

PROPOSED AMENDMENT TO

ANNEX 3 — METEOROLOGICAL SERVICE FOR INTERNATIONAL AIR NAVIGATION

INITIAL PROPOSAL 1

**INTRODUCTION OF A SPACE WEATHER INFORMATION SERVICE SUPPORTING
INTERNATIONAL AIR NAVIGATION (ANNEX 3)**

PART I. CORE SARPs

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CHAPTER 1. DEFINITIONS

1.1 Definitions

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Space weather centre (SWXC). A centre designated to monitor and provide information on space weather expected to affect communications, GNSS-based navigation and surveillance systems and/or pose a radiation risk to flight crew members and passengers.

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**CHAPTER 3. WORLD AREA FORECAST SYSTEM AND,
METEOROLOGICAL OFFICES AND OTHER CENTRES**

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3.8 Space weather centre (SWXC)

3.8.1 A Contracting State, having accepted the responsibility for providing a SWXC, shall arrange for that centre to provide information on space weather that is expected to affect communications and navigation systems and/or pose a radiation risk to flight crew members and passengers in its area of responsibility by arranging for that centre to:

- a) monitor relevant ground-based, airborne and space-based observations to detect, and predict when possible, the existence and extent of space weather conditions that have an impact in the following areas:
 - 1) high frequency (HF) radio communications;
 - 2) GNSS-based navigation and surveillance; and

- 3) radiation exposure at flight levels;
- b) issue advisory information regarding the extent, severity and duration of the space weather phenomena that have an impact referred to in a);
- c) supply space weather information referred to in b) to:
 - 1) area control centres, flight information centres and aerodrome meteorological offices serving flight information regions in its area of responsibility which may be affected;
 - 2) other SWXCs; and
 - 3) international OPMET databanks, international NOTAM offices and aeronautical fixed service Internet-based services.

3.8.2 SWXC shall maintain a 24-hour watch.

3.8.3 In case of interruption of the operation of a SWXC, its functions shall be carried out by another SWXC or another centre, as designated by the SWXC Provider State concerned.

Note.— Guidance on the provision of space weather information, including the ICAO-designated provider(s) of space weather information, is provided in the Manual on Space Weather in Support of International Air Navigation (Doc #####).

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CHAPTER 9. SERVICE FOR OPERATORS AND FLIGHT CREW MEMBERS

9.1 General provisions

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9.1.3 Meteorological information supplied to operators and flight crew members shall be up to date and include the following information, as agreed between the meteorological authority and the operators concerned:

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- i) meteorological satellite images; ~~and~~
- j) ground-based weather radar information; and
- k) space weather information relevant to the intended route including aerodromes of departure, intended landing and alternate destination.

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9.3 Flight documentation

Note.— The requirements for the use of automated pre-flight information systems in providing flight documentation are given in 9.4.

9.3.1 Flight documentation to be made available shall comprise information listed under 9.1.3 a) 1) and 6), b), c), e), f) and, if appropriate, g) and k). However, flight documentation for flights of two hours' duration or less, after a short stop or turnaround, shall be limited to the information operationally needed, as agreed between the meteorological authority and the operator concerned, but in all cases it shall at least comprise information on 9.1.3 b), c), e), f) and, if appropriate, g) and k).

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PART II. APPENDICES AND ATTACHMENTS

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APPENDIX 2. TECHNICAL SPECIFICATIONS RELATED TO WORLD AREA FORECAST SYSTEM, AND METEOROLOGICAL OFFICES AND OTHER CENTRES

(See Chapter 3 of this Annex)

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6. SPACE WEATHER CENTRES

6.1 Space weather advisory information

6.1.1 Recommendation.— *Advisory information on space weather should be issued in abbreviated plain language, using approved ICAO abbreviations and numerical values of self-explanatory nature, and should be in accordance with the templates shown in Table A2-3. When no approved ICAO abbreviations are available, English plain language text, to be kept to a minimum, shall be used.*

6.1.2 Recommendation.— *Until 5 November 2020, space weather advisory information should be available in IWXXM GML form, in addition to the dissemination of space weather advisory information in abbreviated plain language in accordance with 6.1.1.*

6.1.3 *From 5 November 2020, space weather advisory information shall be disseminated in IWXXM GML form, in addition to the issuance of this advisory information in abbreviated plain language in accordance with 6.1.1.*

Note.— Guidance on IWXXM is provided in the Manual on the ICAO Meteorological Information Exchange Model (IWXXM) (Doc 10003).

6.1.4 Recommendation.— *One or more of the following space weather effects should be included in the space weather advisory information, using their respective abbreviations as indicated below:*

- HF communication (propagation, absorption) **HF COM**

- GNSS-based navigation and surveillance (degradation) **GNSS**

- Radiation at flight levels (increased exposure) **RADIATION**

6.1.5 Recommendation.— *The following intensities should be included in space weather advisory information, using their respective abbreviations as indicated below:*

- moderate **MOD**

- severe **SEV**

6.1.6 Recommendation.— *Updated advisory information should be issued as necessary but at least every six hours.*

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Insert new Table A2-3 as follows:

Table A2-3. Template for advisory message for space weather information

Key: M = inclusion mandatory, part of every message
O = inclusion optional

Note 1.— *The explanations for the abbreviations can be found in the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC, Doc 8400).*

Note 2.— *The spatial resolutions are shown in Attachment E.*

Element	Detailed content	Template(s)	Examples
1	Identification of the type of message (M)	Type of message	SWX ADVISORY
2	TEST or EXERCISE indicator (C)*	Indicator of TEST or EXERCISE	TEST or EXERCISE
3	Time of origin (M)	Year, month, day, time in UTC	DTG: nnnnnnnn/nnnnZ
4	Name of centre (M)	Name of SWXC	SWXC: nnnnnnnnnnn
5	Advisory number (M)	Number with year in full and unique message number	ADVISORY NR: nnnn/[n][n][n]
6	Space weather effect and intensity	Kind of effect and intensity from the space weather event (HF communication, GNSS navigation and surveillance, radiation level exposure environment)	ADVISORY NR: 2016/1
		SWX EFFECT: HF COM MOD or SEV, or GNSS MOD or SEV, or HF COM MOD or SEV AND GNSS MOD or SEV, or RADIATION ¹ MOD or SEV	SWX EFFECT: HF COM MOD GNSS SEV HF COM MOD AND GNSS MOD RADIATION MOD

Element	Detailed content	Template(s)	Examples
7	<p>Observed or expected extent of space weather event (M)</p> <p>Observed (or forecast if event has yet to occur) space weather horizontal extent (latitude bands and longitude in degrees) and/or altitude at time T.</p>	<p>OBS or FCST SWX: nnnnnnnn/nnnnZ</p> <p>DAYLIGHT SIDE</p> <p>and/or</p> <p>HNH and/or MNH and/or EQN and/or EQS and/or MSH and/or HSH</p> <p>Wnnn(nn) or Ennn(nn) – Wnnn(nn) or Ennn(nn)</p> <p>and/or</p> <p>ABV FLnnn or FLnnn–nnn</p> <p>or</p> <p>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]</p> <p>or</p> <p>NO SWX EXP</p>	<p>OBS SWX: FCST SWX: 20161108/0100Z</p> <p>DAYLIGHT SIDE</p> <p>HNH HSH</p> <p>HNH MNH MSH HSH</p> <p>EQN EQS</p> <p>W18000 – W09000</p> <p>ABV FL350</p> <p>S3000 E09000 – S3000 E18000 – S4000 E18000 – S4000 E09000</p> <p>NO SWX EXP</p>
8	<p>Forecast for the next 6 hours (M)</p> <p>Day and time (in UTC) (6 hours from time given in item 6, rounded to the next full hour)</p> <p>Forecast extent and/or altitude for the fixed valid time.</p>	<p>FCST SWX +6 HR: nn/nnnnZ</p> <p>DAYLIGHT SIDE</p> <p>and/or</p> <p>HNH and/or MNH and/or EQN and/or EQS and/or MSH and/or HSH</p> <p>and/or</p> <p>Wnnn(nn) or Ennn(nn) – Wnnn(nn) or Ennn(nn)</p> <p>and/or</p> <p>ABV FLnnn or FLnnn–nnn</p> <p>or</p>	<p>FCST SWX +6 HR: 20161108/0700Z</p> <p>DAYLIGHT SIDE</p> <p>HNH HSH</p> <p>HNH MNH MSH HSH</p> <p>EQN EQS</p> <p>W09000 – W00000</p> <p>ABV FL350</p> <p>S3000 E09000 – S3000 E18000 – S4000 E18000 – S4000 E09000</p> <p>NO SWX EXP</p> <p>NOT AVBL</p>

Element	Detailed content	Template(s)	Examples
		<p>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]</p> <p>or</p> <p>NO SWX EXP</p> <p>or</p> <p>NOT AVBL</p>	
9	<p>Forecast for the next 12 hours (M)</p> <p>Day and time (in UTC) (12 hours from time of onset given in item 6, rounded to the next full hour)</p> <p>Forecast extent and/or altitude for the fixed valid time.</p>	<p>FCST SWX +12 HR:</p> <p>nn/nnnnZ</p> <p>DAYLIGHT SIDE</p> <p>or</p> <p>HNH and/or MNH and/or EQN and/or EQS and/or MSH and/or HSH</p> <p>and/or</p> <p>Wnnn(nn) or Ennn(nn) – Wnnn(nn) or Ennn(nn)</p> <p>and/or</p> <p>ABV FLnnn or FLnnn–nnn</p> <p>or</p> <p>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]</p> <p>or</p> <p>NO SWX EXP</p> <p>or</p> <p>NOT AVBL</p>	<p>FCST SWX +12 HR:</p> <p>20161108/1300Z</p> <p>DAYLIGHT SIDE</p> <p>HNH HSH</p> <p>HNH MNH MSH HSH</p> <p>EQN EQS</p> <p>E00000 – E09000</p> <p>ABV FL350</p> <p>S3000 E09000 – S3000 E18000 – S4000 E18000 – S4000 E09000</p> <p>NO SWX EXP</p> <p>NOT AVBL</p>
10	<p>Forecast for the next 18 hours (M)</p> <p>Day and time (in UTC) (18 hours from time of onset given in item 6, rounded to the next full hour)</p> <p>Forecast extent and/or altitude for the fixed valid time.</p>	<p>FCST SWX +18 HR:</p> <p>nn/nnnnZ</p> <p>DAYLIGHT SIDE</p> <p>or</p> <p>HNH and/or</p>	<p>FCST SWX +18 HR:</p> <p>20161108/1900Z</p> <p>DAYLIGHT SIDE</p> <p>HNH HSH</p> <p>HNH</p>

Element	Detailed content	Template(s)	Examples
		<p>MNH and/or EQN and/or EQS and/or MSH and/or HSH</p> <p>and/or</p> <p>Wnnn(nn) or Ennn(nn) – Wnnn(nn) or Ennn(nn)</p> <p>and/or</p> <p>ABV FLnnn or FLnnn–nnn</p> <p>or</p> <p>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]</p> <p>or</p> <p>NO SWX EXP</p> <p>or</p> <p>NOT AVBL</p>	<p>MNH MSH HSH</p> <p>EQN EQS</p> <p>E09000 – E18000</p> <p>ABV FL350</p> <p>S3000 E09000 – S3000 E18000 – S4000 E18000 – S4000 E09000</p> <p>NO SWX EXP</p> <p>NOT AVBL</p>
11	<p>Forecast for the next 24 hours (M)</p> <p>Day and time (in UTC) (24 hours from time of onset given in item 6, rounded to the next full hour)</p> <p>Forecast extent and/or altitude for the fixed valid time.</p>	<p>FCST SWX +24 HR:</p> <p>nn/nnnnZ</p> <p>DAYLIGHT SIDE</p> <p>or</p> <p>HNH and/or MNH and/or EQN and/or EQS and/or MSH and/or HSH</p> <p>and/or</p> <p>Wnnn(nn) or Ennn(nn) – Wnnn(nn) or Ennn(nn)</p> <p>and/or</p> <p>ABV FLnnn or FLnnn–nnn</p> <p>or</p> <p>Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] – Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] –</p>	<p>FCST SWX +24 HR:</p> <p>20161109/0100Z</p> <p>DAYLIGHT SIDE</p> <p>HNH HSH</p> <p>HNH MNH MSH HSH</p> <p>EQN EQS</p> <p>W18000 – W09000</p> <p>ABV FL350</p> <p>S3000 E09000 – S3000 E18000 – S4000 E18000 – S4000 E09000</p> <p>NO SWX EXP</p> <p>NOT AVBL</p>

Element	Detailed content	Template(s)	Examples
		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 NO SWX EXP or NOT AVBL	
12	Remarks (M)	Remarks, as necessary.	RMK: Free text up to 256 characters. RMK: SWX EVENT HAS CEASED RMK: WWW.SPACEWEATHERPROVIDER.GOV RMK: NIL
13	Next advisory (M)	Year, month, day, time in UTC.	NXT ADVISORY: nnnnnnnn/nnnnZ or Free text up to XX (TBD) characters or NO FURTHER ADVISORIES NXT ADVISORY: 20161108/0700Z. NO FURTHER ADVISORIES

* Use only when the message issued is a TEST or EXERCISE and is not to be used for operational decision-making. When TEST or EXERCISE is indicated, the message may contain information (not to be used operationally) or will otherwise end immediately after the word "TEST".

Example A2-3: Space weather advisory message (GNSS and HF COM effects)

(communication header)	
SWX ADVISORY	
DTG:	20161108/0100Z
SWXC:	(to be determined)
SWX EFFECT:	GNSS MOD AND HF COM MOD
ADVISORY NR:	2016/1
OBS SWX:	20161108/0100Z HNH HSH E18000 – W18000
FCST SWX +6 HR:	20121108/0700Z HNH HSH E18000 – W18000
FCST SWX +12 HR:	20161108/1300Z HNH HSH E18000 – W18000
FCST SWX +18 HR:	20161108/1900Z HNH HSH E18000 – W18000
FCST SWX +24 HR:	20161109/0100Z NO SWX EXP
RMK:	LOW-LEVEL GEOMAGNETIC STORMING IS CAUSING INCREASED AURORAL ACTIVITY AND SUBSEQUENT MOD DEGRADATION OF GNSS ACCURACY AND HF COM AVAILABILITY IN THE AURORAL ZONE. THIS STORMING IS EXPECTED TO SUBSIDE IN THE FORECAST PERIOD. SEE WWW.SPACEWEATHERPROVIDER.WEB
NXT ADVISORY:	NO FURTHER ADVISORIES

Example A2-4: Space weather advisory message (RADIATION effects)

(communication header)	
SWX ADVISORY	
DTG:	20161108/0000Z
SWXC:	(to be determined)
SWX EFFECT:	RADIATION MOD
ADVISORY NR:	2016/2

FCST SWX:	20161108/0100Z HNH HSH E18000 – W18000 ABV FL350
FCST SWX +6 HR:	20121108/0700Z HNH HSH E18000 – W18000 ABV FL350
FCST SWX +12 HR:	20161108/1300Z HNH HSH E18000 – W18000 ABV FL350
FCST SWX +18 HR:	20161108/1900Z HNH HSH E18000 – W18000 ABV FL350
FCST SWX +24 HR:	20161109/0100Z NO SWX EXP
RMK:	RADIATION LEVELS HAVE EXCEEDED 100 PERCENT OF BACKGROUND LEVELS AT FL350 AND ABOVE. THE CURRENT EVENT HAS PEAKED AND LEVELS ARE SLOWLY RETURNING TO BACKGROUND LEVELS. SEE WWW.SPACEWEATHERPROVIDER.WEB
NXT ADVISORY:	NO FURTHER ADVISORIES

Example A2-5: Space weather advisory message (HF COM effects)

(communication header)	
SWX ADVISORY	
DTG:	20161108/0100Z
SWXC:	(to be determined)
SWX EFFECT:	HF COM SEV
ADVISORY NR:	2016/1
OBS SWX:	20161108/0100Z DAYLIGHT SIDE
FCST SWX +6 HR:	20121108/0700Z DAYLIGHT SIDE
FCST SWX +12 HR:	20161108/1300Z DAYLIGHT SIDE
FCST SWX +18 HR:	20161108/1900Z DAYLIGHT SIDE
FCST SWX +24 HR:	20161109/0100Z DAYLIGHT SIDE
RMK:	PERIODIC HF COM ABSORPTION HAS BEEN OBSERVED AND IS LIKELY TO CONTINUE IN THE NEAR TERM. COMPLETE AND PERIODIC LOSS OF HF ON THE SUNLIT SIDE OF THE EARTH EXPECTED. CONTINUED HF COM DEGRADATION LIKELY OVER THE NEXT 7 DAYS. SEE WWW.SPACEWEATHERPROVIDER.WEB
NXT ADVISORY:	20161108/0700Z

End of new Table A2-3.

APPENDIX 8. TECHNICAL SPECIFICATIONS RELATED TO SERVICE FOR OPERATORS AND FLIGHT CREW MEMBERS

(See Chapter 9 of this Annex)

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4. SPECIFICATIONS RELATED TO FLIGHT DOCUMENTATION

4.1 Presentation of information

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4.1.3 METAR and SPECI (including trend forecasts as issued in accordance with regional air navigation agreement), TAF, GAMET, SIGMET, AIRMET and SWX, volcanic ash and tropical cyclone advisory information shall be presented in accordance with the templates in Appendices 1, 2, 3, 5 and 6. Such meteorological information received from other meteorological offices shall be included in flight documentation without change.

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Insert new Attachment E as follows.

ATTACHMENT E. SPATIAL RANGES AND RESOLUTIONS FOR SPACE WEATHER ADVISORY INFORMATION

Note.— The guidance contained in this table relates to Appendix 2, 6.1 Space weather advisory information.

Element		Range	Resolution
Flight Level:		250-600	30
Longitudes for advisories: (degrees)		000 – 180	15
(minutes)		00	0
Latitude bands for advisories:	High latitudes northern hemisphere (HNH)	N9000 - N6000	30
	Middle latitudes northern hemisphere (MNH)	N6000 - N3000	
	Equatorial latitudes northern hemisphere (EQN)	N3000 - N0000	
	Equatorial latitudes southern hemisphere (EQS)	S0000 - S3000	
	Middle latitudes southern hemisphere (MSH)	S3000 - S6000	
	High latitudes southern hemisphere (HSH)	S6000 - S9000	

Note.— One or more latitude ranges should be included in the space weather advisory information for GNSS and RADIATION.

End of new Attachment E.

<i>Origin</i>	Rationale
METP/2	This amendment has been introduced to support the initial implementation of the provision of space weather advisory information to enhance the safety and efficiency of international air navigation consistent with the Global Air Navigation Plan. The provision of this information would include advisories for space weather events affecting, or expected to affect, communications, GNSS-based navigation and surveillance systems, and which could pose a radiation risk to flight crew members and passengers within the next 24 hours.

INITIAL PROPOSAL 2

IMPROVEMENT OF THE PROVISION OF SIGMET INFORMATION BY METEOROLOGICAL WATCH OFFICES (MWOS). (ANNEX 3)

PART I. CORE SARPs

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CHAPTER 3. WORLD AREA FORECAST SYSTEM AND, METEOROLOGICAL OFFICES AND OTHER CENTRES

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3.4 Meteorological watch offices

3.4.1 A Contracting State, having accepted the responsibility for providing air traffic services within a flight information region (FIR) or a control area (CTA), shall establish, in accordance with regional air navigation agreement, one or more MWOs, or arrange for another Contracting State to do so.

Note.— Guidance on the arrangements between Contracting States for the provision of meteorological watch office services can be found in the Manual of Aeronautical Meteorological Practice (Doc 8896).

<i>Origin</i>	Rationale
METP/2	The introduction of this proposal for a Note is needed to point to additional guidance material to be developed to support bilateral and multilateral cooperation and coordination of the issuance of SIGMET information before the introduction of the regional advisory system for select en-route hazardous meteorological conditions.

INITIAL PROPOSAL 3

SIGMET INFORMATION ON THE RELEASE OF RADIOACTIVE MATERIAL INTO THE ATMOSPHERE. (ANNEX 3)

(APPLICABILITY DATE: NOVEMBER 2019)

APPENDIX 6. TECHNICAL SPECIFICATIONS RELATED TO SIGMET AND AIRMET INFORMATION, AERODROME WARNINGS AND WIND SHEAR WARNINGS AND ALERTS

(See Chapter 7 of this Annex.)

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Table A6-1A. Template for SIGMET and AIRMET messages

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<i>Element</i>	<i>Detailed content</i>	<i>SIGMET template</i>	<i>AIRMET template</i>	<i>SIGMET message examples</i>	<i>AIRMET message examples</i>
...
Location (C) ¹⁹	Location (referring to latitude and longitude (in degrees and minutes))	Nnn[nn] Wnnn[nn] or Nnn[nn] Ennn[nn] or Snn[nn] Wnnn[nn] or Snn[nn] Ennn[nn] or N OF Nnn[nn] or S OF Nnn[nn] or N OF Snn[nn] or S OF Snn[nn] [AND] W OF Wnnn[nn] or E OF Wnnn[nn] or W OF Ennn[nn] or E OF Ennn[nn] or N OF Nnn[nn] or N OF Snn[nn] AND S OF Nnn[nn] or S OF Snn[nn] or W OF Wnnn[nn] or W OF Ennn[nn] AND E OF Wnnn[nn] or E OF Ennn[nn] or N OF LINE ²⁰ or NE OF LINE ²⁰ or E OF LINE ²⁰ or SE OF LINE ²⁰ or S OF LINE ²⁰ or SW OF LINE ²⁰ or W OF LINE ²⁰ or NW OF LINE ²⁰ 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 N OF LINE ²⁰ or NE OF LINE ²⁰ or E OF LINE ²⁰ or SE OF LINE ²⁰ or S OF LINE ²⁰ or SW OF LINE ²⁰ or W OF LINE ²⁰ or NW OF LINE ²⁰ 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]]		N2020 W07005 N48 E010 S60 W160 S0530 E16530 N OF N50 S OF N5430 N OF S10 S OF S4530 W OF W155 E OF W45 W OF E15540 E OF E09015 N OF N1515 AND W OF E13530 S OF N45 AND N OF N40 N OF LINE S2520 W11510 – S2520 W12010 SW OF LINE N50 W005 – N60 W020 SW OF LINE N50 W020 – N45 E010 AND NE OF LINE N45 W020 – N40 E010 WI N6030 E02550 – N6055 E02500 – N6050 E02630 – N6030 E02550 APRX 50KM WID LINE BTN N64 W017 – N60 W010 – N57 E010	

Element	Detailed content	SIGMET template	AIRMET template	SIGMET message examples	AIRMET message examples
		<p>or WI^{20, 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]]</p> <p>or APRX nnKM WID LINE²⁰ BTN (or nnNM WID LINE²⁰ 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]]</p> <p>or ENTIRE FIR/[UIR]</p> <p>or ENTIRE CTA</p> <p>or²² WI nnnKM (or nnnNM) OF TC CENTRE</p> <p>or²⁹ WI nnnNM or nnnKM OF Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn]</p>		<p>ENTIRE FIR</p> <p>ENTIRE FIR/UIR</p> <p>ENTIRE CTA</p> <p>WI 400KM OF TC CENTRE WI 250NM OF TC CENTRE</p> <p>WI 30 KM OF N6030 E02550</p>	
...
Forecast position (C) ^{19, 24, 25}	Forecast position of phenomenon at the end of the validity period of the SIGMET message	<p>Nnn[nn] Wnnn[nn] or Nnn[nn] Ennn[nn] or Snn[nn] Wnnn[nn] or Snn[nn] Ennn[nn]</p> <p>or N OF Nnn[nn] or S OF Nnn[nn] or N OF Snn[nn] or S OF Snn[nn] [AND] W OF Wnnn[nn] or E OF Wnnn[nn] or W OF Ennn[nn] or E OF Ennn[nn]</p> <p>or N OF Nnn[nn] or N OF Snn[nn] AND S OF Nnn[nn] or S OF Snn[nn]</p> <p>or W OF Wnnn[nn] or W OF Ennn[nn] AND E OF Wnnn[nn] or E OF Ennn[nn]</p> <p>or N OF LINE²⁰ or NE OF LINE²⁰ or E OF LINE²⁰ or SE OF LINE²⁰ or S OF LINE²⁰ or SW OF LINE²⁰ or W OF LINE²⁰ or NW OF LINE²⁰ Nnn[nn] or</p>	—	<p>N30 W170</p> <p>N OF N30</p> <p>S OF S50 AND W OF E170</p> <p>S OF N46 AND N OF N39</p> <p>NE OF LINE N35 W020 – N45 W040</p> <p>SW OF LINE N48 W020 – N43 E010 AND NE OF LINE N43 W020 – N38 E010</p> <p>WI N20 W090 – N05 W090 – N10 W100 – N20 W100 – N20 W090</p> <p>APRX 50KM WID LINE BTN N64 W017 – N57 W005 – N55 E010 – N55 E030</p> <p>ENTIRE FIR</p> <p>ENTIRE FIR/UIR</p> <p>ENTIRE CTA</p> <p>TC CENTRE PSN N2740 W07345</p>	—

Element	Detailed content	SIGMET template	AIRMET template	SIGMET message examples	AIRMET message examples
		<p>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 N OF LINE²⁰ or NE OF LINE²⁰ or E OF LINE²⁰ or SE OF LINE²⁰ or S OF LINE²⁰ or SW OF LINE²⁰ or W OF LINE²⁰ or NW OF LINE²⁰ 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 Wl^{20, 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]</p> <p>or APRX nnKM WID LINE²⁰ BTN (nnNM WID LINE²⁰ 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]]</p> <p>or ENTIRE FIR[UIR]</p> <p>or ENTIRE CTA</p> <p>or²² TC CENTRE PSN Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn]</p> <p>or²⁶ NO VA EXP</p>		<p>NO VA EXP</p> <p>WI 30 KM OF N6030 E02550</p>	

<i>Element</i>	<i>Detailed content</i>	<i>SIGMET template</i>	<i>AIRMET template</i>	<i>SIGMET message examples</i>	<i>AIRMET message examples</i>
		²⁹ WI nnnNM or nnnKM OF Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn(nn)			
...

Notes.—

...

29. When using SIGMET for RDOACT CLD, when detailed information on the release is not available, a radius of up to 30 km may be applied based on the International Atomic Energy Agency (IAEA) recommendation for surface contamination contained in IAEA Safety Guide GS-G-2.1 - *Arrangements for Preparedness for a Nuclear or Radiological Emergency* (2007); and a vertical extent from surface (SFC) to the upper limit of the flight information region/upper flight information region (FIR/UIR) or control area (CTA) is to be applied.

...

<i>Origin</i>	Rationale
METP/2	This proposed amendment has been introduced to support the standardization of the description of airspace affected by a release of radioactive material into the atmosphere by allowing the production of SIGMETs and AIRMETs in a vertical cylinder and when detailed information on the release is not available by allowing the use of a 30 km radius consistent with recommendations from the International Atomic Energy Agency.

INITIAL PROPOSAL 4

USE OF ‘TEST’ OR ‘EXERCISE’ QUALIFIERS IN TEST MESSAGES FOR VOLCANIC ASH AND TROPICAL CYCLONE ADVISORY AS WELL AS IN SIGMET AND AIRMET INFORMATION. (ANNEX 3)

(APPLICABILITY DATE: NOVEMBER 2019)

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APPENDIX 2. TECHNICAL SPECIFICATIONS RELATED TO WORLD AREA FORECAST SYSTEM, AND METEOROLOGICAL OFFICES AND OTHER CENTRES

(See Chapter 3 of this Annex)

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Table A2-1 Template for Advisory message for volcanic ash

...

<i>Element</i>	<i>Detailed content</i>	<i>Template(s)</i>	<i>Examples</i>
1	Identification of the type of message (M)	Type of message VA ADVISORY	VA ADVISORY
2	TEST or EXERCISE indicator (C)*	Indicator of TEST or EXERCISE TEST or EXERCISE	TEST EXERCISE
23	Time of origin (M)	Year, month, day, time in UTC DTG: nnnnnnnn/hnnnZ	DTG: 20080923/0130Z
34	Name of VAAC (M)	Name of VAAC VAAC: nnnnnnnnnnn	VAAC: TOKYO
45	Name of volcano (M)	Name and IAVCEI ¹ number of volcano VOLCANO: nnnnnnnnnnnnnnnnnnnnn [nnnnnn] or UNKNOWN or UNNAMED	VOLCANO: KARYMSKY 1000-13 VOLCANO: UNNAMED
...

Notes.—

...

* Use only when the message issued is a TEST or EXERCISE and is not to be used for operational decision-making. When TEST or EXERCISE is indicated, the message may contain information (not to be used operationally) or will otherwise end immediately after the word "TEST".

Table A2-2. Template for advisory message for tropical cyclones

Element	Detailed content	Template(s)	Examples
1	Identification of the type of message	TC ADVISORY	TC ADVISORY
2	Indicator of TEST or EXERCISE indicator (C) ¹	TEST or EXERCISE	TEST or EXERCISE indicator (C) ¹
23	Time of origin	DTG: nnnnnnnn/nnnnZ	DTG: 20040925/19600Z
34	Name of TCAC	TCAC: nnnn or nnnnnnnnnn	TCAC: YUFO ² TCAC: MIAMI
45	Name of tropical cyclone	TC: nnnnnnnnnnnn or NN	TC: GLORIA

Notes.—

1. Use only when the message issued is a TEST or EXERCISE and is not to be used for operational decision-making. When TEST or EXERCISE is indicated, the message may contain information (not to be used operationally) or will otherwise end immediately after the word "TEST".
- 1-2. Fictitious location.

...

APPENDIX 6. TECHNICAL SPECIFICATIONS RELATED TO SIGMET AND AIRMET INFORMATION, AERODROME WARNINGS AND WIND SHEAR WARNINGS AND ALERTS

(See Chapter 7 of this Annex.)

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Table A6-1A. Template for SIGMET and AIRMET messages

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Element	Detailed content	SIGMET template	AIRMET template	SIGMET message examples	AIRMET message examples
...
Name of the FIR/CTA (M)	Location indicator and name of the FIR/CTA ⁴ for which the SIGMET/AIRMET is issued	nnnn nnnnnnnnnn FIR/[UIR] or nnnn nnnnnnnnnn CTA	nnnn nnnnnnnnnn FIR/[n]	YUCC AMSWELL FIR ² YUDD SHANLON ² FIR/UIR ² YUDD SHANLON CTA ²	YUCC AMSWELL FIR ² YUDD SHANLON FIR ²
IF THE SIGMET OR AIRMET MESSAGE IS TO BE CANCELLED, SEE DETAILS AT THE END OF THE TEMPLATE.					
TEST or EXERCISE indicator (O) [*]	Indicator of TEST or EXERCISE	TEST or EXERCISE	TEST or EXERCISE	TEST EXERCISE	TEST EXERCISE
Phenomenon (M) ⁵	Description of	OBSC ⁶ TS[GR ⁷]	SFC WIND nnn/nn[n]MPS	OBSC TS	SFC WIND 040/40MPS

<i>Element</i>	<i>Detailed content</i>	<i>SIGMET template</i>	<i>AIRMET template</i>	<i>SIGMET message examples</i>	<i>AIRMET message examples</i>
	phenomenon causing the issuance of SIGMET/AIRMET	EMBD ⁸ TS[GR?] FRO ⁹ TS[GR?] SQL ¹⁰ TS[GR?] TC nnnnnnnnn PSN Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] CB or TC NN ¹¹ PSN Nnn[nn] or Snn[nn] Wnnn[nn] or Ennn[nn] CB 	(or SFC WIND nnn/nn[n]KT) SFC VIS nnnnM (nn) ¹⁵ ISOL ¹⁶ TS[GR?] OCNL ¹⁷ TS[GR?] MT OBSC 	OBSC TSGR EMBD TS EMBD TSGR FRO TS FRO TSGR SQL TS SQL TSGR TC GLORIA PSN N10 W060 CB TC NN PSN S2030 E06030 CB 	SFC WIND 310/20KT SFC VIS 1500M (BR) ISOL TS ISOL TSGR OCNL TS OCNL TSGR MT OBSC
...

Notes.—

...

* Use only when the message issued is a TEST or EXERCISE and is not to be used for operational decision-making. When TEST or EXERCISE is indicated, the message may contain information (not to be used operationally) or will otherwise end immediately after the word "TEST".

<i>Origin</i>	Rationale
METP/2	This proposed amendment has been introduced to support the inclusion of a clear data line in volcanic ash and tropical cyclone advisories and related SIGMETs to denote those that are issued as part of tests or exercises. This change is necessary to clarify for both users and producers when volcanic ash and tropical cyclone advisories are for test or exercise purposes.