(Column 2)

TC <name>

The description of the tropical cyclone consists of the abbreviation TC followed by the international name of the tropical cyclone given by the corresponding WMO RSMC.

Examples:

TC GLORIA
TC 04B

3.4.5.3 Time of observation or indication of forecast(Column 3.1)

OBS AT <GGgg>Z
or
FCST

The time in UTC is given in hours and minutes, followed by the indicator Z. Normally, time is taken from own observations or from a TC advisory received from the responsible TCAC. If the TC is not yet observed in the FIR but the tropical cyclone advisory received from the responsible TCAC, or any other TC forecast used by the MWO, indicates that the TC is going to affect the FIR within the next 12 hrs, SIGMET should be issued, according to paragraph 2.4 above, and the abbreviation FCST should be used.

Examples:

OBS AT 2330

3.4.5.4 Location of the TC centre(Column 3.2)

<location>

The location of the TC centre is given by its lat,lon coordinates in degrees and minutes.

Examples:

N1535 E14230

3.4.5.5 Vertical and horizontal extent of the CB cloud formation around TC centre (Column 4)

CB TOP [ABV or BLW] <FLnnn> WI <nnnKM or nnnNM> OF CENTRE

Examples:

CB TOP ABV FL450 WI 200NM OF CENTRE
CB TOP FL500 WI 250KM OF CENTRE

3.4.5.6 Movement or expected movement(Column 5)

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

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

Examples:

MOV NW 30KMH
MOV E 25KT

3.4.5.7 Intensity change(Column 6)

The expected change of the intensity of the tropical cyclone is indicated by one of the following abbreviations:

INTSF – intensifying
WKN – weakening
NC – no change

3.4.5.8 Forecast location of the TC centre at the end of the validity period of the SIGMET message(Column 7)

FCST <GGgg>Z TC CENTRE <location>

Normally, the time given by GGggZ should be the same as the end of validity period indicated in the first line of the SIGMET message. Since the period of validity is up to 6 hours (normally, 6 hours), this is a 6-hour forecast of the position of the TC centre.

The location of the TC centre is given by its lat, lon coordinates following the general rules of reporting lat, lon information provided in Appendix F to this Guide.

Examples:

FCST 1200Z TC CENTRE N1430 E12800

3.4.6 Cancellation of SIGMET

3.4.6.1 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, the SIGMET should be cancelled by the issuing MWO. The cancellation is done by issuing same type of SIGMET with the following structure:

- WMO heading with the same data type designator;
- First line that contains as period of validity the remaining time of the original period of validity;
- Second line, which contains the name of the FIR or CTA, the combination CNL SIGMET, followed by the sequential number of the original SIGMET and its validity period.

Examples:

1. WS SIGMET:

WSZR31 FZAA 101200
FZAA SIGMET 5 VALID 101200/101600 FZAA-
FZAA FIR KINSHASA…

Cancellation of WS SIGMET:

WSZR31 FZAA 101430
FZAA SIGMET 6 VALID 101430/101600 FZAA-
FZAA FIR KINSHASACNL SIGMET 5 101200/101600=

2. VA SIGMET

WVCG31 FCBB 131518
FCCC SIGMET 03 VALID 131515/132115 FCBB-
FCCC FIR BRAZZAVILLE…

Cancellation of a VASIGMET:

WVCG31 FCBB 132000
FCCC SIGMET 04 VALID 132000/132115 FCBB-
FCCCFIR BRAZZAVILLE CNL SIGMET 03 13151500/132115=

or, in case that the volcanic ash cloud moves to an adjacent FIR:

WSZR31 FZAA 132000
FZAA SIGMET 04 VALID 132000/132115 FZAA -

FZAA FIR KINSHASACNL SIGMET 03 13151500/132115 VA MOV TO YUDO FIR=

3.5 Dissemination

3.5.1 SIGMET information is part of the operational meteorological (OPMET) information. According to Annex 3 the telecommunication facilities used for the exchange of the operational meteorological information should be the aeronautical fixed service (AFS).

3.5.2 The AFS consists of a terrestrial segment, AFTN or ATN (AMHS), and a satellite segment which comprises the SADIS and ISCS satellite broadcasts provided by the UK and the USA respectively.

3.5.3 Currently, AFTN links should be used by the MWOs to send the SIGMET, as follows:

- to the adjacent MWOs and ACCs* using direct AFTN addressing;
- When required for VOLMET or D-VOLMET, SIGMET should be sent to the relevant centre providing the VOLMET service;
- SIGMET should be sent to all regional OPMET Data Banks (RODB);
- It should be arranged that SIGMET is relayed to the SADIS and ISCS providers for satellite dissemination, as well as to the WAFCs London and Washington, either through the AMBEX scheme, or directly by the issuing MWO;
- SIGMET for volcanic ash should be disseminated to the responsible VAAC.

3.5.4 Through SADIS and ISCS, SIGMET is disseminated to all authorised users . In this way, SIGMET is available on a global basis, meeting the aeronautical requirements.

* Note: For this dissemination it is required that SIGMET is available at the ACCs for transmission to aircraft in flight for the route ahead up to a distance corresponding to two hours flying time.

APPENDIX A: Meteorological Watch Offices

EXPLANATION OF THE TABLE

Column

1. Location of the meteorological watch office (MWO)

2. ICAO location indicator, assigned to the MWO

3 Name of the FIR, UIR and/or search and rescue region (SRR) served by the MWO

4 ICAO location indicator assigned to the ATS unit serving the FIR, UIR and/or SRR

5 X if the MWO in column 2 issues VA SIGMET

6 X if the MWO in column 2 issues TC SIGMET

7 Remarks

Note: MWOs in italics are situated outside the AFI Region.

MWO Location	ICAO loc. ind.	Area served		SIGMET		Remarks
		Name	ICAO loc. ind.	VA	TC	
1	2	3	4	5	6	7
ALGERIA						
ALGER/Baraki1	DAAL	Alger FIR/SRR	DAAA	X		
ANGOLA						
LUANDA/4 de Fevereiro	FNLU	Luanda FIR/SRR	FNAN	X		
BOTSWANA						
GABORONE/Sir SeretseKhamaIntl	FBSK	Gaborone FIR/SRR	FBGR	X	X	
BURUNDI						
BUJUMBURA/Bujumbura	HBBA	Bujumbura FIR	HBBA	X		
CANARYISLANDS (Spain)						
GRAN CANARIA/Gran Canary, Canary I.	GCLP	Canarias FIR and Grando RSS	GCCC	X		
CAPE VERDE						
SAL I./AMILCAR CABRAL	GVAC	Sal Oceanic FIR/SRR	GVSC	X		
CHAD						
N'DJAMENA/N'Djamena	FTTJ	N'Djamena FIR/SRR	FTTT	X		
CONGO						
BRAZZAVILLE/Maya-Maya	FCBB	Brazzaville FIR/SRR	FCCC	X		
DEMOCRATIC REP. OF THE CONGO						
KINSHASA/N'Djili	FZAA	Zaire FIR, Kinshasa SRR	FZAA	X		
EGYPT						
CAIRO/Cairo Intl	HECA	Cairo FIR/SRR	HECC	X		
ETHIOPIA						
ADDIS ABABA/Bole Intl	HAAB	Addis Ababa FIR/SRR	HAAA	X		
ERITREA						
ASMARA	HHAS	Asmara FIR	HHAA	X		
GHANA						
ACCRA/Kotoka Intl	DGAA	Accra FIR/SRR	DGAC	X		

MWO Location	ICAO loc. ind.	Area served		SIGMET		Remarks
		Name	ICAO loc. ind.	VA	TC	
1	2	3	4	5	6	7
KENYA						
NAIROBI/Jomo Kenyatta Intl	HKJK	Nairobi FIR/SRR	HKNA	X	X	
LIBERIA2						/
MONROVIA/Roberts Intl	GLRB	Roberts FIR/SRR	GLRB	X		
LIBYAN ARAB JAMAHIRIYA						
TRIPOLI/Tripoli Intl	HLLT	Tripoli FIR/SRR	HLLL	X		
MADAGASCAR						
ANTANANARIVO/Ivato	FMMI	Antananarivo FIR/SRR	FMMM	X	X	
MALAWI						
LILONGWE/Lilongwe Intl	FWLI	Lilongwe FIR/SRR	FWLL	X	X	
MAURITIUS						
MAURITIUS/Sir SeewoosagurRamgoolam Intl	FIMP	Mauritius FIR/SRR	FIMM	X	X	
MOROCCO						
CASABLANCA/Anfa	GMMC	Casablanca FIR/SRR	GMMM	X		
MOZAMBIQUE						
MAPUTO/Maputo Intl	FQMA	Beira FIR/SRR	FQBE	X	X	
NAMIBIA						
WINDHOEK/Hosea Kutako	FYWH	Windhoek FIR/SRR	FYWH	X		
NIGER						
NIAMEY/DioriHamani Intl	DRRN	Niamey FIR/SRR	DRRR	X		
NIGERIA						
KANO/MallamAminu Kano Intl	DNKN	Kano FIR/SRR	DNKK	X		
RWANDA						
KIGALI/GregoireKayibanda	HRYR	Kigali FIR/SRR	HRYR	X		
SENEGAL						
DAKAR/Leopold Sedar Senghor	GOOY	Dakar FIR/SRR Dakar oceanic FIR	GOOO	X		

MWO Location	ICAO loc. ind.	Area served		SIGMET		Remarks
		Name	ICAO loc. ind.	VA	TC	
1	2	3	4	5	6	7
SEYCHELLES						
MAHE/Seychelles Intl	FSIA	Seychelles FIR/SRR	FSSS	X	X	
SOMALIA						
MOGADISHU/Mogadishu	HCMM	Mogadishu FIR/SRR	HCSM	X		
SOUTH AFRICA						
CAPE TOWN/Cape Town	FACT	Cape town FIR	FACT	X		
JOHANNESBURG/Johannesburg	FAJS	Johannesburg FIR/ARCC	FAJS	X	X	
JOHANNESBURG/Johannesburg	FAJO	Johannesburg Oceanic	FAJO	X	X	
SUDAN						
KHARTOUM/Khartoum	HSSS	Khartoum FIR/SRR	HSSS	X		
TUNISIA						
Institut National de la Météorologie	DTTA	Tunis FIR/UIR	DTTC	X		
UGANDA						
ENTEBBE/Entebbe Intl.	HUEN	Entebbe FIR	HUEC	X		
UNITED REPUBLIC OF TANZANIA						
DAR-ES-SALAAM/Dar-es-Salaam	HTDA	Dar-es-Salaam FIR	HTDC	X	X	
ZAMBIA						
LUSAKA/Lusaka Intl	FLLS	Lusaka FIR/SRR	FLFI	X		
ZIMBABWE						
HARARE/Harare	FVHA	Harare FIR/SRR	FVHA	X	X	

APPENDIX B: Tropical Cyclone Advisory Centres

FASID AFI TABLE MET 3A

EXPLANATION OF THE TABLE

Column

1. Location of the tropical cyclone advisory centre (TCAC).
2. ICAO location indicator of TCAC (for use in the WMO heading of advisory bulletin).
3. Area of responsibility for the preparation of advisory information on tropical cyclones by the TCAC in Column 1.
4. Period of operation of the TCAC.
5. MWOs to which the advisory information on tropical cyclones should be sent.
6. ICAO location indicator of the MWOs in Column ~~4~~ 6.

Note: MWOs in italics are situated outside the AFI Region.

TABLE MET 3A

TROPICAL CYCLONE ADVISORY CENTRES

TROPICAL CYCLONE ADVISORY CENTRE	ICAO LOC. INDICATOR	AREA OF RESPONSIBILITY	PERIOD OF OPERATION	MWOs TO WHICH ADVISORY INFORMATION IS TO BE SENT	
				Name	ICAO LOC. INDICATOR
1	2	3	4	5	6
RÉUNION (France)	FMEE	SouthwestIndianOcean Sud-ouest de l'océan Indien Sudoeste del océano Índico N: 0° S S: 30°S W: 30°E E: 90°E	1 November–30 April 1er novembre–30 avril 1 de noviembre–30 de abril	Antananarivo ~~Bloemfontein~~ Bombay/Mumbay Dar-es-Salaam ~~Durban~~ Gaborone Harare Johannesburg Johannesburg Oceanic Cape town Lilongwe Mahé/Seychelles Male Maputo Mauritius Nairobi	FMMA ~~FABL~~ VABB HTDC ~~FADN~~ FBSK FVHA FAJS FWKI FSIA FSIA FSIA VRMM FQMA FIMM HKJK

APPENDIX C: Volcanic Ash Advisory Centres

FASID AFI TABLE MET 3B

EXPLANATION OF THE TABLE

Colum~~n~~
n

~~3~~1. Name ~~Location~~ of the volcanic ash advisory centre (VAAC).

2~~4~~. ICAO location indicator of VAAC (for use in the WMO header~~ing~~ of advisory bulletin).

3.~~5~~. Area of responsibility for the preparation of advisory information on volcanic ash by the VAAC in Column 1.

4.~~6~~. MWOs to which the advisory information on volcanic ash should be sent.

5.~~7~~. ICAO location indicator of the MWOs in Column 4.

6~~8~~. Name of the ACCs to which the advisory information on volcanic ash should be sent.

7~~9~~. ICAO location indicator of the ACCs in Column 6

Note: MWOs and ACCs in italics are situated outside the AFI Region

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FASID TABLE MET 3B — VOLCANIC ASH ADVISORY CENTRES

VOLCANIC ASH ADVISORY CENTRE	ICAO LOCATION INDICATOR	AREA OF RESPONSIBILITY	MWOs TO WHICH ADVISORY INFORMATION IS TO BE SENT		ACC TO WHICH ADVISORY INFORMATION IS TO BE SENT	
			Name	ICAO LOCATION INDICATOR	Name	ICAO LOCATION INDICATOR
1	2	3	4	5	6	7
Toulouse (France)	LFPW	AFI Region Santa Maria Oceanic*, EUR* (except for London, Scottish and Shannon FIRs) and MID* Regions: south of 71°N, west of 60°E FIR Santa Maria Oceanic*, régions EUR* (sauf les FIR London, Scottish et Shannon) et MID*: au sud de 71°N, ouest de 60°E Santa MariaOceanic*, EUR* (excepto las FIR London, Scottish y Shannon) y Regiones MID: sur del paralelo 71°N oestedelparalelo 60°E	Accra Addis Ababa Amilcar Cabral Antananarivo Brazzaville Bujumbura Dakar Gran Canaria Kano Kigali Kinshasa Nairobi Niamey N'Djamena Sal I.	DGAA HAAB GVAC FMMI FCBB HBBA GOOY GCLP DNKN HRYR FZAA HKNA DRRN FTTJ GVAC	Accra Addis Ababa Antananarivo Brazzaville Bujumbura Dakar Gran Canaria Kano Kigali Kinshasa Nairobi Niamey N'Djamena Robertsfield (Conakry) Sal I.	DGAA HAAB FMMI FCBB HBBA GOOY GCLP DNKN HRYR FZAA HKNA DRRN FTTJ GUCY GVAC

APPENDIX D: List of the Abbreviations and Code Words Used in SIGMET

ABV	Above
AND*	And
APRX	Approximate or approximately
AT	At (followed by time)
BLW	Below
BY*	By
CB	Cumulonimbus
CENTRE*	Centre (used to indicate tropical cyclone centre)
CLD	Cloud
CNL	Cancel or cancelled
CTA	Control area
DS	Dust storm
E	East or eastern longitude
ERUPTION*	Eruption (used to indicate volcanic eruption)
EMBD	Embedded in layer (to indicate CB embedded in layer of other clouds)
FCST	Forecast
FIR	Flight information region
FL	Flight level
FRQ	Frequent
FZRA	Freezing rain
GR	Hail
HVY	Heavy (used to indicate intensity of weather phenomena)
ICE	Icing
INTSF	Intensify or intensifying
ISOL	Isolated
KM	Kilometers
KMH	Kilometers per hour
KT	Knots
LINE*	Line
MOV	Move or moving or movement
MT	Mountain
MTW	Mountain waves
N	North or northern latitude
NC	No change
NE	North-east
NM	Nautical miles
NW	North-west
OBS	Observed
OBSC	Obscured
OCNL	Occasional
OF*	Of … (place)
RA	Rain
RDOACT	Radioactive
S	South or southern latitude
SE	South-east
SEV	Severe (used e.g. to qualify icing and turbulence reports)

SIGMET	SIGMET (used to indicate SIGMET information)
SQL	Squall line
SS	Sandstorm
STNR	Stationary
SW	South-west
TC	Tropical cyclone
TO	To … (place)
TOP	Cloud top
TS	Thunderstorm
TURB	Turbulence
UIR	Upper flight information region
VA	Volcanic ash
VALID*	Valid
W	West or western longitude
WI	Within
WID	Width
Z	Coordinated Universal Time (used in meteorological messages)

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

APPENDIX E: Meteorological Phenomena to be Reported by SIGMET

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

Notes:

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

2. Obscured (OBSC) indicates that the thunderstorm (including, if necessary, CB-cloud which is not accompanied by a thunderstorm) is obscured by haze or smoke or cannot be readily seen due to darkness

3. Embedded (EMBD) – indicates that the thunderstorm (including, if necessary, CB-cloud which is not accompanied by a 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 consideredsevere whenever the peak value of the cube root of 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 forecast.

APPENDIX F: Standard for Reporting Geographical Coordinates in SIGMET

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

1. Each point is represented by a 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:	N0518 W00401	Abidjan
	S0419 E01519	Kinshasa
	N1443 W01728	Dakar

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

N1334 W00739 – N1327 W01635 – N0932 W1340– N0518 W00401 (Bamako, Banjul, Conakry, Abidjan)

S05 E093 – N01 E095 – N12 E110 – S08 E103

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

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

4. Reporting a phenomenon occupying two different geographical areas within the FIR. This is frequently the case with two (or more) separate TS formations occurring in different parts of the FIR at the same time. The question is whether a separate SIGMET should be issued for each formation, or, one SIGMET could include location description for two (or more) geographical areas. The current SIGMET format does not allow for reporting of more than one phenomenon or two different TS areas. Therefore, in cases like this, two separate SIGMETs should be issued. The main concern with issuing separate SIGMETs is that, in general, a new SIGMET for the same FIR would replace the previous one; this may lead to rejecting valid information in case as described above. It should be noted in this regard, that the current SIGMET format allows for using different sequence numbers and thus, for keeping more than one SIGMET at a time valid for the FIR concerned; for instance, a series A1, A2,… could be used for "phenomenon A" and B1, B2, … , for "phenomenon B".

APPENDIX G: Examples

Note: Most examples are based on real SIGMETs. The real SIGMETs have been corrected in order to make them compliant with the Annex 3 format.

1. WS SIGMET

SIGMET for thunderstorms

WSCG31 FCBB 122305
FCCC SIGMET 9 VALID 122330/130230 FCBB-
FCCCBRAZZAVILLE FIR EMBD TS OBS N0241 E01250 – N0443 E01552 – N0200 E01630 – N0300 E01500 TOP FL400 STNR NC=

WSNT03 KKCI 032340
KZNY SIGMET C17 VALID 032345/040345 KKCI-
KZNY NEW YORK OCEANIC FIR FRQ TS OBS WI AREA N2400 W05500 - N2300 W04930 - N1845 W05645 - N2100 W05800 - N2400 W05500 TOP FL450 MOV E 15KT INTSF=

WSSG31 GOOY 091131
GOOO SIGMET 3 VALID 091140/091540 GOOY-
GOOODAKAR FIR SQL OBS 1130Z LINEN17W10 –N13 W07 – N07 W05MOV W 10KMH WKN=

WSUK31 EGGY 121120
EGTT SIGMET 01 VALID 121125/121525 EGRR-
EGTT LONDON FIR EMBD TSGR OBS AT 1115Z SE OF LINE N5130 E00200 - N5000 W00400 TOPS FL220 MOV NE 30KT NC=

1.2 SIGMET for severe turbulence

WSAU21 AMMC 280546
YBBB SIGMET BS02 VALID 280600/281200 YMMC-
YBBB BRISBANE FIR SEV TURB FCST WI S3900 E15100 - S4300 E15100 - S4300 E16000 - S4100 E16300 - S3700 E16300 - S3900 E16000 FL260/370 MOV E 20 KT NC=

WSZR31FZAA 280003
FZAA SIGMET 01 VALID 280002/280402 FZAA-
FZAA KINSHASA FIR SEV TURB OBS W OF MT KILIMANJARO BLW FL100 STNR NC=

1.3 SIGMET for severe icing

WSFR31 LFPW 280400
LFMM SIGMET 2 VALID 280500/280900 LFMM-
LFMM FIR MARSEILLE SEV ICE OBS AT 0400Z LIONGULF FL040/100 STNR NC=

WSIY31 LIIB 032152
LIMM SIGMET 07 VALID 032200/040200 LIMM-
LIMM MILANO FIR SEV ICE FCST OVER ALPS AND N PART APPENNINIAN AREA FL030/120 MOV E NC=

1.4 SIGMET for heavy duststorm

WSNR31 DRRN 160530
DRRR SIGMET 4 VALID 160600/161000 DRRN-
DRRR NIAMEY FIR HVY DS OBS N OF N1800 S OF N2300 W OF E01500 E OF E00600 MOV W 10KMH NC=

1.5 SIGMET for severe mountain wave

WSUK31 EGGY 150550
EGTT SIGMET 03 VALID 150600/151000 EGRR-
EGTT LONDON FIR SEV MTW FCST N OF N5100 FL090/140 STNR WKN=

2. VA SIGMET

2.1 VA SIGMET - full

WVPH01 RPLL 211110
RPHI SIGMET 2 VALID 211100/211700 RPLL-
RPHI MANILA FIR VA ERUPTION MT PINATUBO LOC S1500 E07348
VA CLD OBS AT 1100Z FL310/450 APRX 220KM BY 35KM S1500 E07348 – S1530 E07642 MOV SE 65KMH FCST 1700Z VA CLD APRX S1506 E07500 – S1518 E08112 – S1712 E08330 – S1824 E07836=

Note:The coordinates used in describing the VA cloud are fictitious.

2.2 "Short" first SIGMET (no FCST)

YUDD SIGMET 2 VALID 211100/211700 YUSO-
YUDD SHANLON FIR/UIR VA ERUPTION MT ASHVAL LOC S1500 E07348
VA CLD OBS AT 1100Z FL310/450 APRX 220KM BY 35KM S1500 E07348 – S1530 E07642 MOV SE 65KMH FCST 1700Z VA CLD APRX S1506 E07500 – S1518 E08112 – S1712 E08330 – S1824 E07836=

or

YUDD SIGMET 2 VALID 211100/211700 YUSO-
YUDD SHANLON FIR/UIR VA ERUPTION MT ASHVAL LOC S1500 E07348
VA CLD OBS AT 1100Z FL100/180 APRX 220KM BY 35KM S1500 E07348 – S1530 E07642=

WVFJ01 NFFN 090900
NFFF SIGMET 03 VALID 090915/091515 NFFN-
NFFF NADI FIR VA ERUPTION MT LOPEVI LOC S1630 E16820 VA CLD OBS AT 0330Z FL090 APRX 10NM BY 10NM MOV SE 25KT FCST 1515Z VA CLD APPRX S1630 E16820 - S1900 E17600 - S1930 E17030=

2.3 SIGMET for VA CLD in the FIR but the volcano information is unknown

YUDD SIGMET 2 VALID 211100/211700 YUSO-
YUDD SHANLON FIR/UIR VA CLD OBS AT 1100Z FL310/450 APRX 220KM BY 35KM S1500 E07348 – S1530 E07642 MOV SE 65KMH FCST 1700Z VA CLD APRX S1506 E07500 – S1518 E08112 – S1712 E08330 – S1824 E07836=

2.4 SIGMET for VA CLD forecast to affect the FIR

We assume that the responsible VAAC has issued an advisory at 0200Z with forecast positions of the VA CLD for 0800Z, 1400Z and 2000Z. From this forecast it is seen that the VA CLD will enter the YUDD FIR around 0800Z. The responsible MWO, YUSO receiving this advisory prepares a SIGMET for the expected penetration of the VA cloud in its FIR and this SIGMET is send at 0230Z.

WVXY01 YUSO 210230
YUDD SIGMET 2 VALID 210800/211400 YUSO-
YUDD SHANLON FIR/UIR VA CLD FCST FL310/450 APRX 220KM BY 35KM S1500 E07348 – S1530 E07642 MOV SE 65KMH FCST 1400Z VA CLD APRX S1506 E07500 – S1518 E08112 – S1712 E08330 – S1824 E07836=

Notes: 1. The forecast positions at 0800Z and 1400Z are taken from the VA advisory.

3. TC SIGMET

3.1. TC Graham – SIGMET issued by MWO Perth - Australia

WCOC31 APRF 280453
YBBB SIGMET PH01 VALID 280500/281100 YPRF-
YBBB BRISBANE FIR TC GRAHAM OBS AT 0400Z S1806 E12145 CB TOP FL450 WI 120NM OF CENTRE MOV SE 7KT INTSF FCST 1100Z TC CENTRE S1808 E12150=

3.2. SIGMET messages issued in July 2003 during the passage of TC Koni

WCSS20 VHHH 200240
VHHK SIGMET 2 VALID 200900/201500 VHHH-
VHHK HONG KONG CTA TC KONI OBS AT 0000Z N1618 E11506CB TOP FL500 WI 90NM OF CENTRE MOV NW 8KT NCFCST 1500Z TC CENTRE N1749 E11347=

Note: This SIGMET is issued before the TC Koni started affecting the Hong Kong CTA, as seen from the issuing time and the start of validity time

WCSS20 VHHH 201150
VHHK SIGMET 7 VALID 201200/201800 VHHH-
VHHK HONG KONG CTA TC KONI OBS AT 0900Z N1712 E11400 CB TOP FL500 WI 90NM OF CENTRE MOV NW 10KT NCFCST 1800Z TC CENTRE N1810 E11300=

WCSS20 VHHH 201450
VHHK SIGMET 10 VALID 201800/210000 VHHH-
VHHK HONG KONG CTA TC KONI OBS AT 1500Z N1730 E11330CB TOP FL500 WI 60NM OF CENTRE MOV NW 10KT NCFCST 2100Z TC CENTRE N1818 E11240=

APPENDIX H: WMO Headings for SIGMET Bulletins Used by AFIMeteorological Watch Offices (MWO)

EXPLANATION OF THE TABLE

Col 1: State and name of the MWO

Col 2: ICAO location indicator of the MWO

Col 3: $T_1T_2A_1A_2$ii group of the WMO heading for the WS SIGMET bulletin

Col 4: $T_1T_2A_1A_2$ii group of the WMO heading for the WC SIGMET bulletin (tropical cyclone)

Col 5: $T_1T_2A_1A_2$ii group of the WMO heading for the WV SIGMET bulletin (volcanic ash)

Col 6: ICAO location indicator of the FIR/CTA served by the MWO

Col 7: Remarks

WMO HEADINGS FOR SIGMET BULLETINS
USED BY AFI METEOROLOGICAL WATCH OFFICES

MWO Location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
ALGERIA ALGER/Baraki	DAAL	WSAL31		WVAL31	DAAA	
ANGOLA LUANDA/4 de Fevereiro	FNLU	WSAN31		WVAN31	FNAN	
BOTSWANA GABORONE/Sir SeretseKhama	FBSK	WSBC31	WCBC31	WVBC31	FBGR	
BURUNDI BUJUMBURA/Bujumbura	HBBA	WSBI31		WVB131	HBBA	
CANARYISLANDS (Spain) GRAN CANARIA/Gran Canary, Canary I	GCLP	WSCR31		WVCR31	GCCC	
CAPEVERDE SAL I/Amilcar Cabral	GVAC	WSCV31		WVCV31	GVSC	
CHAD N'DJAMENA/N'djamena	FTTJ	WSCD31		WVCD31	FTTT	
CONGO BRAZZAVILLE/Maya-Maya	FCBB	WSCG31		WVCG31	FCCC	
D.R.CONGO KINSHASA/N'Djili	FZAA	WSZR31	WCZR31	WVZR31	FZAA	
EGYPT CAIRO/Cairo International	HECA	WSEG31	WCEG31	WVEG31	HECC	
ETHIOPIA ADDIS ABABA/Bole Intl	HAAB	WSET31		WVET20	HAAA	
ERITREA ASMARA	HHAS	WSEI31		WVEI31	HHAA	
GHANA ACCRA/Kotoka Int'l	DGAA	WSGH31		WVGH31	DGAC	
KENYA KENYA/Jomo Kenyatta Int'l	HKJK	WSKN31	WCKN31	WVKN31	HKNA	
LIBERIA MONROVIA/Roberts Int'l	GLRB	WSLI31		WVSL31	GLRB	
LIBYAN ARAB JAMAHIRIYA TRIPOLI/Tripoli Int'l	HLLT	WSLY31		WVLY31	HLLL	
MADAGASCAR ANTANANARIVO/Ivato	FMMI	WSMG31	WCMG20	WVMG20	FMMM	
MALAWI LILONGWE/Lilongwe Int'l	FWLI	WSMW31	WCMG31	WVLI31	FWLL	

MWO Location	ICAO location indicator	WMO SIGMET Headings			FIR/ACC served	Remarks
		WS	WC	WV	ICAO location indicator	
1	2	3	4	5	6	7
MAURITIUS MAURITIUS/Sir SeewoosagurRamgoolam Int'l	FIMP	WSMA31	WCMG20	WVMA31	FIMM	
MOROCCO CASABLANCA/Anfa	GMMC	WSMC31		WVMC31	GMMM	
MOZAMBIQUE MAPUTO/Maputo Int'l	FQMA	WSMZ31	WCMZ20	WVMZ31	FQBE	
NAMIBIA WINDHOEK/Hosea Kutako	FYWH	WSNM31		WVNM31	FYWH	
NIGER NIAMEY/DioriHmaniInt'l	DRRN	WSNR31		WVNR31	DRRR	
NIGERIA KANO/MallamAminuKanoInt'l	DNKN	WSNI31		WVNI31	DNKK	
RWANDA KIGALI/GregoireKayibanda	HRYR	WSRW31		WVRW31	HRYR	
SENEGAL Leopold Sedar Senghor	GOOY	WSSG31		WVSG31	GOOO	
SEYCHELLES MAYE/Seychelles Int'l	FSIA	WSSC31	WCSC20	WVSC31	FSSS	
SOMALIA MOGADISHU/Mogadishu	HCMM	WSSI31		WVSI31	HCSM	
SOUTH AFRICA JOHANNESBURG/Johannesburg	FAJS	WSZA31	WCZA31	WVZA31	FACA FAJA FAJO	
SUDAN KHARTOUM/Khartoum	HSSS	WSSU31		WVSU31	HSSS	
TUNISIA TUNIS/Carthage	DTTA	WSTS31		WVTS31	DTTC	
UGANDA ENTEBBE/Entebbe Int'l	HUEN	WSUG31		WVUG31	HUEC	
UNITED REPUBLIC OF TANZANIA DAR-ES-SALAAM/Dar-es-Salaam	HTDA	WSTN31	WCTN31	WVTN31	HTDC	
ZAMBIA LUSAKA/Lusaka Int'l	FLLS	WSZB31		WVZB31	FLFI	
ZIMBABWE HARARE/Harare	FVHA	WSZW31	WCZW31	WVZW31	FVHA	

APPENDIX H1: OPERATIONAL UNITS

OPERATIONAL UNITS/UNITES OPERATIONNELLES

MWO, RODB, VAAC, TCAC AND ACC/FIC AFTN ADDRESSES OF THE AFI REGION
ADRESSES RSFTA DES CVM, BRDO, VAAC, TCAC ET CCR/CIV DE LA REGION AFI

MWO, RODB, VAAC, TCAC AND ACC/FIC Location	ICAO location indicator	AFTN Address/Adresse RSFTA			FIR/ACC served	Confirmation Date/ Date de confirmation
		MWO/CVM	ACC/CCR	FIC/CIV	ICAO location indicator	
1	2	3	4	5	6	7
ALGERIA ALGER/Houari Boumedienne	DAAG	DAAGYMYX	DAAAZQZX	DAAAZQZX	DAAA	
ANGOLA 4 de Fevereiro	FNLU	FNLUYMYX	FNANZAZX	FNANZQZX	FNAN	02/05/2008
BOTSWANA Gaborone/Sir Seretse Khama Int.	FBSK	FBSKYMYX	FBGRZRZX	FBGRZRZX	FBGR	18/03/2008
BURUNDI BUJUMBURA	HBBA	HBBAYMYX	HBBAZQZX	HBBAZQZX	HBBA	
CANARY ISLANDS GRAN CANARIA	GCLP	GCLPYMYX	GCLPZQZX	GCLPZQZX	GCCC	
CAPE VERDE SAL I/Amilcar Cabral	GVAC	GVACYMYX	GVSCZQZX	GVSCZQZX	GVSC	11/01/2008. Fax N°T/10-1009
CHAD N'Djamena/Hassan Djamous International	FTTJ	FTTJYMYX	FTTTZQZX FTTTZRZX FTTTZUZX FTTTZFZX	FTTTZIZX FTTTZFZX FTTTZQZX	FTTT	15/04/2009. Fax N° 2009/000119/ ASECNA/DEED/DEETT
CONGO BRAZZAVILLE/Maya-Maya	FCBB	FCBBYMYX	FCCCZQZX FCCCZRZX FCCCZUZX FCCCZFZX	FCCCZQZX FCCCZFZX FCCCZIZX	FCCC	15/04/2009. Fax N° 2009/000119/ ASECNA/DEED/DEETT
D.R. CONGO KINSHASA/N'Djili	FZAA	FZAAYMYX	FZAAZQZX	FZAAZQZX	FZAA	18/01/2008. E-mail from ASECNA HQ (Sougué)
EGYPT CAIRO	HECA	HECAYMYX	HECAZQZX	HECAZQZX	HECC	
ERITREA ASMARA	HHAS	HHASYMYX	HHASZQZX	HHASZQZX	HHAA	
ETHIOPIA ADDIS ABABA/Bole Int.	HAAB	HAABYMYX	HAAAZQZX	HAAZQZX	HAAA	07/03/2008
GHANA ACCRA/Kotoka International Airport	DGAA	DGAAYMYX	DGACZQZX	DGACZQZX	DGAC	24/12/2007. E-mail at 09:12 from Juati Ayilari-Naa
KENYA NAIROBI/Jomo Kenyatta	HKJK	HKJKYMYX	HKNAZQZX	HKNAZQZX	HKNA	10/03/2008

LIBERIA MONROVIA/Roberts International Airport	GLRB	GLRBYMYX	GLRBZQZX	GLRBZQZX	GLRB	
LIBYA TRIPOLI	HLLT	HLLTYMYX	HLLTZQZX	HLLTZQZX		
MADAGASCAR ANTANANARIVO/Ivato	FMMI	FMMIYMYX	FMMIZTZX	FMMIZQZX	FMMM	14/03/2008
MALAWI LILONGWE/Kamuzu Int.	FWKI	FWKIYMYX	FWLLZQZX	FWLLZQZX	FWLL	
MOROCCO CASABLANCA/Anfa	GMMC	GMMCYMYX	GMMMZQZX	GMMMZQZX	GMMM	E-mail du 30/03/2009
MAURITIUS MARITIUS/Sir Seewoosagur Ramgoolam Int.	FIMP	FIMPYMYX	FIMMZQZX	FIMMZQZX	FIMM	17/03/2008
MOZAMBIQUE MAPUTO/Maputo Intl	FQMA	FQMAYMYX	FQBEZQZX	FQBEZIZX	FQBE	07/03/2008
NAMIBIA WINDHOEK/Hosea Kutako	FYWH	FYWHYMYX	FYNMZQZX	FYNMZQZX	FYNM	06/03/2008
NIGER NIAMEY/Diori Hmani International Airport	DRRN	DRRNYMYX	DRRRZQZX DRRRZRZX DRRRZUZX DRRRZFZX	DRRRZIZX DRRRZQZX DRRRZFZX	DRRR	15/04/2009. Fax N° 2009/000119/ ASECNA/DEED/DEETT
NIGERIA KANO/Mallam Aminu Kano International Airport	DNKN	DNKNYMYX	DNKNZQZX	DNKNZQZX	DNKK	07/01/2008. E-mail at 14:08 from Rahim Adewara
RWANDA KIGALI/Gregoire Kayibanda	HRYR	HRYRYMYX	HRYRZQZX	HRYRZQZX	HRYR	
SENEGAL DAKAR/Leopold Sedar Senghor	GOOY	GOOYYMYX	GOOOZQZX GOOOZRZX GOOOZUZX GOOOZFZX	GOOOZIZX GOOOZFZX GOOOZQZX GOOOZOZX	GOOO	15/04/2009. Fax N° 2009/000119/ ASECNA/DEED/DEETT
SEYCHELLES MAHE/Seychelles Intl	FSIA	FSIAYMYX	FSSSZQZX	FSSSZQZX	FSSS	06/03/2008

SOMALIA MOGADISHU/Mogadishu	HCMM	HCMMYMYX	HCSMZQZX	HCSMZQZX	HCSM	
SOUTH AFRICA JOHANNESBURG/O.R.Tambo Int	FAJS	FAJSYMYX	FACAZQZX	FACAZQZX	FACA	06/03/2008
JOHANNESBURG/O.R.Tambo Int	FAJS	FAJSYMYX	FAJAZQZX	FAJAZQZX	FAJA	
JOHANNESBURG/O.R.Tambo Int	FAJS	FAJSYMYX	FAJOZQZX	FAJOZQZX	FAJO	
SUDAN KHARTOUM	HSSS	HSSSYMYX	HSSSZQZX	HSSSZQZX	HSSS	
TUNISIA TUNIS/Carthage	DTTA	DTTAYMYX	DTTCZQZX DTTCZRZX	DTTCQZX DTTCZRZX	DTTC	24/04/2009. Fax N° 01391 du 27 avril 2009
UGANDA ENTEBBE/Entebbe Int.	HUEN	HUENYMYX	HUECZQZX	HUECZQZX	HUEC	
UNITED REPUBLIC OF TANZANIA DAR-ES-SALAAM/Dar-es-Salaam	HTDA	HTDAYMYX	HTDCZQZX	HTDCZQZX	HTDC	
ZAMBIA LUSAKA/Lusaka Int.	FLLS	FLLSYMYX	FLFIZQZX	FLFIZQZX	FLFI	25/03/2008
ZIMBABWE HARARE/Harare	FVHA	FVHAYMYX	FVHAZQZX	FVHAZQZX	FVHA	
RODB/BRDO Dakar DAKAR/Leopold Sedar Senghor		GOOYYZYZ	GOOYYZYZ	GOOYYZYZ		15/04/2009. Fax N° 2009/000119/ ASECNA/DEED/DEETT
RODB/BRDO Pretoria Pretoria		FAPRYMYX	FAPRYMYX	FAPRYMYX		
VAAC Toulouse, France		LFPWYMYX				
TCAC La Réunion, France		FMEEYMYX	FMEEYAYX	FMEEYAYX	FMEE	

APPENDIX I: WMO Headings for Tropical Cyclone and Volcanic Ash Advisory Bulletins (FK And FV)Used by AFITCAC And VAAC

Explanation of Table

Col. 1: Name of the TCAC or VAAC

Col 2: ICAO location indicator used by the TCAC or VAAC

Col 3: WMO heading (TTAAii CCCC) of the FK or FV bulletin

Col 4: Remarks (e.g., Area of coverage of the advisory, or any other bulletin-specific information)

TCAC/VAAC (State)	ICAO location indicator	WMO Heading TTAAii CCCC	Remarks
1	2	3	4
TC Advisories (FK)			
Réunion (France)	FMEE	FKIO20 FMEE	
VA Advisories (FV)			
Toulouse (France)	LFPW	FVXX01LFPW 1st volcano in activity FVXX02LFPW 2ndvolcano in activity, FVXX03LFPW 3rdvolcano in activity FVXX04LFPW 4thvolcano in activity FVXX05LFPW usedfor VAAC TOULOUSE back up byLONDON	

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APPENDIX J - AFI SIGMET Test Procedures

(Amendment 1 – May 2010)

1. Introduction

1.1 The MET Divisional Meeting (2002) formulated recommendation 1/12 b), Implementation of SIGMET requirements, which call, inter alia, for the relevant planning and implementation regional groups (PIRGs) to conduct periodic tests of the issuance and reception of SIGMET messages, especially those for volcanic ash.

1.2 Concerns by the users for the timely reception of SIGMET information has prompted the need to improve awareness on the critical and important nature of SIGMETs. In order to maintain the International Airways Volcano Watch (IAVW) and TC watch systems ready-for-action, regular exercises involving the advisory centres and the MWOs under their areas of responsibility should be performed.

1.3 The requirements for dissemination of SIGMET are specified in Annex 3, Appendix 6, 1.2. Regional guidance on the preparation and dissemination of SIGMET is provided in this Regional SIGMET Guide.

2. Purpose and Scope of SIGMET tests

2.1 The purpose of the tests is to check the awareness of the participating MWOs of the ICAO requirements for the issuance of SIGMET, and the adequacy of the existing telecommunication procedures for dissemination of the advisories and SIGMETs. Based on the results of the tests, the States will be provided with advice aimed at improving their practices and procedures.

2.2 In the case of SIGMET for tropical cyclones and volcanic ash clouds (referred hereafter as WC SIGMET and WV SIGMET respectively) the scope of the tests will involve issuance of test advisories by the VAACs and TCACs in the region, which will be disseminated to the corresponding MWOs and the Regional OPMET Data Banks (RODBs). The MWOs will have to issue a test SIGMET on receipt of a test advisory from the responsible VAAC or TCAC, and disseminate it according to the distribution list used for normal (non-test) SIGMETs.

2.3 The RODBs will record the reception of the test SIGMETs and the corresponding time and will provide a summary table to the VAAC or TCAC with a copy to the Regional Office.

2.4 A consolidated summary report will be prepared by the ICAO Secretariat and reported to the MET/SG and APIRG. The report will include recommendations for improvement of the SIGMET exchange and availability.

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3. SIGMET test procedures

3.1 Procedures for WC and WV SIGMET TEST :

3.1.1 Operational Units:

3.1.1.1 Tropical Cyclone Advisory Centre (TCAC: La Réunion

3.1.1.2 Volcanic Ash Advisory Centre (VAAC): Toulouse

3.1.1.3 Regional OPMET Data Bank (RODB): Dakar, Pretoria

3.1.1.4 Meteorological Watch Office (MWO)

3.1.1.4.1 All MWOs listed in AFI FASID Table MET 3A and MET 3B, under the responsibility of Toulouse, VAAC and La Réunion, TCAC.

Note: The participation of MWOs of States, which do not belong to AFI region, should be coordinated through the relevant ICAO Regional Office.

3.1.2 Test date and time

3.1.2.1 ICAO Regional Office will set a date and time after consultation with the VAAC, TCAC and RODB. The information about the agreed date and time will be sent to all States concernedand copied to the States SIGMET Tests Focal Points.

3.1.3 Test messages

3.1.3.1 Each VAAC or TCAC prepares a simple TEST message in the form of VA or TC advisory. The formats of the said TESTsare given in Attachment 1 to this Appendix.

3.1.3.2 The MWOs, upon receipt of the TEST VA/TC advisory, should prepare a TEST SIGMET for volcanic ash or tropical cyclone, respectively, and send it to the RODBs. The WMO heading and the first line of the SIGMET should be valid ones, while the body of the message should contain an explanatory text on the tests as show in Attachment 1 to this Appendix.

3.1.3.3 The MWOs should issue a WV or WC TEST SIGMET within the 10-minute period following the issuance of VA or TC test message by the corresponding VAAC or TCAC.

3.2 Procedures for WS SIGMET Tests

3.2.1 WS SIGMET advisory Test should be initiated by Pretoria RODB in coordination with ICAO Regional Offices in Dakar and Nairobi. The information about the date and time will be sent to all States concerned and copied to the State's SIGMET Tests Focal Points.

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3.2.2 Operational Units:

- AFI Regional OPMET data Banks: Dakar and Pretoria;
- Meteorological Watch Offices (MWO): All MWOs listed in FASID Table MET 3A and MET 3B of the AFI FASID;
- Toulouse VAAC;
- La Réunion TCAC.

3.3 Common Procedures Applicable to All Types of SIGMET

3.3.1 The AFTN addresses of the RODBs to which the test SIGMETs should be sent are as follows:

Dakar	:	GOOYYZYZ
Pretoria	:	FAPRYMYX

3.3.2 To avoid over-writing of a valid SIGMET, the test SIGMET may not be sent if there is a valid SIGMET for responsible area of the MWO. Such MWOs are strongly encouraged to notify the Regional Office via e-mail of their non-participation in the test due to the said reasons.

3.3.3 Test for different types of SIGMET should preferably be conducted on separate dates.

3.3.4 At least two SIGMET tests per year should be conducted.

3.4 Special procedure to avoid overwriting of a valid SIGMET

3.4.1 It is vital to ensure that TEST SIGMET is not confused with operational SIGMET and avoid overwriting a valid operational SIGMET in an automated system. In order to prevent this it is suggested that:

a) If at the time of the SIGMET test NO SIGMET is current for the FIR, the number of the Test SIGMET should follow the normal numbering sequence; e.g. if the last "normal" SIGMET before the test was number "03",

b) the TEST SIGMET should be number "04", and the first "normal" SIGMET after the test should be number "05".If a SIGMET is VALID at the time of the test then the TEST SIGMET should be issued and the valid SIGMET should be repeated immediately after the TEST SIGMET. E.g., if the following SIGMET is issued at 0100 on the date of the test:

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WSCG31 FCBB 250100
FCCC SIGMET 1 VALID 250100/250500 FCBB-
FCCC BRAZZAVILLE FIR SEV TURB FCST WI ….=

A SIGMET test is scheduled for 0200 UTC on the 25th. The TEST SIGMET is issued with the next consecutive sequence number as follows:

WSCG31 FCBB 250200
FCCC SIGMET 2 VALID 250200/250210 FCBB-
FCCC THIS IS A TEST SIGMET PLEASE DISREGARD=

The original SIGMET is then retransmitted immediately after this with the next consecutive sequence number and the validity period is amended accordingly:

WSCG31 FCBB 250200
FCCC SIGMET 3 VALID 250200/250500 FCBB-
FCCC BRAZZAVILLE FIR SEV TURB FCST WI … =

4. Dissemination of test SIGMETs and Advisories

4.1 All TEST SIGMETs and TC/VA advisories should be sent to the two AFI RODBs. The AFTN addresses to be used by the MWOs, TCACs and VAACs are as follows:

Dakar – GOOYYZ YZ
Pretoria – FAPRYMYX

4.2 SIGMET tests should be terminated within 2 hours of the test start time.

4.3 Coordination with the ATS units

4.3.1 MWOs should inform the associated ATS units of the forthcoming SIGMET tests by a suitable advanced notice.

4.4 Processing of the test messages and results

4.4.1 The RODBs will be requested to file all incoming TEST advisories and SIGMETs and perform an analysis of the availability, timeliness of arrival and the correctness of the headers and meteorological content of all test SIGMETs. A SIGMET TEST Summary Table as shown in Attachment 4 to this Appendix should be prepared by each RODB and sent to the Rapporteur of the AFI OPMET Management Task Force (AFI OPMET MTF), and the contact given below with a copy to the ICAO Dakar and Nairobi Regional Office.

4.4.2 The Rapporteur and SIGMET test contact should prepare the final report of the test and present it to the AFI Regional Offices. A summary report should be submitted to the next AFI OPMET MTF meeting.

4.4.3 The current contact information for sending summary tables is as follows :

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WS SIGMET summary table sent to :

Mr DiemeSaidou
Service Exploitation Météorologique ASECNA – Sénégal
Tél 221 33 869 22 03
Fax 221 33 820 06 00
E-mail : saidoudieme@yahoo.fr

WV/WC SIGMET summary table sent to :

Mrs G.E Khambule
South African Weather Service
Tel 27113909326
Fax 27113209332
Email : gaborekwe.khambule@weathersa.co.za

All Summary Tables and any enquires about SIGMET tests sent to :

ICAO Regional Office, Dakar
E-mail : icaoAFI@dakar.icao.int
Cc : aokossi@dakar.icao.int

And

ICAO Regional Office, Nairobi
Email : icao@icao.union.org
Cc: vitalis.ahago@icao.unon.org

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Attachment 1 to Appendix J

AFI SIGMET TEST PROCEDURES

Format of VA Test advisories and SIGMETs

1. The format of VA and TC advisories are as in ICAO Annex 3:
   - Table A2-1. Template for advisory message for volcanic ash
   - Table A2-2. Template for advisory message for tropical cyclones.

Example of TEST Volcanic Ash Advisory

VA ADVISORY
DTG : YYYYMMDD/hhmm
VAAC: (name of VAAC
VOLCANO : TEST
PSN : UNKNOWN
AREA : (name of VAAC) VAAC AREA
SUMMIT ELEV : UNKNOWN
ADVISORY NR : YYYY/nn (actual number)
INFO SOURCE : NIL
AVIATION COLOUR CODE : NIL
ERUPTION DETAILS : NIL
OBS VA DTG : DD/0150Z
OBS VA DTG : ASH NOT IDENTIFIABLE FROM SATELLITE DATA
FCST VA CLD + 6HR : 01/ 0800 Z SFC/FL600 NO ASH EXP
FCST VA CLD + 12 HR : 01/1400 Z SFC/FL600 NO ASH EXP
FCST VA CLD + 18 HR : 01/2000 Z SFC/FL600 NO ASH EXP
RMK: THIS IS A TEST VA ADVISORY. MWO SHOULD NOW ISSUE A TEST SIGMET FOR VA, UNLESS THERE IS A VALID SIGMET FOR VA.
PLEASE REFER TO THE LETTER FROM ICAO AFI OFFICE DATED xxxxxx.
NXT ADVISORY : NO FURTHER ADVISORIES =

2. Example of Format of TEST Tropical Cyclone ADVISORY

TC ADVISORY

DTG : YYYYMMDD/hhmm
TCAC : (name of TCAC)
TC : TEST
NR : nn (actual number)
PSN : NIL
MOV : NIL
C: NIL
MAX WIND : NIL
FCST PSN + 06HR : NIL
FCST MAX WIND + 6HR : NIL

FCST PSN +12 HR : NIL
FCST MAX WIND +12HR : NIL
FCST PSN +18HR : NIL
FCST MAX WIND +18HR : NIL
FCST PSN + 24 HR : NIL
FCST MAX WIND +24HR : NIL

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RMK : THIS IS A TEST TC ADVISORY. MWO SHOULD NOW ISSUE A TEST SIGMET FOR TC, UNLESS THERE IS VALID SIGMET FOR TC
PLEASE REFER TO THE LETTER FROM ICAO AFI OFFICE DATED XXXXXX
NXT MSG : NIL

3. Example of TEST SIGMET for Volcanic Ash

WVXXii CCCC YYGGgg
CCCC SIGMET n (nn) VALID YYGGgg/ YYGGggCCCC-
THIS IS A TEST SIGMET , PLEASE DISREGARD. TEST VA ADVISORY NUMBER xx

RECEIVED AT YY GGggz =

Example:

WVHK31 VHHH 180205
VHHK SIGMET 01 VALID 180205/180215 VHH-
THIS IS A TEST SIGMET, PLEASE DISREGARD. TEST VA DVISORY NUMBER 01
RECEIVED AT 180200Z =

4. Format of TEST SIGMET for Tropical Cyclone

WCXXii CCCC YYGGgg
CCCC SIGMET n (nn) VALID YYGGgg/YYGGgg CCCC-
THIS IS A TEST SIGMET, PLEASE DISREGARD. TEST VA DVISORY NUMBER xx
RECEIVED AT YYGGggZ=

Example :

WCHK31 VHHH 180205
VHHK SIGMET 01 VALID 180205/180215 VHHH-
THIS IS A TEST SIGMET, PLEASE DISREGARD. TEST TC ADVISORY NUMBER 01
RECEIVED AT 180200Z=

5. Format of TEST SIGMET for other weather phenomena

WSXXii CCCC YYGGgg
CCCC SIGMET n (nn) VALID YYGGgg/YYGGgg CCCC
THIS IS A TEST SIGMET, PLEASE DISREGARD =

Example :
WSHK31 VHH H180200

VHHK SIGMET 04 VALID 180200/ 180210 VHHH-
THIS IS A TEST SIGMET, PLEASE DISREGARD =

Note : 1) " x x " in the WMO heading to be used replaced by the respective WMO geographical designator
2) Actual number to be used in all TEST SIGMETS

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6. AFI Volcanic ash test procedure

Format of the test VAA

a) The format for the TEST VAA that will be provided by the Toulouse VAAC can be seen below. DD is the day of the month, HH the hour of issuance.

FVAF01 LFPW DDHH00
VOLCANIC ASH ADVISORY
ISSUED: 200506DD/HH00Z
VAAC: TOULOUSE
VOLCANO: FICTITIOUS
LOCATION: NIL

AREA : NIL
SUMMIT ELEVATION : NIL
ADVISORY NUMBER : 2005/01
INFORMATION SOURCE: NIL
AVIATION COLOUR CODE: NIL
ERUPTION DETAILS : NIL
OBS ASH DATE/TIME : NIL
OBS ASH CL: NIL FCST
ASH CL+6H:NIL FCST
ASH CL+12H:NIL FCST
ASH CL+18H:NIL
NEXT ADVISORY: NO FURTHER ADVISORIES

REMARKS:

THIS IS A VAA TEST MESSAGE APPLICABLE TO THE WHOLE OF ICAO AFI REGION. EACH METEOROLOGICAL WATCH OFFICE, AREA CONTROL CENTRE AND FLIGHT INFORMATION CENTRE SERVING FLIGHT INFORMATION REGIONS WITHIN THE AFI REGION RECEIVING THIS MESSAGE SHOULD ISSUE AN ADMINISTATIVE MESSAGE USING THE WMO HEADER NOAF33 LFPW AND SEND IT TO THE AFTN ADDRESS LFZZMAFI TO ACKNOWLEDGE THE RECEPTION OF THIS VAA MESSAGE.

b) Template of the SIGMET (without meteorological content = acknowledgement of receipt) to be sent by the MWO/ACC/FIC to both RODBs:

TO: VAAC TOULOUSE, RODB DAKAR, RODB PRETORIA
WVFR31LFPW080200

LFFF SIGMET 1 VALID 080400/081000 LFPW-
LFFF PARIS FIR/UIR TEST TESTTESTTEST
ACK RECEP TEST VAA FROM VAAC TOULOUSE
VOLCANO UNKNOWN AREA ICAO AFI REGION

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INFO SOURCE TEST VOLCAFI
DTG 20071127/0615Z RECEIVED AT 27/0621Z
TEST VA SIGMET PLEASE DISREGARD
TEST TESTTESTTESTTESTTESTTESTTESTTESTTESTTEST TEST=

Note : Parts of the SIGMET message (acknowledgement of receipt) highlighted, must be replaced with information about the Recipients, date, your MWO/ACC/FIC and corresponding FIR.

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Attachment 2 to Appendix J

EXEMPLE OF TCA TEST MESSAGE FORMAT FROM LA REUNION TCAC

KIO20 FMEE 100900
TC ADVISORY
DTG: 20090610/0900Z
TCAC: REUNION
TC: TEST
NR: 01
PSN: NIL
MOV: NIL
C: NIL
MAX WIND: NIL
FCST PSN +06HR: NIL
FCST MAX WIND +06HR: NIL
FCST PSN +12HR: NIL
FCST MAX WIND +12HR: NIL
FCST PSN +18HR: NIL
FCST MAX WIND +18HR: NIL
FCST PSN +24HR: NIL
FCST MAX WIND +24HR: NIL
RMK: THIS IS A TEST TC ADVISORY. MWO SHOULD NOW ISSUE A TEST SIGMET FOR TC, UNLESS THERE IS A VALID SIGMET FOR TC.
NXT MSG: NIL

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Attachment 3 to Appendix J

SIGMET TEST PROCEDURES
- Examples of TEST advisories and SIGMETs -

1. Format of TEST SIGMET for Volcanic Ash

WVXXiiCCCCYYGGgg
CCCC SIGMET n(nn) VALID YYGGgg/YYGGgg CCCC−
THIS IS A TEST SIGMET PLEASE DISREGARD. TEST VA ADVISORY NUMBER XX RECEIVED AT YYGGggZ=

Example:

WVSG31 GOOY 180205
GOOO SIGMET 01 VALID 180205/180215 GOOY-
THIS IS A TEST SIGMET, PLEASE DISREGARD. TEST VA ADVISORY NUMBER 01 RECEIVED AT 180200Z=

2. Exemple of TEST SIGMET for Tropical Cyclone

WCXXiiCCCCYYGGgg
CCCC SIGMET n(nn) VALID YYGGgg/YYGGggCCCC−
THIS IS A TEST SIGMET PLEASE DISREGARD. TEST TC ADVISORY NUMBER XX RECEIVED AT YYGGggZ=

Example:

WCHK31 VHHH 180205
VHHK SIGMET 01 VALID 180205/180215 VHHH-
THIS IS A TEST SIGMET PLEASE DISREGARD. TEST TC ADVISORY NUMBER 01 RECEIVED AT 180200Z=

3. Exemple of TEST SIGMET for other weather phenomena

WSXXiiCCCCYYGGgg
CCCC SIGMET n(nn) VALID YYGGgg/YYGGggCCCC−
THIS IS A TEST SIGMET PLEASE DISREGARD=

Example:

WSCG31 FCBB 180200
FCCC SIGMET 04 VALID 180200/180210 FCBB-
THIS IS A TEST SIGMET PLEASE DISREGARD=

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Attachment 4 to Appendix J

SAMPLE TABLE TO BE USED BY RODBS

AFI SIGMET TEST Summary (Reception time at RODBs)

Name of RODB : Dakar or Pretoria
Date of test : YYYY/MM/DD
Target : VA (Volcanic Ash)

VAA	Header		Received time (UTC)
TTAAii	CCCC	YYGGgg	
FVXX01	LFPW	180200	18:00:27

SIGMET	Header				Received time (UTC)
TTAAii	CCCC	YYGGgg	MWO	FIR/UIR	
WVSG31	GOOY	180235	GOOY	GOOO	18:06:02
WVCD31	FTTJ	180311	FTTJ	FTTT	18:07:58
WVNI31	DNKN	180255	DNKN	DNKK	18:17:55

Name of RODB : Dakar or Pretoria
Date of test : YYYY/MM/DD
Target : TC (Tropical Cyclone)

TCA	Header		Received time (UTC)
TTAAii	CCCC	YYGGgg	
FKIO01	FMEE	180200	18:08:27

SIGMET	Header				Received time (UTC)
TTAAii	CCCC	YYGGgg	MWO	FIR/UIR	
WCMG20	FMMI	180250	FMMI	FMMM	18:02:55
WCTN31	HTDA	180402	HTDA	HTDC	18:03:58
WCZA31	FAJS	180356	FAJS	FAJA	18:03:44
WCBC31	FBSK	180322	FBSK	FBGR	18:03:15