Annex IV to ED Decision 2022/004/R

'AMC and GM to Part-MET — Issue 1, Amendment 2'

The text of the amendment is arranged to show deleted, new or amended text as shown below:

— deleted text is ~~struck through~~;

— new or amended text is highlighted in blue;

— an ellipsis '[…]' indicates that the rest of the text is unchanged.

Note to the reader

In amended, and in particular in existing (that is, unchanged) text, 'Agency' *is used interchangeably with* 'EASA'. *The interchangeable use of these two terms is more apparent in the consolidated versions. Therefore, please note that both terms refer to the* 'European Union Aviation Safety Agency (EASA)'.

Annex V to ED Decision 2017/001/R is amended as follows:

GM1 MET.OR.100 Meteorological data and information

GENERAL — TERMS IN PART-MET

Whereas 'provide' is used solely in connection with the provision of MET service, 'issue' is used solely in connection with cases where the obligation specifically extends to sending out (disseminate) the information to a user.

Furthermore, 'supply' is used solely in connection with cases where either 'issue' or 'disseminate' applies.

GM~~1~~2 MET.OR.100 Meteorological data and information

(…)

GM1 MET.OR.110 Meteorological information exchange requirements

GENERAL

Operational meteorological information is disseminated to international OPMET databanks and to~~the~~ centres responsible for the operation of the aeronautical fixed service ~~i~~Internet-based services. ~~as specified in GM1 MET.0R.110~~.

AMC1 MET.OR.200(a)~~(1)~~ Meteorological reports and other information

ROUTINE OBSERVATIONS

Aeronautical ~~M~~meteorological stations should make routine observations throughout the 24 hours of each day or as determined by the competent authority.

GM1 MET.OR.200(a)(2)Meteorological reports and other information

LOCAL SPECIAL REPORTS

Local special reports should be transmitted to local air traffic services units as soon as the specified conditions occur.

By agreement between the aeronautical meteorological station and the appropriate ATS unit, local special reports are not required to be disseminated in respect of:

[…]

~~GM1 MET.OR.200(a)(3) Meteorological reports and other information~~

~~**METAR INTERVALS — NON-SCHEDULED INTERNATIONAL CAT**~~

~~(a) For aerodromes not serving scheduled international commercial air transport operations, an aeronautical meteorological station may disseminate hourly METAR.~~

~~(b) Such dissemination, as well as the criteria to provide SPECI, should be agreed between the competent authority and the meteorological services provider.~~

AMC2 MET.OR.200(a)(3) Meteorological reports and other information

DISSEMINATION OF METAR

METAR, and corrections thereto, should be disseminated to international OPMET databanks and to centres responsible for the operation of aeronautical fixed service Internet-based services.

GM1 MET.OR.200(a)(3) Meteorological reports and other information

DISSEMINATION OF METAR

Procedures for disseminating METAR to users are described in ICAO EUR Doc 018 ‘EUR OPMET DATA MANAGEMENT HANDBOOK’.

AMC1 MET.OR.200(b) Meteorological reports and other information

SPECI

Where required, SPECI should be issued whenever changes when the following criteria are met:

(a) when the mean surface wind direction has changed by 60° or more from that given in the latest report, the mean speed before and/or after the change being 10 kt or more;

(b) when the mean surface wind speed has changed by 10 kt or more from that given in the latest local report;

(c) when the variation from the mean surface wind speed (gusts) has changed by 10 kt or more from that at the time of the latest local report, the mean speed before and/or after the change being 15 kt or more;

(d) when the onset, cessation or change in intensity of any of the following weather phenomena occurs:

(1) freezing precipitation;

(2) moderate or heavy precipitation, including showers thereof; and

(3) thunderstorm, with precipitation;

(e) when the onset or cessation of any of the following weather phenomena occurs:

(1) freezing fog;

(2) thunderstorm, without precipitation;

(f) when the amount of a cloud layer below 1 500 ft (450 m) changes:

(1) from scattered (SCT) or less to broken (BKN) or overcast (OVC); or

(2) from BKN or OVC to SCT or less.

AMC2 MET.OR.200(b) Meteorological reports and other information

DISSEMINATION OF SPECI

SPECI dissemination should be identical to METAR dissemination.

GM1 MET.OR.200(b) Meteorological reports and other information

DISSEMINATION OF SPECI

SPECI representing a deterioration of meteorological conditions should be disseminated immediately after the observation.

SPECI representing a deterioration of one weather element and an improvement in another weather element should also be disseminated immediately after the observation and should then be treated as deterioration reports.

GM2 MET.OR.200(b) Meteorological reports and other information

DISSEMINATION OF SPECI

A SPECI representing an improvement in conditions should be disseminated only after the improvement has been maintained for 10 minutes; it should be amended before dissemination, if necessary, to indicate the conditions prevailing at the end of that 10-minute period.

GM3 MET.OR.200(b) Meteorological reports and other information

DISSEMINATION OF SPECI

Procedures for disseminating SPECI to users are described in ICAO EUR Doc 018 'EUR OPMET DATA MANAGEMENT HANDBOOK'.

AMC1 MET.OR.200(~~c~~d) Meteorological reports and other information

[…]

AMC1 MET.OR.210 Observing meteorological elements

DISPLAY

Where automated equipment forms part of an integrated semi-automatic observing system, displays of data which are made available to the local ATS units should be a subset of and displayed parallel to those available in the aeronautical meteorological stations or aerodrome meteorological offices. In those displays, each meteorological element should be annotated to identify, as appropriate, the locations for which the element is representative.

AMC1 MET.OR.220(a) Aerodrome forecasts

DISSEMINATION OF TAF

TAF, as well as corrections and amendments thereto, should be disseminated to international OPMET databanks and to centres responsible for the operation of aeronautical fixed service Internet-based services.

GM1 MET.OR.220(a) Aerodrome forecasts

DISSEMINATION OF TAF

~~TAF and amendments thereto are disseminated to international OPMET databanks and the centres designated for the operation of the aeronautical fixed service Internet-based services.~~ Guidance on the dissemination of TAF to users is provided in ICAO EUR Doc 018 'EUR OPMET DATA MANAGEMENT HANDBOOK'.

GM1 MET.OR.225(b) Forecasts for landing

TREND FORECAST

A TREND forecast is understood as being a concise statement of the expected significant changes in the meteorological conditions at that aerodrome to be appended to a METAR or SPECI, and if agreed between the aeronautical meteorological station and the appropriate ATS unit, ~~as well~~ in a local routine report and a local special report as well.

AMC1 MET.OR.235(c) Aerodrome warnings and wind shear warnings and alerts

WIND SHEAR FOLLOW-UP

Wind shear alerts should be updated at least every minute. They should be cancelled as soon as the headwind/tailwind change falls below 15 kt ~~(7.5 m/s)~~.

GM1 MET.OR.240(a)~~(1)~~ Information for use by operator or flight crew

[…]

GM1 MET.OR.240(~~a~~b)~~(2~~) Information for use by operator or flight crew

GENERAL

[…]

GM1 MET.OR.240(~~a~~d)~~(4)~~ Information for use by operator or flight crew

SIGMET

[…]

GM1 MET.OR.240(e) Information for use by operator or flight crew

SPACE WEATHER ADVISORY

Space weather advisory information is received from space weather centres (SWXCs) in accordance with ICAO Annex 3 ‘Meteorological Service for International Air Navigation’ and ICAO Doc 10100 ‘Manual on Space Weather Information in Support of International Air Navigation’.

AMC1 MET.OR.245(f)(3) Meteorological watch and other information

AIRCRAFT IN FLIGHT

If the information requested from an aircraft in flight is not available in the associated meteorological watch office, that meteorological watch office should request the assistance of another meteorological watch office or another aerodrome meteorological office in providing it.

AMC2 MET.OR.250(a) SIGMET

DISSEMINATION OF SIGMET

SIGMET, and cancellations thereof, should be disseminated to international OPMET databanks and to centres responsible for the operation of aeronautical fixed service Internet-based services.

GM1 MET.OR.250(a) SIGMET

DISSEMINATION OF SIGMET

Procedures for the dissemination of SIGMET to users are described in ICAO EUR Doc 018 'EUR OPMET DATA MANAGEMENT HANDBOOK'.

~~(a) SIGMET are disseminated to meteorological watch offices and WAFCs and to other meteorological offices. SIGMET for volcanic ash are also disseminated to VAACs.~~

~~(b) SIGMET are disseminated to international OPMET databanks and the centres designated for the operation of the aeronautical fixed service Internet-based services.~~

AMC1 MET.OR.255(a) AIRMET

DISSEMINATION OF AIRMET

AIRMET, and cancellations thereof, should be disseminated to international OPMET databanks and to centres responsible for the operation of aeronautical fixed service Internet-based services.

GM1 MET.OR.255(a) AIRMET

DISSEMINATION OF AIRMET

Procedures for the dissemination of AIRMET to users are described in ICAO EUR Doc 018 'EUR OPMET DATA MANAGEMENT HANDBOOK'.

~~(a) AIRMET are disseminated to meteorological watch offices in adjacent flight information regions and to other meteorological watch offices or aerodrome meteorological offices, as agreed by the competent authorities concerned.~~

~~(b) AIRMET are transmitted to international operational meteorological databanks and the centres for the operation of the aeronautical fixed service Internet-based services.~~

Chapter 4 — Requirements for volcanic ash advisory centres (VAACs)

AMC1 MET.OR.265(a) Volcanic ash advisory centre responsibilities

DISSEMINATION OF VOLCANIC ASH ADVISORY

Volcanic ash advisory information should be disseminated to:

(a) the European aviation crisis coordination cell;

(b) international OPMET databanks and to centres responsible for the operation of aeronautical fixed service Internet-based services.

GM2 MET.OR.265(a) Volcanic ash advisory centre responsibilities

DISSEMINATION OF VOLCANIC ASH ADVISORY

Procedures for the dissemination of volcanic ash advisory information to users are described in ICAO EUR Doc 018 'EUR OPMET DATA MANAGEMENT HANDBOOK'.

Chapter 5 — Requirements for tropical cyclone advisory centres (TCACs)

AMC1 MET.OR.270(a) Tropical cyclone advisory centre responsibilities

DISSEMINATION OF TROPICAL CYCLONE ADVISORY

Tropical cyclone advisory information should be disseminated to international OPMET databanks and to centres responsible for the operation of aeronautical fixed service Internet-based services.

GM1 MET.OR.270(a) Tropical cyclone advisory centre responsibilities

DISSEMINATION OF TROPICAL CYCLONE ADVISORY

Procedures for the dissemination of tropical cyclone advisory information to users are described in ICAO EUR Doc 018 'EUR OPMET DATA MANAGEMENT HANDBOOK'.

Chapter 6 — Requirements for world area forecast centres (WAFCs)

AMC1 MET.OR.275(a) World area forecast centre responsibilities

DISSEMINATION OF WORLD AREA FORECAST CENTRE (WAFC) GRIDDED GLOBAL FORECASTS AND FORECASTS OF SIGNIFICANT WEATHER (SIGWX)

World area forecast centre (WAFC) gridded global forecasts and forecasts of significant weather (SIGWX) should be disseminated to:

(a) other WAFCs;

(b) centres responsible for the operation of aeronautical fixed service Internet-based services.

AMC1 MET.TR.115(a) Meteorological bulletins

DATA TYPES AND CODE FORMS FOR METEOROLOGICAL INFORMATION

The data types and code forms applicable to specified meteorological information should be as follows:

(a) ICAO Meteorological Information Exchange Model (IWXXM) GML form;

(b) alphanumeric code form;

(c) abbreviated plain language form;

(d) 'gridded binary' (GRIB) code form;

(e) 'binary universal form for the representation of meteorological data' (BUFR) code form;

(f) portable network graphics (PNG) form.

GM1 MET.TR.115(a) Meteorological bulletins

~~ALPHANUMERICAL FORMAT~~ DATA TYPES AND CODE FORMS FOR METEOROLOGICAL INFORMATION

~~The format of the meteorological bulletins is understood to be that in alphanumerical format.~~

The specifications for data types and code forms for meteorological information should be as follows:

— IWXXM GML form;

— IWXXM context (class) diagrams with identified features, types and allowed enumerations are published in the WMO Manual on Codes (WMO-No. 306) Volume I.3, Part D 'Representations derived from data models';

— Guidance on the implementation of IWXXM is provided in ICAO Doc 10003 'Manual on the ICAO Meteorological Information Exchange Model (IWXXM)';

— Guidance on the implementation and exchange of IWXXM in the EUR Region is provided in ICAO EUR Doc 033 'Guidelines for the Implementation of OPMET Data Exchange using IWXXM in the EUR Region';

— Alphanumeric code form as specified in the WMO Manual on Codes (WMO-No. 306), Volume I.1, Part A 'Alphanumeric Codes';

— Abbreviated plain language form as prescribed in the AMC (AMC1 MET.TR.115(a), AMC1 MET.TR.200(a), AMC1 MET.TR.200(a)(12), AMC3 MET.TR.215(a), AMC1 MET.TR.235(a), AMC1 MET.TR.235(c), AMC2 MET.TR.250(a), AMC1 MET.TR.255(a), AMC1 MET.TR.265, AMC1 MET.TR.270) describing the meteorological information being provided;

— 'Gridded binary' (GRIB) code form as specified in the WMO Manual on Codes (WMO-No. 306), Volume I.2, Part B 'Binary Codes';

— 'Binary universal form for the representation of meteorological data' (BUFR) code form as specified in the WMO Manual on Codes (WMO-No. 306), Volume I.2, Part B 'Binary Codes';

— portable network graphics (PNG) form.

GM3 MET.TR.115(a) Meteorological bulletins

HEADING

Detailed specifications on format and contents of the heading are given in the WMO Publication No 386, 'Manual on the Global Telecommunication System', Volume I, and in ~~the~~ ICAO Doc 8896 'ICAO Manual of Aeronautical Meteorological Practice'~~(ICAO Doc 8896)~~.

~~GM1 MET.TR.115(a)(2) Meteorological bulletins~~

~~**LOCATION INDICATOR**~~

~~ICAO location indicators are listed in ICAO Doc 7910 - Location Indicators.~~

AMC1 MET.TR.200(a) Meteorological reports and other information

TEMPLATE FOR LOCAL ROUTINE REPORT AND LOCAL SPECIAL REPORT

Local routine reports and local special reports should be issued in abbreviated plain language, in accordance with the template below.

Template for local routine report (MET REPORT) and local special report (SPECIAL)

Key:

M = inclusion mandatory;

C = inclusion conditional, dependent on meteorological conditions;

O = inclusion optional.

Note 1: The ranges and resolutions for the numerical elements included in local routine reports and local special reports are provided in GM1 MET.TR.200(a).

Note 2: The numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the report.

Ref.	*Element*	*Detailed content*	*Template(s)*		
1	Identification of the type of report (M)	Type of report	MET REPORT *or* SPECIAL		
2	Location indicator (M)	ICAO location indicator (M)	nnnn		
3	Time of the observation (M)	Day and actual time of the observation in UTC	nnnnnnZ		
4	Identification of an automated report (C)	Automated report identifier (C)	AUTO		
5	Surface wind (M)	Name of the element (M)	WIND		
		Runway (O)	RWY nn[L] *or* RWY nn[C] *or* RWY nn[R]		
		Runway section (O)	TDZ		
		Wind direction (M)	nnn/	VRB BTN nnn/ AND nnn/ *or* VRB	CALM
		Wind speed (M)	[ABV]n[n]KT		
		Significant speed variations (C)	MAX[ABV]nn[n] MNMn[n]		
		Significant directional variations (C)	VRB BTN nnn/ AND nnn/	—	
		Runway section (O)	MID		
		Wind direction (O)	nnn/	VRB BTN nnn/ AND nnn/ *or* VRB	CALM
		Wind speed (O)	[ABV]n[n]KT		
		Significant speed variations (C)	MAX[ABV]nn[n] MNMn[n]		
		Significant directional variations (C)	VRB BTN nnn/ AND nnn/	—	
		Runway section (O)	END		

		Wind direction (O)	nnn/	VRB BTN nnn/ AND nnn/ *or* VRB	CALM
		Wind speed (O)	[ABV]n[n]KT		
		Significant speed variations (C)	MAX[ABV]nn[n] MNMn[n]		
		Significant directional variations (C)	VRB BTN nnn/ AND nnn/	—	
6	Visibility (M)	Name of the element (M)	VIS		CAVOK
		Runway (O)	RWY nn[L] *or* RWY nn[C] *or* RWY nn[R]		
		Runway section (O)	TDZ		
		Visibility (M)	n[n][n][n]M *or* n[n]KM		
		Runway section (O)	MID		
		Visibility (O)	n[n][n][n]M *or* n[n]KM		
		Runway section (O)	END		
		Visibility (O)	n[n][n][n]M *or* n[n]KM		
7	Runway visual range (C) (1)	Name of the element (M)	RVR		
		Runway (C)	RWY nn[L] *or* RWY nn[C] *or* RWY nn[R]		
		Runway section (C)	TDZ		
		Runway visual range (M)	[ABV *or* BLW] nn[n][n]M		
		Runway section (C)	MID		
		Runway visual range (C)	[ABV *or* BLW] nn[n][n]M		
		Runway section (C)	END		
		Runway visual range (C)	[ABV *or* BLW] nn[n][n]M		
8	Present weather (C)	Intensity of present weather (C)	FBL *or* MOD *or* HVY	—	
		Characteristics and type of present weather (C)	DZ *or* RA *or* SN *or* SG *or* PL *or* DS *or* SS *or* FZDZ *or* FZUP (2) *or* FC *or* FZRA *or* SHGR *or* SHGS *or* SHRA *or* SHSN *or* SHUP (2) *or* TSGR *or* TSGS *or* TSRA *or* TSSN *or* TSUP (2) *or* UP (2)	FG *or* BR *or* SA *or* DU *or* HZ *or* FU *or* VA *or* SQ *or* PO *or* TS *or* BCFG *or* BLDU *or* BLSA *or* BLSN *or* DRDU *or* DRSA *or* DRSN *or* FZFG *or* MIFG *or* PRFG *or* // (2)	
9	Cloud (M)	Name of the element (M)	CLD		
		Runway (O)	RWY nn[L] *or* RWY nn[C] *or* RWY nn[R]		
		Cloud amount (M) *or* vertical visibility (O)	FEW *or* SCT *or* BKN *or* OVC *or* /// (2)	OBSC	NSC *or* NCD (2)
		Cloud type (C)	CB *or* TCU *or* /// (2)	—	
		Height of cloud base *or* the value of vertical visibility (C)	n[n][n][n][n]FT *or* ///FT (2)	VER VIS n[n][n][n]FT *or* VER VIS ///FT (2)	
10	Air temperature (M)	Name of the element (M)	T		
		Air temperature (M)	[MS]nn		
11	Dew-point	Name of the element (M)	DP		

	temperature (M)	Dew-point temperature (M)	[MS]nn				
12	Pressure values (M)	Name of the element (M)	QNH				
		QNH (M)	nnnnHPA				
		Name of the element (O)	QFE				
		QFE (O)	[RWY nn[L] *or* RWY nn[C] *or* RWY nn[R]] nnnnHPA [RWY nn[L] *or* RWY nn[C] *or* RWY nn[R] nnnnHPA]				
13	Supplementary information (C)	Significant meteorological phenomena (C)	CB *or* TS *or* MOD TURB *or* SEV TURB *or* WS *or* GR *or* SEV SQL *or* MOD ICE *or* SEV ICE *or* FZDZ *or* FZRA *or* SEV MTW *or* SS *or* DS *or* BLSN *or* FC				
		Location of the phenomena (C)	IN APCH [n[n][n][n]FT-WIND nnn/n[n]KT] *or* IN CLIMB-OUT [n[n][n][n]FT-WIND nnn/n[n]KT] *or* RWY nn[L] *or* RWY nn[C] *or* RWY nn[R]				
		Recent weather (C)	REFZDZ *or* REFZRA *or* REDZ *or* RE[SH]RA *or* RERASN *or* RE[SH]SN *or* RESG *or* RESHGR *or* RESHGS *or* REBLSN *or* RESS *or* REDS *or* RETSRA *or* RETSSN *or* RETSGR *or* RETSGS *or* REFC *or* REPL or REUP ([2]) *or* REFZUP ([2]) *or* RETSUP ([2]) *or* RESHUP ([2]) *or* REVA *or* RETS				
14	Trend forecast (O)	Name of the element (M)	TREND				
		Change indicator (M)	NOSIG	BECMG *or* TEMPO			
		Period of change (C)		FMnnnn *and/or* TLnnnn *or* ATnnnn			
		Wind (C)		nnn/[ABV]n[n]KT [MAX[ABV]nn]]			
		Visibility (C)		VIS n[n][n][n]M *or* VIS n[n]KM			CAVOK
		Weather phenomenon: intensity (C)		FBL *or* MOD *or* HVY	—	NSW	
		Weather phenomenon: characteristics and type (C)		DZ *or* RA *or* SN *or* SG *or* PL *or* DS *or* SS *or* FZDZ *or* FZRA *or* SHGR *or* SHGS *or* SHRA *or* SHSN *or* TSGR *or* TSGS *or* TSRA *or* TSSN	FG *or* BR *or* SA *or* DU *or* HZ *or* FU *or* VA *or* SQ *Or* PO *or* FC *or* TS *or* BCFG *or* BLDU *or* BLSA *or* BLSN *or* DRDU *or* DRSA *or* DRSN *or* FZFG *or* MIFG *or* PRFG	
		Name of the element (C)		CLD			
		Cloud amount and vertical visibility (C)		FEW *or* SCT *or* BKN *or* OVC	OBSC	NSC	
		Cloud type (C)		CB *or* TCU	—		
		Height of cloud base *or* the value of vertical visibility (C)		n[n][n][n][n]FT	VER VIS n[n][n][n]FT		

1. To be included if the visibility or the runway visual range is < 1 500 m.
2. For automated reports only.

GM1 MET.TR.200(a) Meteorological reports and other information

RANGES AND RESOLUTIONS — LOCAL ROUTINE REPORT AND LOCAL SPECIAL REPORT

(a) The ranges and resolutions for the numerical elements included in local routine reports and local special reports are shown below.

Ranges and resolutions for the numerical elements included in local routine reports and local special reports
Note: **The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the template.**

Ref.	*Elements included in the local routine report and the local special report*		*Range*	*Resolution*
1	Runway:	(no units)	01–36	1
2	Wind direction:	° true	010–360	10
3	Wind speed:	KT	1–99 P99	1 N/A (100 and greater)
4	Visibility:	M M KM KM	0–750 800–4 900 5–9 10 or greater	50 100 1 0 (fixed value: 10 KM)
5	Runway visual range:	M M M	0–375 400–750 800–2000	25 50 100
6	Vertical visibility:	FT FT	0–250 ([1]) 300–2 000	50 100
7	Clouds: height of cloud base:	FT FT FT	0–250 ([1]) 300–9 900 10 000–20 000	50 100 1 000
8	Air temperature; Dew-point temperature:	°C	– 80 to + 60	1
9	QNH; QFE:	hPa	0500–1 100	1

([1]) Under certain circumstances, as specified in AMC1 MET.TR.205(e)(3); otherwise, a resolution of 100 ft is to be used.

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

~~(a) The ranges and resolutions for the numerical elements included in the local routine report and local special report are shown below.~~

~~**Ranges and resolutions for the numerical elements included in local routine report and local special report**~~

~~**Element elements included in the local routine report and local special report**~~		~~**Range**~~	~~**Resolution**~~
~~Runway:~~	~~(no units)~~	~~01–36~~	~~1~~
~~Wind direction:~~	~~°true~~	~~010–360~~	~~10~~

Ranges and resolutions for the numerical elements included in local routine report and local special report		
Element elements included in the local routine report and local special report	Range	Resolution
Wind speed: MPS	1–99*	1
KT	1–199*	1
Visibility: M	0–750	50
M	800–4 900	100
KM	5–9	1
KM	10–	0 (fixed value: 10 KM)
Runway visual range: M	0–375	25
M	400–750	50
M	800–2 000	100
Vertical visibility: M	0–75**	15
M	90–600	30
FT	0–250**	50
FT	300–2 000	100
Clouds: height of cloud base: M	0–75**	15
M	90–2 970	30
FT	0–250**	50
FT	300–9 900	100
FT	10 000-20 000	1 000
Air temperature; °C	–80 – +60	1
Dew-point temperature:		
QNH; QFE: hPa	0500–1 100	1

* There is no aeronautical requirement to report surface wind speeds of 100 kt (50 m/s) or more; however, provision has been made for reporting wind speeds up to 199 kt (99 m/s) for non-aeronautical purposes, as necessary.
** Under circumstances as specified in AMC1 MET.TR.205(e)(13); otherwise a resolution of 100 ft (30 m) is to be used.

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

GM2 MET.TR.200(a) Meteorological reports and other information

LOCAL ROUTINE REPORT AND LOCAL SPECIAL REPORT — EXAMPLES OF ELEMENTS

Non-exhaustive examples of the different elements used in the formulation of local routine reports and local special reports are provided below.

Local routine report and local special report — Examples of elements

Note 1: Consult the 'local routine report' and the 'local special report' template in AMC1 MET.TR.200(a) to identify the mandatory (M), the conditional (C) or the optional (O) elements.

Note 2: The ranges and resolutions for the numerical elements included in local routine reports and local special reports are provided in GM1 MET.TR.200(a).

Note 3: The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the report. They do not correlate with the 'Ref.' column in AMC1 MET.TR.200(a). Refer to the 'Element' column when cross-referencing.

Ref.	*Element*	*Examples*
1	Identification of the type of report	MET REPORT SPECIAL
2	Location indicator	YUDO
3	Time of the observation	221630Z
4	Identification of an automated report	AUTO
5	Surface wind	WIND 240/8KT WIND RWY 18 TDZ 190/12KT WIND VRB2KT WIND CALM WIND VRB BTN 350/ AND 050/2KT WIND 270/ABV99KT WIND 120/6KT MAX18 MNM4 WIND 020/10KT VRB BTN 350/ AND 070/ WIND RWY 14R MID 140/12KT WIND RWY 27 TDZ 240/16KT MAX28 MNM10 END 250/14KT
6	Visibility	VIS 350M CAVOK VIS 7KM VIS 10KM VIS RWY 09 TDZ 800M END 1200M VIS RWY 18C TDZ 6KM RWY 27 TDZ 4000M
7	Runway visual range	RVR RWY 32 400M RVR RWY 20 1600M RVR RWY 10L BLW 50M RVR RWY 14 ABV 2000M RVR RWY 12 TDZ 1100M MID ABV 2000M RVR RWY 16 TDZ 600M MID 500M END 400M RVR RWY 26 500M RWY 20 800M

8	Present weather	MOD RA HVY TSRA HVY DZ FBL SN HZ FG VA MIFG HVY TSRASN FBL SNRA FBL DZ FG HVY SHSN BLSN HVY TSUP //
9	Cloud	CLD NSC CLD SCT 1000FT OVC 2000FT CLD OBSC VER VIS 500FT CLD BKN TCU 900FT CLD RWY 08R BKN 200FT RWY 26 BKN 300FT CLD /// CB ///FT CLD /// CB 1200FT CLD NCD
10	Air temperature	T17 TMS08
11	Dew-point temperature	DP15 DPMS18
12	Pressure values	QNH 0995HPA QNH 1009HPA QNH 1022HPA QFE 1001HPA QNH 0987HPA QFE RWY 18 0956HPA RWY 24 0955HPA
13	Supplementary information	FC IN APCH WS IN APCH 180FT-WIND 360/26KT WS RWY 12 REFZRA CB IN CLIMB-OUT RETSRA
14	Trend forecast	TREND NOSIG TREND BECMG FEW 2000FT TREND TEMPO 250/36KT MAX50 TREND BECMG AT1800 VIS 10KM NSW TREND BECMG TL1700 VIS 800M FG TREND BECMG FM1030 TL1130 CAVOK TREND TEMPO TL1200 VIS 600M BECMG AT1230 VIS 8KM NSW CLD NSC TREND TEMPO FM0300 TL0430 MOD FZRA TREND BECMG FM1900 VIS 500M HVY SNRA TREND BECMG FM1100 MOD SN TEMPO FM1130 BLSN TREND BECMG AT1130 CLD OVC 1000FT TREND TEMPO TL1530 HVY SHRA CLD BKN CB 1200FT

GM1 MET.TR.200(a)(2) Meteorological reports and other information

LOCATION INDICATORS

The location indicators and their significations are published in ICAO Doc 7910 ~~—~~ 'Location Indicators'.

AMC1 MET.TR.200(a)(4) Meteorological reports and other information

AUTOMATED REPORTING

Local routine report, ~~and~~ local special report, ~~and~~ METAR and SPECI from automatic observing systems should be identified with the word 'AUTO'.

GM1 MET.TR.200(a)(4) Meteorological reports and other information

AUTOMATED REPORTING

~~METAR, l~~Local routine report, ~~and~~ local special report, METAR and SPECI from automatic observing systems may be used as agreed between the aeronautical meteorological stations and the users.

AMC1 MET.TR.200(a)(12) Meteorological reports and other information

SUPPLEMENTARY INFORMATION — SEMI-AUTOMATIC OBSERVING SYSTEM

(a) In local routine report, ~~and~~ local special report, ~~and in~~ METAR and SPECI, when reported by a semi-automatic observing system, the following recent weather phenomena should be reported, up to a maximum of three groups, in the supplementary information:

[…]

AMC2 MET.TR.200(a)(12) Meteorological reports and other information

SUPPLEMENTARY INFORMATION — AUTOMATIC OBSERVING SYSTEM

In local routine report, ~~and~~ local special report, ~~and in~~ METAR and SPECI, when reported by an automatic observing system, the following recent weather phenomena should be reported, up to a maximum of three groups, in the supplementary information:

[…]

AMC3 MET.TR.200(a)(12) Meteorological reports and other information

SUPPLEMENTARY INFORMATION — WIND SHEAR

Information on wind shear should be included as supplementary information in local routine report, ~~and~~ local special report, ~~and in~~ METAR and SPECI, where local circumstances so warrant.

AMC4 MET.TR.200(a)(12) Meteorological reports and other information

SUPPLEMENTARY INFORMATION — SEA-SURFACE TEMPERATURE AND STATE OF THE SEA

In METAR and SPECI, information on sea-surface temperature and the state of the sea or the significant wave height, from aeronautical meteorological stations established on offshore structures in support of helicopter operations, should be included in the supplementary information.

GM1 ~~to AMC1~~ MET.TR.200(a)(12) Meteorological reports and other information

SUPPLEMENTARY INFORMATION — RECENT WEATHER PHENOMENA

'Recent weather phenomena' is understood as being the weather phenomena observed at the aerodrome during the period since the last issued routine report or last hour, whichever is the shorter, but not at the time of observation.

GM~~1~~2 ~~to AMC3~~ MET.TR.200(a)(12) Meteorological reports and other information

SUPPLEMENTARY INFORMATION — LOCAL CIRCUMSTANCES

Local circumstances include but are not necessarily limited to wind shear of non-transitory nature such as might be associated with low-level temperature inversions or local topography.

GM3 MET.TR.200(a)(12) Meteorological reports and other information

SUPPLEMENTARY INFORMATION — WIND SHEAR

The inclusion of wind shear in the supplementary information is understood to be addressed, as a minimum, in local routine report, local special report, METAR and SPECI when reported by a semi-automatic observing system.

GM1 MET.TR.200(b) & (c) Meteorological reports and other information

EXAMPLE OF METAR AND LOCAL ROUTINE REPORT

(a) Local routine report (same location and weather conditions as METAR):

MET REPORT YUDO 221630Z WIND 240/4KT VIS 600M RVR RWY 12 TDZ 1000M MOD DZ FG CLD SCT 1000FT OVC 2000FT T17 DP16 QNH 1018HPA TREND BECMG TL1700 VIS 800M FG BECMG AT1800 VIS 10KM NSW

(b) METAR for YUDO (Donlon/International)*:

METAR YUDO 221630Z 24004KT 0600 R12/1000U DZ FG SCT010 OVC020 17/16 Q1018 BECMG TL1700 0800 FG BECMG AT-1800 9999 NSW

Meaning of both reports:

Routine report for Donlon/International* issued on the 22nd~~nd~~ of the month at 16.30 UTC; surface wind direction 240 degrees; wind speed 4 knots; visibility (along the runway(s) in the local routine report; prevailing visibility in METAR) 600 metres; runway visual range representative of the touchdown zone for runway 12 is 1 000 metres and the runway visual range values have shown an upward tendency during previous 10 minutes (~~R~~runway visual range tendency to be included in METAR only); and moderate drizzle and fog; scattered cloud at 1 000 feet; overcast at 2 000 feet; air temperature 17 degrees Celsius; dew-point temperature 16 degrees Celsius; QNH 1 018 hectopascals; TREND during next 2 hours; visibility (along the runway(s) in the local routine report; prevailing visibility in METAR) becoming 800 metres in fog by 17.00 UTC; at 18.00 UTC visibility (along the runway(s) in the local routine report; prevailing visibility in METAR) becoming 10 kilometres or more and nil significant weather.

** Fictitious location*

GM1 MET.TR.200(b) Meteorological reports and other information

EXAMPLE OF SPECI AND LOCAL SPECIAL REPORT

(a) Local special report (same location and weather conditions as SPECI):

SPECIAL YUDO 151115Z WIND 050/25KT MAX37 MNM10 VIS 1200M RVR RWY 05 ABV 1800M HVY TSRA CLD BKN CB 500FT T25 DP22 QNH 1008HPA TREND TEMPO TL1200 VIS 600M BECMG AT1200 VIS 8KM NSW NSC

(b) SPECI for YUDO (Donlon/International)*:

SPECI YUDO 151115Z 05025G37KT 3000 1200NE+TSRA BKN005CB 25/22 Q1008 TEMPO TL1200 0600 BECMG AT1200 8000 NSW NSC

Meaning of both reports:

Special report for Donlon/International* issued on the 15th of the month at 11.15 UTC; surface wind direction 050 degrees; wind speed 25 knots gusting between 10 and 37 knots (minimum wind speed not to be included in SPECI); visibility 1 200 metres (along the runway(s) in the local special report); prevailing visibility 3 000 metres (in SPECI) with minimum visibility 1 200 metres to north east (directional variations to be included in SPECI only); runway visual range above 1 800 metres ~~at the treshold~~ on runway 05 (runway visual range not required in SPECI with prevailing visibility of 3 000 metres); thunderstorm with heavy rain; broken cumulonimbus cloud at 500 feet; air temperature 25 degrees Celsius; dew-point temperature 22 degrees Celsius; QNH 1 008 hectopascals; trend during next 2 hours, visibility (along the runway(s) in the local special report; prevailing visibility in SPECI) temporarily 600 metres from 11.15 to 12.00, becoming at 12.00 UTC visibility (along the runway(s) in the local special report; prevailing visibility in SPECI) 8 kilometres, thunderstorm ceases and nil significant weather and nil significant cloud.

** Fictitious location*

AMC1 MET.TR.200(c) Meteorological reports and other information

METAR AND SPECI — CODE FORM

METAR and SPECI, and corrections thereto, should be encoded using:

(a) the IWXXM GML form as specified in point (a) of AMC1 MET.TR.115(a); and

(b) the alphanumeric code form for METAR as specified in point (b) of AMC1 MET.TR.115(a).

~~GM1 MET.TR.200(c)(1) Meteorological reports and other information~~

~~**METAR — CODE FORM**~~

~~The METAR code form is contained in the WMO Publication No 306, Manual on Codes, Volume I.1, Part A — Alphanumeric Codes.~~

~~GM1 MET.TR.200(c)(2) Meteorological reports and other information~~

~~**METAR — DIGITAL FORM**~~

~~(a) When METAR is disseminated in a digital form, this is in addition to the METAR code form.~~

~~(b) Guidance on the information exchange model, GML, and the metadata profile is provided in the Manual on the Digital Exchange of Aeronautical Meteorological Information (ICAO Doc 10003).~~

GM1 MET.TR.200(f) Meteorological reports and other information

ISSUANCE OF LOCAL SPECIAL REPORTS AND SPECI

Point (f) ~~in~~ of MET.TR.200 relates to the list of criteria to provide local special reports and SPECI when a meteorological change occurs. The agreement between the meteorological service provider and the competent authority is introduced as these criteria are usually agreed with the competent authority. Also, in introducing this agreement, the nature of the transposed provision (Appendix 3, 2.3.3 Recommendation) of ICAO Annex 3 remains.

AMC1 MET.TR.200(f)(8) Meteorological reports and other information

ISSUANCE OF SPECI

Other criteria based on local aerodrome operating minima are to be considered in accordance with point (j) of AMC1 MET.TR.220(f).

AMC1 MET.TR.205(b)(1) Reporting of meteorological elements

VISIBILITY

In METAR and SPECI, visibility should be reported as prevailing visibility. When the visibility is not the same in different directions and:

[…]

AMC1 MET.TR.205(b)(3) Reporting of meteorological elements

VISIBILITY — VALUES

In local routine report~~s~~ and local special report~~s~~, when instrumented systems are used for the measurement of visibility:

[…]

AMC1 MET.TR.205(c) Reporting of meteorological elements

RUNWAY VISUAL RANGE (RVR) — TOUCHDOWN ZONE VALUES

In METAR and SPECI:

[…]

AMC1 MET.TR.205(c)(1) Reporting of meteorological elements

RUNWAY VISUAL RANGE (RVR) — THRESHOLD LIMITS

(a) 50 m should be considered the lower limit, and 2 000 m the upper limit for RVR.

(b) ~~Outside of~~Beyond these limits, local routine report~~s~~, ~~and~~ local special report~~s~~, ~~and~~ METAR and SPECI should merely indicate that the RVR is less than 50 or more than 2 000 m.

AMC1 MET.TR.205(c)(3) Reporting of meteorological elements

RUNWAY VISUAL RANGE (RVR) — VALUES FOR METAR AND SPECI

[…]

AMC1 MET.TR.205(d) Reporting of meteorological elements

PRESENT WEATHER PHENOMENA — AUTOMATIC OBSERVING SYSTEM

In local routine report, ~~and~~ local special report, ~~and~~ METAR and SPECI reported by an automatic observing system, the following types of present weather phenomena should be reported, using their respective abbreviations and relevant criteria, as appropriate:

[…]

AMC2 MET.TR.205(d) Reporting of meteorological elements

PRESENT WEATHER PHENOMENA — SEMI-AUTOMATIC OBSERVING SYSTEM

In local routine report, ~~and~~ local special report, ~~and~~ METAR and SPECI reported by a semi-automatic observing system, the following types of present weather phenomena should be reported, using their respective abbreviations and relevant criteria, as appropriate:

[…]

AMC3 MET.TR.205(d) Reporting of meteorological elements

PRESENT WEATHER PHENOMENA — UNIDENTIFIED PRECIPITATION (UP)

In automated local routine report, ~~and~~ local special report, ~~and~~ METAR and SPECI, in addition to drizzle (DZ), rain (RA) and snow (SN), the abbreviation 'UP' should be used for unidentified precipitation when the type of precipitation cannot be identified by the automatic observing system.

AMC1 MET.TR.205(d)(3) Reporting of meteorological elements

PRESENT WEATHER PHENOMENA — ~~ADDITIONAL~~ CHARACTERISTICS

(a) In local routine report, ~~and~~ local special report, ~~and~~ METAR and SPECI, only when reported by a semi-automatic observing system, the following characteristics of present weather phenomena, as necessary, should be reported using their respective abbreviations and relevant criteria, as appropriate:

[…]

(b) In automated local routine report, ~~and~~ local special report, ~~and~~ METAR and SPECI, when showers (SH) referred to above cannot be determined based upon a method that takes account of the presence of convective cloud, the precipitation should not be characterised by 'SH'.

AMC2 MET.TR.205(d)(3) Reporting of meteorological elements

PRESENT WEATHER PHENOMENA — INTENSITY

In local routine report, ~~and~~ local special report, ~~and in~~ METAR and SPECI, the relevant intensity or, as appropriate, the proximity to the aerodrome of the reported present weather phenomena should be indicated as follows:

[…]

Vicinity (VC)

Between approximately 8 and 16 km of the aerodrome reference point and used only in METAR and SPECI with present weather when not reported under AMC1 MET.TR.205(d)(3) and MET.TR.205(d)(3).

AMC1 MET.TR.205(e)(1) Reporting of meteorological elements

CLOUD

In local routine report, ~~and~~ local special report, ~~and~~ METAR and SPECI:

[…]

AMC2 MET.TR.205(e)(1) Reporting of meteorological elements

CLOUD — AUTOMATIC OBSERVING SYSTEM

When an automatic observing system is used to report local routine report~~s~~, ~~and~~ local special report~~s~~, ~~and~~ METAR and SPECI:

[…]

AMC1 MET.TR.205(e)(3) Reporting of meteorological elements

CLOUD — HEIGHT OF CLOUD BASE

At aerodromes where low-visibility procedures are established for approach and landing, as agreed between the aeronautical meteorological station and the appropriate ATS unit, in local routine report~~s~~ and local special report~~s~~, the height of cloud base should be reported in steps of 50 ft up to and including 300 ft ~~(90 m)~~ and in steps of 100 ft ~~(30 m)~~ between 300 ft ~~(90 m)~~ and 10 000 ft ~~(3 000 m)~~, and the vertical visibility in steps of 50 ft ~~(15 m)~~ up to and including 300 ft ~~(90 m)~~ and in steps of 100 ft ~~(30 m)~~ between 300 ft ~~(90 m)~~ and 2 000 ft ~~(600 m)~~.

GM2 MET.TR.210 Observing meteorological elements

OPERATIONALLY DESIRABLE ACCURACY OF OBSERVATION

Element to be observed	*Operationally desirable accuracy of measurement or observation**
Mean surface wind	*Direction: ± 10°* ~~*Speed: ± 0.5 m/s (1 kt) up to 5 m/s (10 kt)*~~ *Speed: ± 1 kt up to 10 kt* ~~*(± 10 % above 5 m/s (10 kt)*~~ *± 10 % above 10 kt*
Variations from the mean surface wind	~~*± 1 m/s (2 kt), in terms of longitudinal and lateral components*~~ *± 2 kt, in terms of longitudinal and lateral components*
Visibility	*± 50 m up to 600 m* *± 10 % between 600 m and 1 500 m* *± 20 % above 1 500 m*
Runway visual range	*± 10 m up to 400 m* *± 25 m between 400 m and 800 m* *± 10 % above 800 m*
Cloud amount	*± 1 okta*
Cloud height	~~*± 10 m (33 ft) up to 100 m (330 ft)*~~ *± 33 ft up to 330 ft* ~~*± 10 % above 100 m (330 ft)*~~ *± 10 % above 330 ft*
Air temperature and dew-point temperature	*± 1°C*
Pressure value (QNH, QFE)	*± 0.5 hPa*
~~*Air temperature and dew-point temperature*~~	~~*± 1°C*~~
~~*Pressure value (QNH, QFE)*~~	~~*± 0.5 hPa*~~

* The operationally desirable accuracy is not intended as an operational requirement; it is to be understood as a goal that has been expressed by the operators.

AMC1 MET.TR.210(a) Observing meteorological elements

SURFACE WIND

[…]

(b) For METAR and SPECI, the surface wind observations should be representative of the conditions above the whole runway where there is only one runway, and the whole runway complex where there is more than one runway.

AMC1 MET.TR.210(a)(3) Observing meteorological elements

SURFACE WIND — AVERAGING

The averaging period for measuring variations from the mean wind speed (gusts) reported in accordance with MET.TR.205(a)(3)(iii) should be 3 seconds for local routine report, local special report, METAR, SPECI, and for wind displays used for depicting variations from the mean wind speed (gusts) in ATS units.

GM1 MET.TR.210(a)(3)(ii) Meteorological reports and other information

SURFACE WIND — AVERAGING — MARKED DISCONTINUITY

A marked discontinuity occurs when there is an abrupt and sustained change in wind direction of 30° or more, with a wind speed of 10 kt ~~(5 m/s)~~ before or after the change, or a change in wind speed of 10 kt ~~(5 m/s)~~ or more, lasting at least 2 minutes.

AMC1 MET.TR.210(b)(1) Observing meteorological elements

VISIBILITY — GENERAL

[…]

(e) For METAR and SPECI, the visibility observations should be representative of the aerodrome.

AMC1 MET.TR.210(c)(~~1~~2) Observing meteorological elements

RUNWAY VISUAL RANGE (RVR) — SITING

[…]

AMC1 MET.TR.210(c)(~~2~~3) Observing meteorological elements

RUNWAY VISUAL RANGE (RVR) — RUNWAY LIGHT INTENSITY

[…]

(d) In METAR and SPECI, the RVR should be based on the maximum light intensity available on the runway.

GM1 MET.TR.210(c)(~~2~~3) Observing meteorological elements

RUNWAY VISUAL RANGE (RVR) — USE OF INSTRUMENTED SYSTEMS

[…]

GM2 MET.TR.210(c)(~~2~~3) Observing meteorological elements

RUNWAY VISUAL RANGE (RVR)

[…]

GM1 MET.TR.210(c)(45)(ii)(B) Observing meteorological elements

RUNWAY VISUAL RANGE (RVR) — AVERAGING

[…]

AMC1 MET.TR.210(d)(1) Observing meteorological elements

PRESENT WEATHER — GENERAL

[…]

(b) For METAR and SPECI, the present weather information should be representative of the conditions at the aerodrome and, for certain specified present weather phenomena, in its vicinity.

AMC1 MET.TR.210(e) Observing meteorological elements

CLOUDS — GENERAL

[…]

(b) Cloud observations for METAR and SPECI should be representative of the aerodrome and its vicinity.

AMC1 MET.TR.210(f) Observing meteorological elements

AIR TEMPERATURE AND DEW-POINT TEMPERATURE

Observations of air temperature and dew-point temperature for local routine report, ~~and~~ local special report, ~~and for~~ METAR and SPECI, should be representative of the whole runway complex.

~~AMC1 MET.TR.210(f) Observing meteorological elements~~

~~**AIR TEMPERATURE AND DEW-POINT TEMPERATURE**~~

~~Observations of air temperature and dew-point temperature for local routine reports, and local special reports, and METAR and SPECI should be representative of the whole runway complex.~~

GM1 ~~to AMC3~~ MET.TR.215(a) Forecasts and other information

[…]

GM1 MET.TR.215(e)(1) & (2) Forecasts and other information

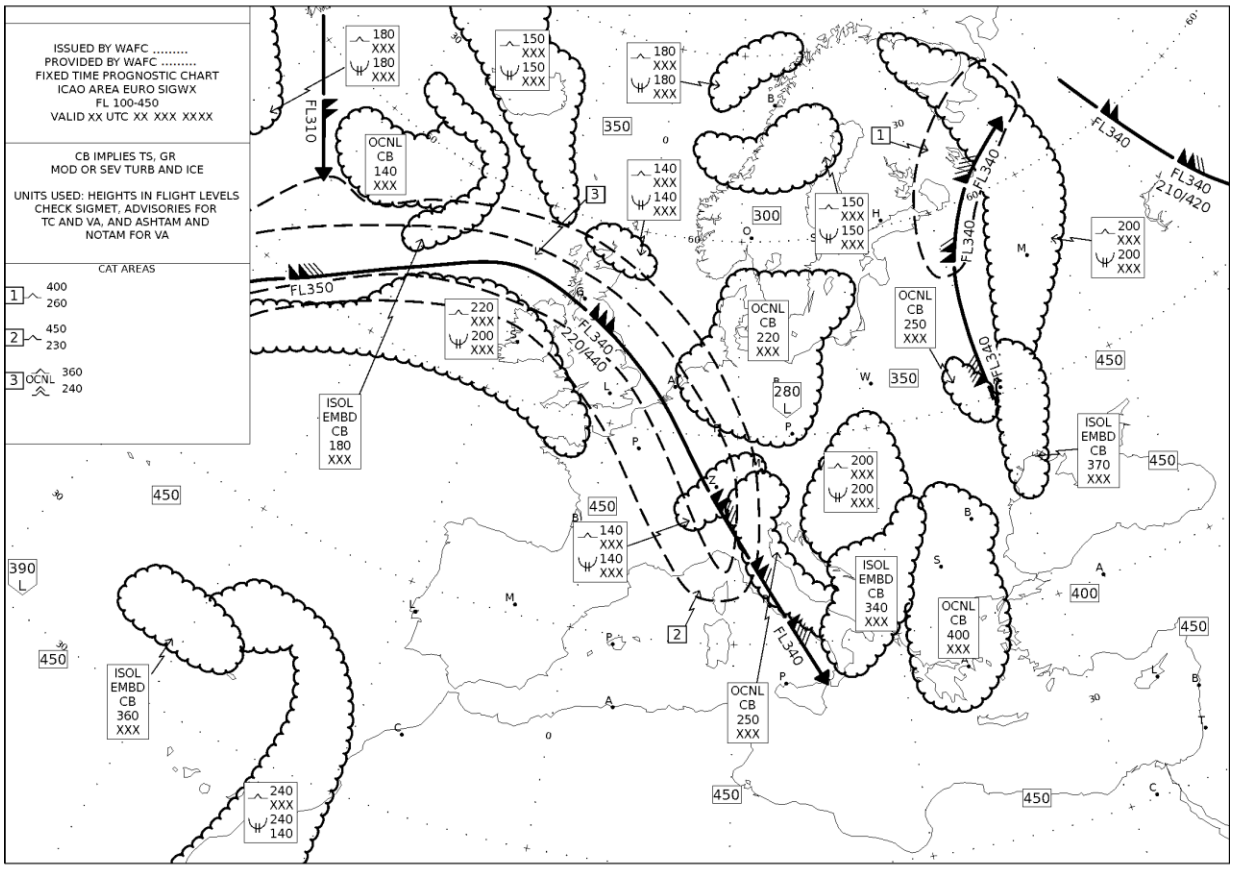
MODEL CHARTS

This guidance provides examples of model charts.

[…]

(d) SIGNIFICANT WEATHER CHART (MEDIUM LEVEL)

MODEL SWM



AMC2 MET.TR.215(f) Forecasts and other information

CHARTS

(a) The minimum number of charts for flights between flight level 250 and flight level 630 should include a high-level SIGWX chart (flight level 250 to flight level 630) or a medium-level SIGWX chart (flight level 100 to flight level 450), if appropriate, and a forecast flight level 340~~250 hPa~~ wind and temperature chart.

[…]

GM2 MET.TR.215(f) Forecasts and other information

MAP PROJECTIONS — CORRECT CONVERSION BETWEEN DIFFERENT MAP PROJECTIONS

When plotting shapes, particularly polygons, on maps, appropriate corrections are necessary if they are plotted on projections different to those used in the production of the original forecast area.

GM3 MET.TR.215(i) Forecasts and other information

CLIMATOLOGICAL DATA FOR AERODROME PLANNING PURPOSES

Climatological data required for aerodrome planning purposes ~~are~~is set out in GM1 ADR-DSN.B.015(f) 'Data to be used'.

GM2 MET.TR.220 Aerodrome forecasts

TAF — EXAMPLE OF CANCELLATION

Cancellation of TAF for YUDO (Donlon/International)*:

TAF AMD YUDO 161845~~915~~Z 1618/1703 CNL=

Meaning of the forecast:

Amended TAF for Donlon/International* issued on the 16th of the month at 18~~9~~.45~~00~~ UTC cancelling the previously issued TAF valid from 18.0~~.~~0 UTC on the 16th of the month to 03.00 UTC on the 17th of the month.

** Fictitious location*

GM3 MET.TR.220 Aerodrome forecasts

TAF — ACCURACY

The accuracy of TAF should be monitored using appropriate verification methodologies as agreed with the competent authority. The verification should identify the accuracy of the forecast against the required change criteria for the forecast elements: wind direction, wind speed, visibility, precipitation, cloud amount, and cloud height. Where provided, maximum and minimum temperature forecasts in TAF should be verified.~~Guidance on operationally desirable accuracy of TAF is given below:~~

~~Element to be forecast~~	~~Operationally desirable accuracy of forecasts~~	~~Minimum percentage of cases within range~~
	~~TAF~~	
~~Wind direction~~	~~± 20°~~	~~80 % of cases~~
~~Wind speed~~	~~± 2.5 m/s (5 kt)~~	~~80 % of cases~~
~~Visibility~~	~~± 200 m up to 800 m~~ ~~± 30 % between 800 m and 10 km~~	~~80 % of cases~~
~~Precipitation~~	~~Occurrence or non-occurrence~~	~~80 % of cases~~
~~Cloud amount~~	~~One category below 450 m (1 500 ft)~~ ~~Occurrence or non-occurrence of BKN or OVC between 450 m (1 500 ft) and 3 000 m (10 000 ft)~~	~~70 % of cases~~
~~Cloud height~~	~~± 30 m (100 ft) up to 300 m (1 000 ft)~~ ~~± 30 % above 300 m (1 000 ft)~~	~~70 % of cases~~
~~Air temperature~~	~~± 1°C~~	~~70 % of cases~~

AMC1 MET.TR.220(b) Aerodrome forecasts

TAF — CODE FORM

TAF, and amendments thereto, should be encoded using:

(a) the IWXXM GML form as specified in point (a) of AMC1 MET.TR.115(a); and

(b) the alphanumeric code form for TAF as specified in point (b) of AMC1 MET.TR.115(a).

~~GM2 MET.TR.220(b) Aerodrome forecasts~~

~~**TAF CODE FORM**~~

~~The TAF code form is contained in the WMO Publication No 306, Manual on Codes, Volume I.1, Part A — Alphanumeric Codes.~~

AMC1 MET.TR.220(c) Aerodrome forecasts

PERIOD OF VALIDITY

[…]

(d) If so agreed between the competent authority and the meteorological services provider, TAF valid for 24 or 30 hours may be issued every 3 hours, and the validity should commence at 00, 03, 06, 09, 12, 15, 18 and 21 UTC.

(~~d~~e) At aerodromes with limited hours of operation, the beginning of the period of validity of a TAF should commence at least 1 hour prior to the aerodrome resuming operations, or more as agreed between the aerodrome meteorological office and the operators concerned, to meet planning requirements for flights that arrive at the aerodromes as soon as it is opened for use.

~~GM1 MET.TR.220(d) Aerodrome forecasts~~

~~**TAF — DIGITAL FORM**~~

~~(a) When TAF is disseminated in digital form, this is in addition to the TAF code form.~~

~~(b) Guidance on the information exchange model, GML, and metadata profile is provided in ICAO Doc 10003 'Manual on the ICAO Meteorological Information Exchange Model'.~~

GM1 MET.TR.220(e)(2)(i) Aerodrome forecasts

TAF — PHENOMENA REDUCING VISIBILITY

When the visibility is forecast to be 5 000 m or less, the forecast weather phenomenon reducing visibility may be included in TAF, e.g. phenomena, and combinations thereof, such as FG, BR, HZ, -RA, -SN, etc.

GM1 MET.TR.220(f)(1) Aerodrome forecasts

TAF — USE OF CHANGE AND TIME INDICATORS

Guidance on the use of change and time indicators in TAF is given below:

Change or time indicator		Time period	Meaning	
FM		~~ndndnhnhnmnm~~ $n_dn_dn_hn_hn_mn_m$	Used to indicate a significant change in most weather elements occurring at ~~ndnd~~n_dn_d day, ~~nhnh~~n_hn_h hours and ~~nmnm~~n_mn_m minutes (UTC); ~~a~~All the elements given before 'FM' are to be included following 'FM' (i.e. they are all superseded by those following the abbreviation).	
BECMG		~~nd1nd1nh1nh1/nd2nd2nh2nh2~~ $n_{d1}n_{d1}n_{h1}n_{h1}/n_{d2}n_{d2}n_{h2}n_{h2}$	The change is forecast to commence at ~~nd1nd1~~$n_{d1}n_{d1}$ day and ~~nh1nh1~~$n_{h1}n_{h1}$ hours (UTC) and be completed by ~~nd2nd2~~$n_{d2}n_{d2}$ day and ~~nh2nh2~~$n_{h2}n_{h2}$ hours (UTC); ~~o~~Only those elements for which a change is forecast are to be given following 'BECMG'; ~~t~~The time period ~~nd1nd1nh1nh1/nd2nd2nh2nh2~~$n_{d1}n_{d1}n_{h1}n_{h1}/n_{d2}n_{d2}n_{h2}n_{h2}$ should normally be less than 2 hours and in any case should not exceed 4 hours.	
TEMPO		~~nd1nd1nh1nh1/nd2nd2nh2nh2~~ $n_{d1}n_{d1}n_{h1}n_{h1}/n_{d2}n_{d2}n_{h2}n_{h2}$	Temporary fluctuations are forecast to commence at ~~nd1nd1~~$n_{d1}n_{d1}$ day and ~~nh1nh1~~$n_{h1}n_{h1}$ hours (UTC) and cease by ~~nd2nd2~~$n_{d2}n_{d2}$ day and ~~nh2nh2~~$n_{h2}n_{h2}$ hours (UTC); ~~o~~Only those elements for which fluctuations are forecast are to be given following 'TEMPO'; temporary fluctuations should ~~not~~ last ~~more~~ less than ~~one~~1 hour in each instance, and in the aggregate, cover less than half of the period ~~nd1nd1nh1nh1/nd2nd2nh2nh2~~$n_{d1}n_{d1}n_{h1}n_{h1}/n_{d2}n_{d2}n_{h2}n_{h2}$.	
PROBnn	—	~~nd1nd1nh1nh1/nd2nd2nh2nh2~~ $n_{d1}n_{d1}n_{h1}n_{h1}/n_{d2}n_{d2}n_{h2}n_{h2}$	~~p~~Probability of occurrence (in %) of an alternative value of a forecast element or elements; nn = 30 or nn = 40 only; ~~t~~To be placed after the element(s) concerned.	—
	TEMPO	~~nd1nd1nh1nh1/nd2nd2nh2nh2~~ $n_{d1}n_{d1}n_{h1}n_{h1}/n_{d2}n_{d2}n_{h2}n_{h2}$		~~p~~Probability of occurrence of temporary fluctuations.

GM1 MET.TR.225(c)(7)(ii) Forecasts for landing

TREND FORECASTS — USE OF CHANGE INDICATORS

Guidance on the use of change indicators in trend forecasts is given in the table below.

Change indicator	Time indicator and period	Meaning	
NOSIG	—	no significant changes are forecast	
BECMG	~~FMn1n1n1n1 TLn2n2n2n2~~ $FMn_1n_1n_1n_1$ $TLn_2n_2n_2n_2$	the change is forecast to:	commence at ~~n1n1n1n1~~$n_1n_1n_1n_1$ UTC and be completed by ~~n2n2n2n2~~$n_2n_2n_2n_2$ UTC
	TLnnnn		commence at the beginning of the trend forecast period and be completed by nnnn UTC
	FMnnnn		commence at nnnn UTC and be completed by the end of the trend forecast period
	ATnnnn		occur at nnnn UTC (specified time)

	—		commence at the beginning of the trend forecast period and be completed by the end of the trend forecast period; or the time is uncertain
TEMPO	~~FMn1n1n1n1 TLn2n2n2n2~~ FM$n_1n_1n_1n_1$ TL$n_2n_2n_2n_2$	temporary fluctuations are forecast to	commence at ~~n1n1n1n1~~$n_1n_1n_1n_1$ UTC and cease by ~~n2n2n2n2~~$n_2n_2n_2n_2$ UTC
	TLnnnn		commence at the beginning of the trend forecast period and cease by nnnn UTC
	FMnnnn		commence at nnnn UTC and cease by the end of the trend forecast period
	—		commence at the beginning of the trend forecast period and cease by the end of the trend forecast period

AMC1 MET.TR.225(c)(7)(iii) Forecasts for landing

USE OF CHANGE GROUPS — TEMPO

(a) ~~When the change is forecast to begin and end wholly within the trend forecast period, the beginning and end of the change should be indicated by using the abbreviations 'FM' and 'TL' respectively, with their associated time groups.~~When the period of the temporary fluctuations in the meteorological conditions is forecast to begin and end wholly within the TREND forecast period, the beginning and end of the period of the temporary fluctuations should be indicated by using the abbreviations 'FM' and 'TL' respectively, with their associated time groups.

(b) ~~When the change is forecast to commence at the beginning of the trend forecast period but be completed before the end of that period, the abbreviation 'FM' and its associated time group should be omitted and only 'TL' and its associated time group should be used.~~When the period of the temporary fluctuations is forecast to commence at the beginning of the TREND forecast period but cease before the end of that period, the abbreviation 'FM' and its associated time group should be omitted and only 'TL' and its associated time group should be used.

(c) ~~When the change is forecast to begin during the trend forecast period and be completed at the end of that period, the abbreviation 'TL' and its associated time group should be omitted and only 'FM' and its associated time group should be used.~~When the period of the temporary fluctuations is forecast to begin during the TREND forecast period and cease by the end of that period, the abbreviation 'TL' and its associated time group should be omitted and only 'FM' and its associated time group should be used.

(d) ~~When the change is forecast to occur at a specified time during the trend forecast period, the abbreviation 'AT' followed by its associated time group should be used.~~When the period of the temporary fluctuations is forecast to commence at the beginning of the TREND forecast period and cease by the end of that period, both abbreviations 'FM' and 'TL' and their associated time groups should be omitted and the change indicator 'TEMPO' should be used alone.

~~(e) When the change is forecast to commence at the beginning of the trend forecast period and be completed by the end of that period, or when the change is forecast to occur within the trend forecast period but the time is uncertain, the abbreviations 'FM', 'TL' or 'AT' and their associated time groups should be omitted and the change indicator 'TEMPO' should be used alone.~~

AMC1 MET.TR.235 Aerodrome warnings and wind shear warnings and alerts

AERODROME WARNINGS — ~~FORMAT~~TEMPLATE FOR AERODROME WARNINGS

(a) Aerodrome warnings should be issued in accordance with the template below or in another format where required by operators or aerodrome meteorological offices.

Template for aerodrome warnings

Key:

M = inclusion mandatory;

C = inclusion conditional, included whenever applicable.

Note 1: The ranges and resolutions for the numerical elements included in aerodrome warnings are provided in GM1 MET.TR.235.

Note 2: The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the aerodrome warning.

Ref.	*Element*	*Detailed content*	*Templates*
1	Location indicator of the aerodrome (M)	Location indicator of the aerodrome	nnnn
2	Identification of the type of message (M)	Type of message and sequence number	AD WRNG [n]n
3	Validity period (M)	Day and time of validity period in UTC	VALID nnnnnn/nnnnnn
4	IF THE AERODROME WARNING IS TO BE CANCELLED, SEE DETAILS AT THE END OF THE TEMPLATE.		
5	Phenomenon (M)	Description of the phenomenon causing the issuance of the aerodrome warning	TC nnnnnnnnnn *or* [HVY] TS *or* GR *or* [HVY] SN [nnCM] *or* [HVY] FZRA *or* [HVY] FZDZ *or* RIME *or* [HVY] SS *or* [HVY] DS *or* SA *or* DU *or* SFC WSPD nn[n]KT MAX nn[n] *or* SFC WIND nnn/nn[n]KT MAX nn[n] or SQ *or* FROST *or* TSUNAMI *or* VA[DEPO] *or* TOX CHEM *or* *Free text up to 32 characters*
6	Observed or forecast phenomenon (M)	Indication whether the information is observed and expected to continue, *or* forecast	OBS [AT nnnnZ] *or* FCST
7	Changes in intensity (C)	Expected changes in intensity	INTSF *or* WKN *or* NC
	OR		
8	Cancellation of the aerodrome warning	Cancellation of the aerodrome warning referring to its identification	CNL AD WRNG [n]n nnnnnn/nnnnnn

~~Element~~	~~Detailed content~~	~~Templates~~	~~Examples~~
~~Location indicator of the aerodrome (M)~~	~~Location indicator of the aerodrome~~	~~nnnn~~	~~YUCC~~

Element	Detailed content	Templates	Examples
Identification of the type of message (M)	Type of message and sequence number	AD WRNG [n]n	AD WRNG 2
Validity period (M)	Day and time of validity period in UTC	VALID nnnnnn/nnnnnn	VALID 211230/211530
IF THE AERODROME WARNING IS TO BE CANCELLED, SEE DETAILS AT THE END OF THE TEMPLATE.			
Phenomenon (M)	Description of phenomenon causing the issuance of the aerodrome warning	TC nnnnnnnnnn or [HVY] TS or GR or [HVY] SN [nnCM] or [HVY] FZRA or [HVY] FZDZ or RIME or [HVY] SS or [HVY] DS or SA or DU or SFC WSPD nn[n]MPS MAX nn[n] (SFC WSPD nn[n]KT MAX nn[n]) or SFC WIND nnn/nn[n]MPS MAX nn[n] (SFC WIND nnn/nn[n]KT MAX nn[n]) or SQ or FROST or TSUNAMI or VA[DEPO] or TOX CHEM or Free text up to 32 characters	TC ANDREW HVY SN 25CM SFC WSPD 20MPS MAX 30 VA TSUNAMI
Observed or forecast phenomenon (M)	Indication whether the information is observed and expected to continue, or forecast	OBS [AT nnnnZ] or FCST	OBS AT 1200Z OBS
Changes in intensity (C)	Expected changes in intensity	INTSF or WKN or NC	WKN
OR			
Cancellation of aerodrome warning	Cancellation of aerodrome warning referring to its identification	CNL AD WRNG [n]n nnnnnn/nnnnnn	CNL AD WRNG 2 211230/211530

(b) When the above template is used, the sequence number referred to in the template should correspond to the number of aerodrome warnings issued for a given aerodrome since 00.01 UTC on the day concerned.

GM1 MET.TR.235 Aerodrome warnings and wind shear warnings and alerts

RANGES AND RESOLUTIONS — AERODROME WARNINGS

(a) The ranges and resolutions for the numerical elements included in aerodrome warnings are shown below.

Ranges and resolutions for the numerical elements included in volcanic ash and tropical cyclone advisories, SIGMET, AIRMET, aerodrome and wind shear warnings *Note:* The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the template.			
Ref.	***Elements***	***Range***	***Resolution***
1	Summit elevation: FT M	000–27 000 000–8 100	1 1
2	Advisory number: for VA (index)* for TC (index)*	000–2 000 00–99	1 1
3	Maximum surface wind: KT	00–199	1
4	Central pressure: hPa	850–1 050	1
5	Surface wind speed: KT	30–99	1
6	Surface visibility: M M	0000–0750 0800–5 000	50 100
7	Cloud: height of base: FT	000–1 000	100
8	Cloud: height of top: FT FT	000–9 900 10 000–60 000	100 1 000
9	Latitudes: ° (degrees) (minutes)	00–90 00–60	1 1
10	Longitudes: ° (degrees) (minutes)	000–180 00–60	1 1
11	Flight levels:	000–650	10
12	Movement: KT KMH	0–150 0–300	5 10
* Non-dimensional			

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

~~RANGES AND RESOLUTIONS — AERODROME WARNINGS~~

~~(a) The ranges and resolutions for the numerical elements included in aerodrome warnings are shown below:~~

~~Ranges and resolutions for the numerical elements included in volcanic ash and tropical cyclone advisory, SIGMET, AIRMET aerodrome warning and wind shear warning~~			
~~Elements~~		~~Range~~	~~Resolution~~
~~Summit elevation:~~	~~M~~ ~~FT~~	~~000–8 100~~ ~~000–27 000~~	~~1~~ ~~1~~
~~Advisory number:~~	~~for VA (index)*~~ ~~for TC (index)*~~	~~000–2 000~~ ~~00–99~~	~~1~~ ~~1~~
~~Maximum surface wind:~~	~~MPS~~ ~~KT~~	~~00–99~~ ~~00–199~~	~~1~~ ~~1~~
~~Central pressure:~~	~~hPa~~	~~850–1 050~~	~~1~~
~~Surface wind speed:~~	~~MPS~~ ~~KT~~	~~15–49~~ ~~30–99~~	~~1~~ ~~1~~
~~Surface visibility:~~	~~M~~ ~~M~~	~~0000–0750~~ ~~0800–5 000~~	~~50~~ ~~100~~
~~Cloud: height of base:~~	~~M~~	~~000–300~~	~~30~~

Ranges and resolutions for the numerical elements included in volcanic ash and tropical cyclone advisory, SIGMET, AIRMET aerodrome warning and wind shear warning

Elements	Range	Resolution
FT	000–1 000	100
Cloud: height of top: M	000–2 970	30
M	3 000–20 000	300
FT	000–9 900	100
FT	10 000–60 000	1 000
Latitudes: ° (degrees)	00–90	1
(minutes)	00–60	1
Longitudes: ° (degrees)	000–180	1
(minutes)	00–60	1
Flight levels:	000–650	10
Movement: KMH	0–300	10
KT	0–150	5
* Non-dimensional		

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

GM2 MET.TR.235 Aerodrome warnings and wind shear warnings and alerts

AERODROME WARNINGS — EXAMPLES OF ELEMENTS

Non-exhaustive examples of the different elements used in the formulation of aerodrome warnings are provided below.

Aerodrome warning — examples of elements

Note 1: Consult the 'aerodrome warning' template in AMC1 MET.TR.235 to identify the mandatory (M), the conditional (C) or the optional (O) elements.

Note 2: The ranges and resolutions for the numerical elements included in aerodrome warnings are provided in GM1 MET.TR.235.

Note 3: The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the aerodrome warning. They do not correlate with the 'Ref.' column in AMC1 MET.TR.235. Refer to the 'Element' column when cross-referencing.

Ref.	*Element*	*Examples*
1	Location indicator of the aerodrome	YUCC
2	Identification of the type of message	AD WRNG 2
3	Validity period	VALID 211230/211530
4	IF THE AERODROME WARNING IS TO BE CANCELLED, SEE DETAILS AT THE END OF THE TEMPLATE.	
5	Phenomenon	TC ANDREW HVY SN 25CM SFC WSPD 40KT MAX 60 SFC WIND 230/40KT VA TSUNAMI
6	Observed or forecast phenomenon	OBS AT 1200Z OBS
7	Changes in intensity	WKN
	OR	
8	Cancellation of the aerodrome warning	CNL AD WRNG 2 211230/211530

GM3 MET.TR.235 Aerodrome warnings and wind shear warnings and alerts

PHENOMENON (M) — TOX CHEM

When issuing an aerodrome warning due to information related to toxic chemical affecting an aerodrome and or volcanic ash deposition, the warning should be filed by means of the use of free text up to 32 characters, e.g. TOX CHEM FCST XXXX AIRPORT NEARBY WKN. (XXXX = ICAO Location Indicator)

AMC1 MET.TR.235(c) Aerodrome warnings and wind shear warnings and alerts

~~FORMAT OF~~ WIND SHEAR WARNINGS — FORMAT

(a) The use of text in addition~~al~~ to the abbreviations listed in the template in ~~Table 6 of~~ Appendix 4~~1~~ should be kept to a minimum. The additional text should be prepared in abbreviated plain language using ICAO-approved abbreviations and numerical values.

[…]

AMC2 MET.TR.250(a) SIGMET

SIGMET — CODE FORM

SIGMET, and cancellations thereof, should be encoded using:

(a) the IWXXM GML form as specified in point (a) of AMC1 MET.TR.115(a);

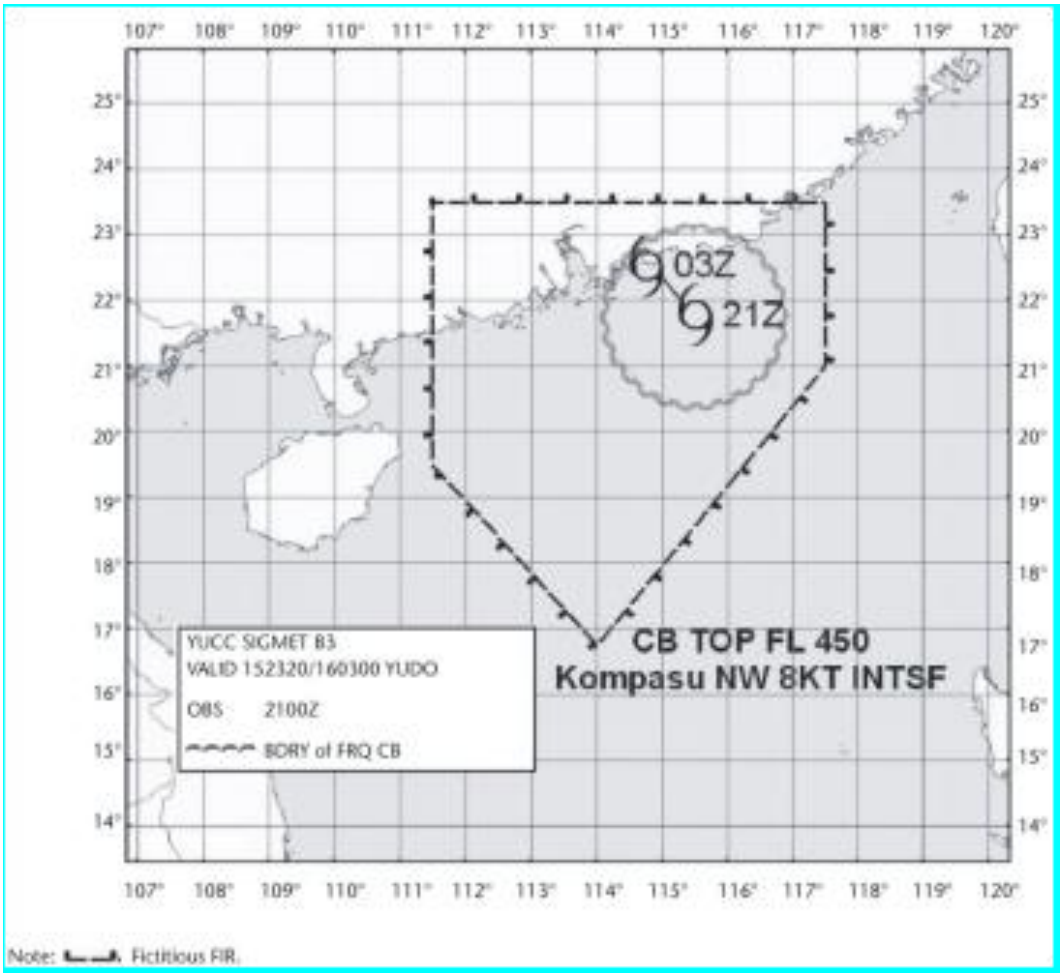
(b) abbreviated plain language as specified in point (c) of AMC1 MET.TR.115(a).

AMC3 MET.TR.250(a) SIGMET

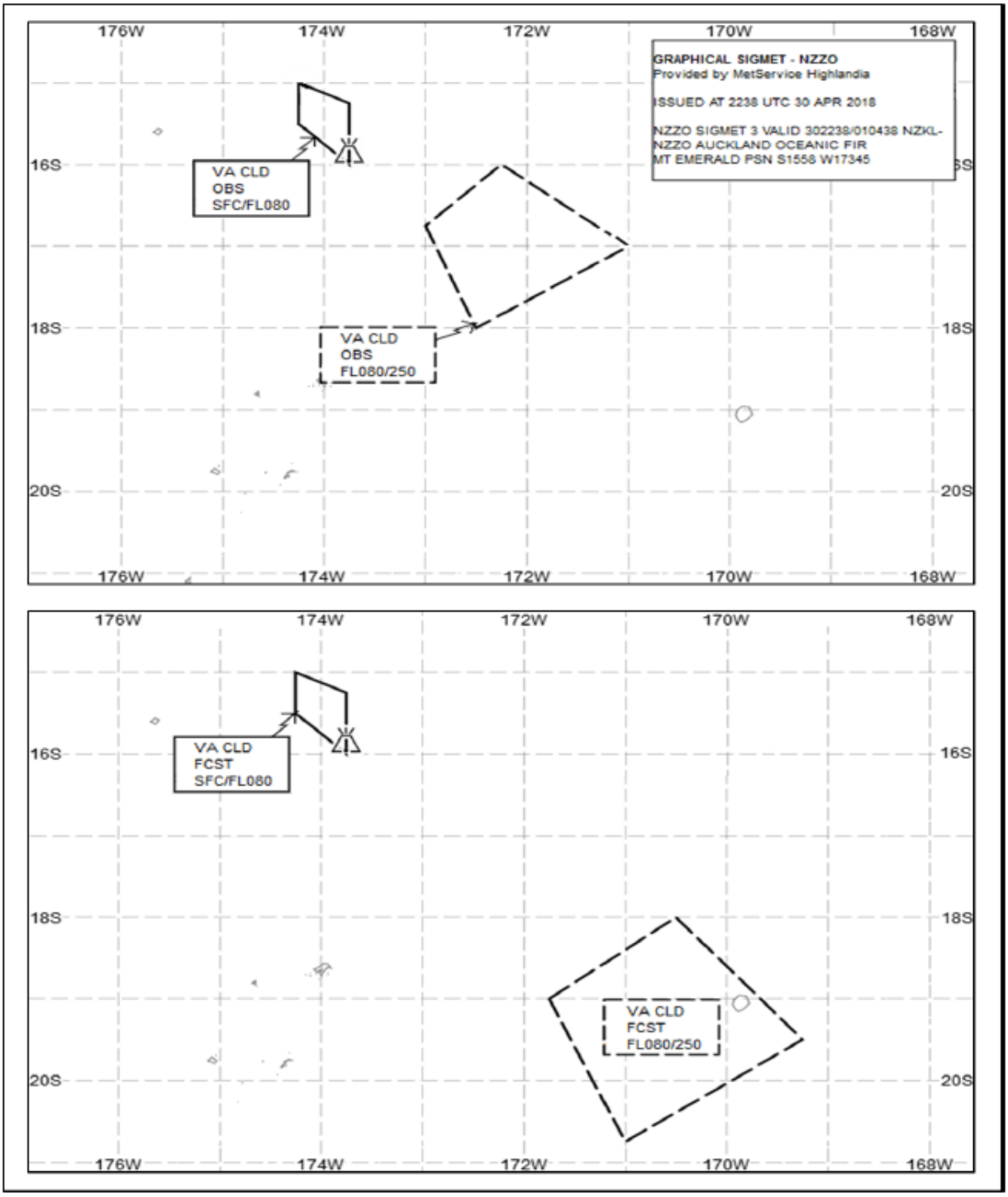
FORMAT

SIGMET, when issued in graphical format, should be as specified below:

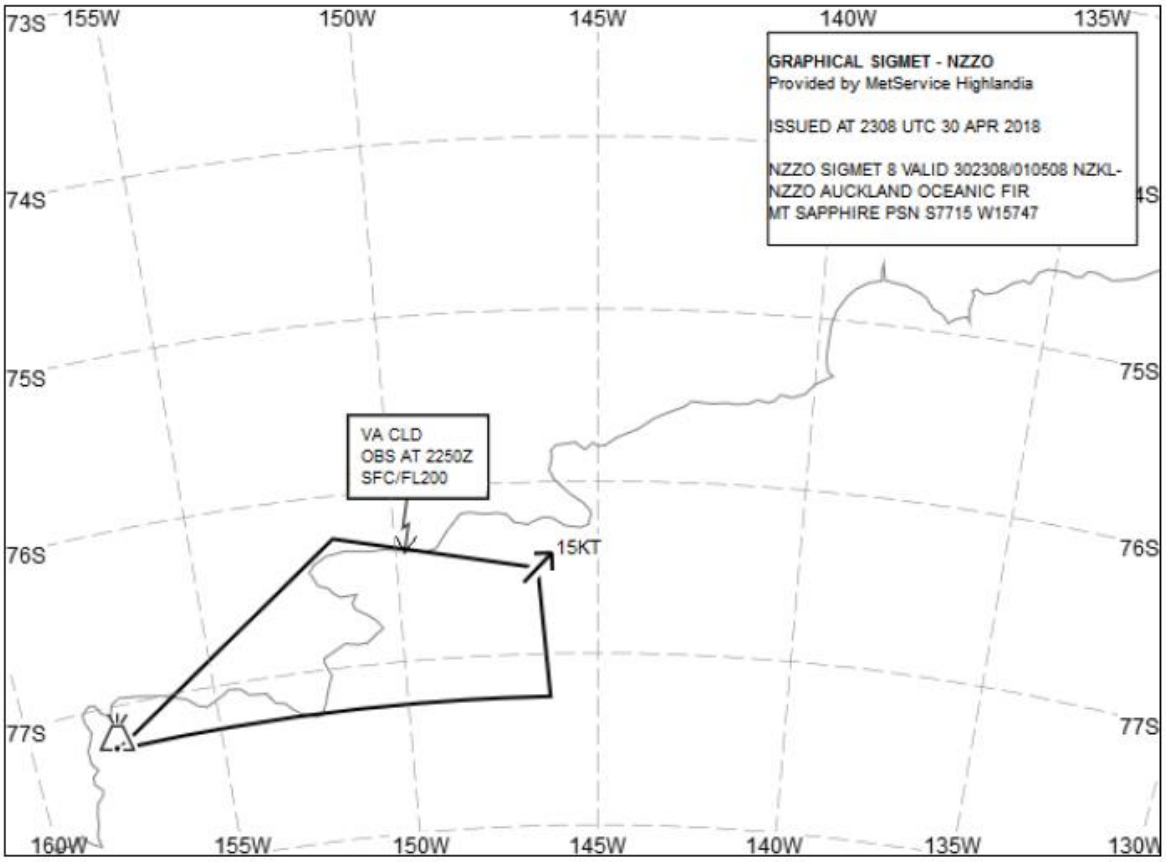
(a) SIGMET FOR TROPICAL CYCLONE — MODEL STC



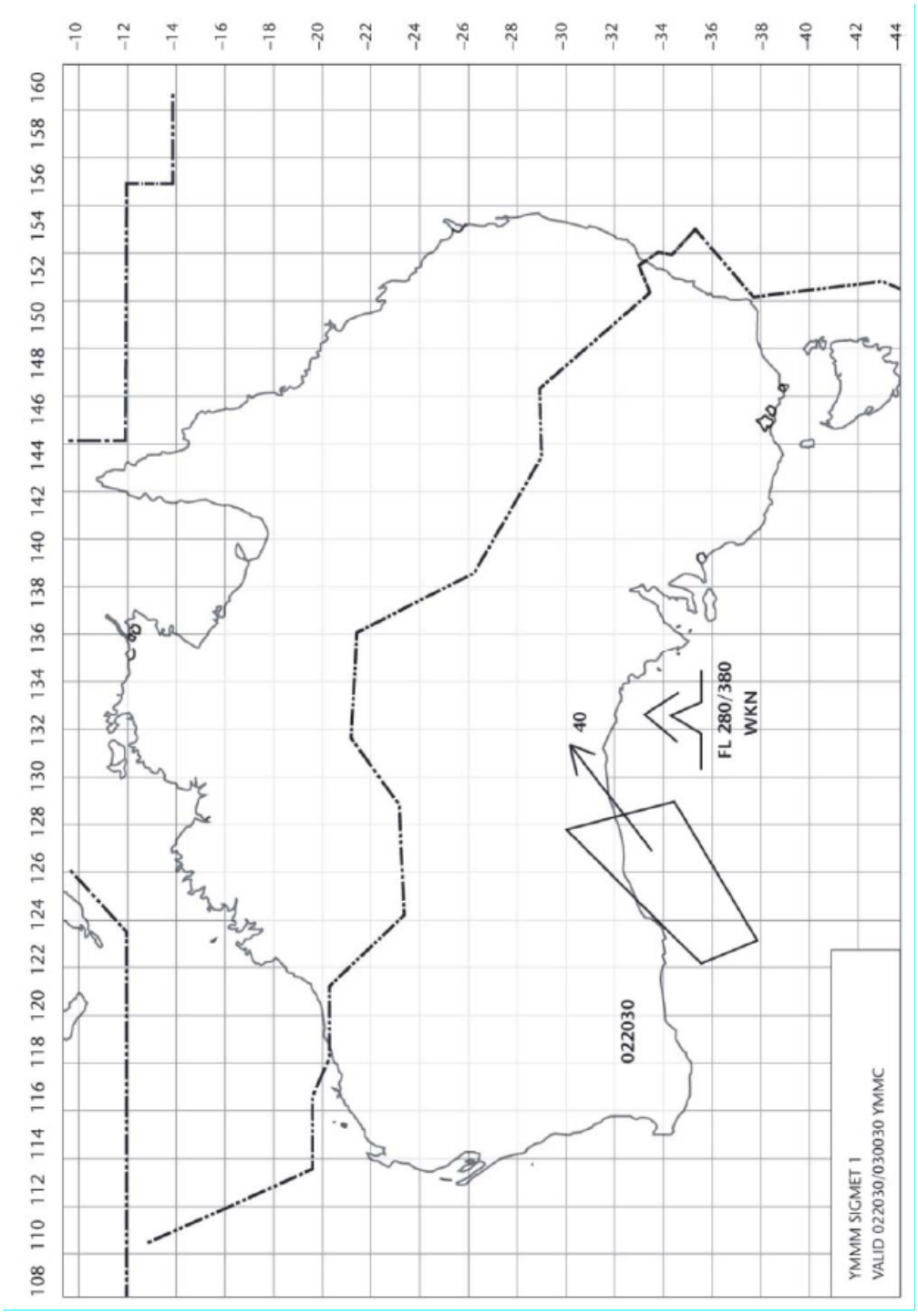
(b) SIGMET FOR VOLCANIC ASH — MODEL SVA, MERCATOR PROJECTION



(c) SIGMET FOR VOLCANIC ASH — MODEL SVA, POLAR STEREOGRAPHIC PROJECTION



(d) SIGMET FOR PHENOMENA OTHER THAN TROPICAL CYCLONES AND VOLCANIC ASH — MODEL SGE



AMC4 MET.TR.250(a) SIGMET

COORDINATION WITH NEIGHBOURING METEOROLOGICAL WATCH OFFICES (MWOs)

An MWO should coordinate SIGMET with neighbouring MWO(s), especially when the en-route weather phenomenon extends or is expected to extend beyond the MWO's specified area of responsibility, to ensure harmonised SIGMET provision.

GM5 MET.TR.250(a) SIGMET

EXAMPLE OF SIGMET FOR RADIOACTIVE CLOUD

YUCC SIGMET RO2 VALID 201200/201600 YUDO-—

YUCC AMSWELL FIR RDOACT CLD OBS AT 1155Z WI 30KM OF N6030 E02550 SFC/FL550 STNR~~S5000 W14000 — S5000 W13800 — S5200 W13800 — S5200 W14000 — S5000 W14000 SFC/FL100 WKN FCST AT 1600Z WI S5200 W14000 — S5200 W13800 — S5300 W14000 — S5200 W14000~~

Meaning:

The second radioactive cloud SIGMET issued for the AMSWELL* flight information region (identified by YUCC Amswell area control centre) by the Donlon/International* meteorological watch office (YUDO) since 00.01 UTC; the SIGMET is valid from 12.00 UTC to 16.00 UTC on the 20th of the month; radioactive cloud was observed at 11.55 UTC within 30 kilometres of 60 degrees 30 minutes north 25 degrees 50 minutes east between the surface and flight level 550. The radioactive cloud is stationary.~~an area bounded by 50 degrees 0 minutes south and 140 degrees 0 minutes west to 50 degrees 0 minutes south and 138 degrees 0 minutes west to 52 degrees 0 minutes south and 138 degrees 0 minutes west to 52 degrees 0 minutes south and 140 degrees 0 minutes west to 50 degrees 0 minutes south and 140 degrees 0 minutes west and between the surface and flight level 100; the radioactive cloud is expected to weaken in intensity.~~

** Fictitious locations*

GM7 MET.TR.250(a) SIGMET

COORDINATION WITH NEIGHBOURING METEOROLOGICAL WATCH OFFICES (MWOs)

Guidance on the bilateral or multilateral coordination between MWOs of neighbouring States for the provision of SIGMET can be found in ICAO EUR Doc 014 ‘EUR SIGMET and AIRMET Guide’.

AMC1 MET.TR.250(c) SIGMET

SEQUENCE NUMBER

(a) The three-character sequence number should be constructed using a single letter identifying the phenomenon, followed by two numeric characters corresponding to the number of SIGMET issued for that phenomenon for the specified flight information region since 00.01 UTC on the day concerned.

(b) The letters to be used as the first character for the SIGMET sequence number to indicate the specified en-route weather and other phenomena for which the SIGMET has been issued should be:

SIGMET Type	Specified en-route phenomena	Letter to be used in the sequence number for specified en-route phenomena
WC	Tropical cyclone	C
	For WC exchange test purposes	X
WV	Volcanic ash	A
	For WV exchange test purposes	Y
WS	Thunderstorm	T
	Turbulence	U
	Icing	I
	Freezing rain	F
	Mountain wave	M

	Dust storm	D
	Sandstorm	S
	Radioactive cloud	R
	For WS exchange test purposes	Z

(c) When SIGMET is issued for test purposes ('TEST' status indicator used in the SIGMET), then the appropriate letter for exchange test purposes should be used, i.e. 'Y' for a TEST volcanic ash SIGMET. When SIGMET is issued for exercise purposes ('EXER' status indicator used in the SIGMET), then the letter chosen should correspond to that used under normal circumstances, i.e. 'A' for a SIGMET issued during a volcanic ash exercise.

GM1 MET.TR.250(d) SIGMET

CRITERIA RELATED TO PHENOMENA

[…]

(f) Turbulence is considered:

(1) severe whenever the peak value ~~of the cube root~~ of the EDR equals or exceeds ~~0.7~~0.45; and

(2) moderate whenever the peak value ~~of the cube root~~ of the EDR is equal to or above ~~0.4~~0.20 and below ~~or equal to 0.7~~0.45.

[…]

~~GM1 MET.TR.250(f)(1) SIGMET~~

~~**SIGMET - DIGITAL FORM**~~

~~(a) When SIGMET is disseminated in digital form, this is in addition to the SIGMET code form.~~

~~(b) Guidance on the information exchange model, GML, and metadata profile is provided in ICAO Doc 10003 'Manual on the ICAO Meteorological Information Exchange Model'.~~

~~AMC1 MET.TR.250(g) SIGMET~~

~~**FORMAT**~~

~~SIGMET, when issued in graphical format, should be as specified below:~~

~~(a) SIGMET FOR TROPICAL CYCLONE — MODEL STC~~

~~(b) SIGMET FOR VOLCANIC ASH — MODEL SVA~~

~~(c) SIGMET FOR PHENOMENA OTHER THAN TROPICAL CYCLONE AND VOLCANIC ASH — MODEL SGE~~

AMC1 MET.TR.255(a) AIRMET

AIRMET — CODE FORM

AIRMET, and cancellations thereof, should be encoded using:

(a) the IWXXM GML form as specified in point (a) of AMC1 MET.TR.115(a);

(b) abbreviated plain language as specified in point (c) of AMC1 MET.TR.115(a).

~~GM1 MET.TR.255(e) AIRMET~~

~~**AIRMET — DIGITAL FORM**~~

~~(a) When AIRMET is disseminated in digital form, this is in addition to the AIRMET code form.~~

~~(b) Guidance on the information exchange model, GML, and metadata profile is provided in ICAO Doc 10003 'Manual on the Meteorological Information Exchange Model'.~~

AMC1 MET.TR.260 Area forecasts for low-level flights

AMENDMENT OF AREA FORECASTS FOR LOW-LEVEL ~~FORECASTS~~FLIGHTS

(a) In case ~~the~~that an area forecast for low-level flights is not issued in combination with AIRMET~~/low-level forecast concept is not fully implemented~~, the criteria for amendments to the area forecast for low-level flights should as a minimum include the weather phenomena hazardous to low-level flights, which would otherwise constitute the criteria for the issuance of AIRMET.

[…]

Chapter 4 — Technical requirements for volcanic ash advisory centres (VAACs)

AMC1 MET.TR.265 Volcanic ash advisory centre responsibilities

VOLCANIC ASH ADVISORY — CODE FORM

Volcanic ash advisory should be disseminated using:

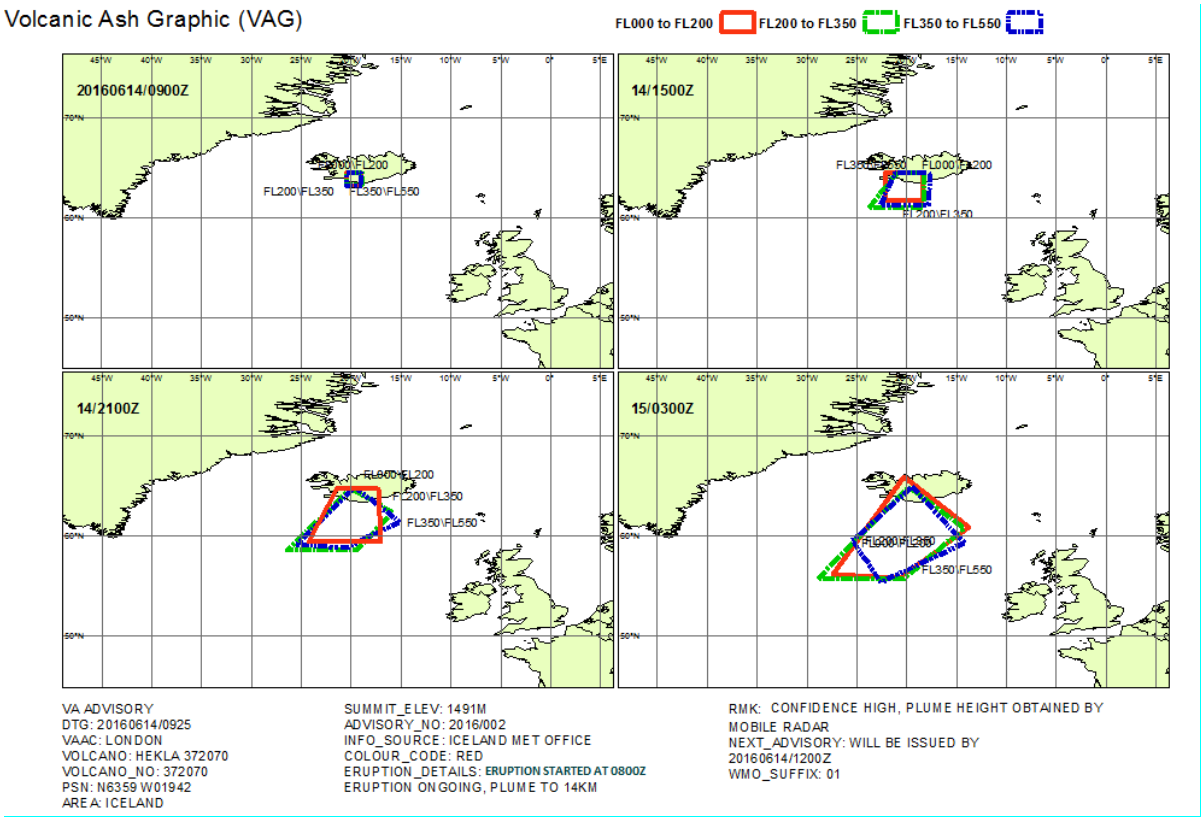
(a) the IWXXM GML form as specified in point (a) of AMC1 MET.TR.115(a);

(b) abbreviated plain language as specified in point (c) of AMC1 MET.TR.115(a).

AMC2 MET.TR.265 Volcanic ash advisory centre responsibilities

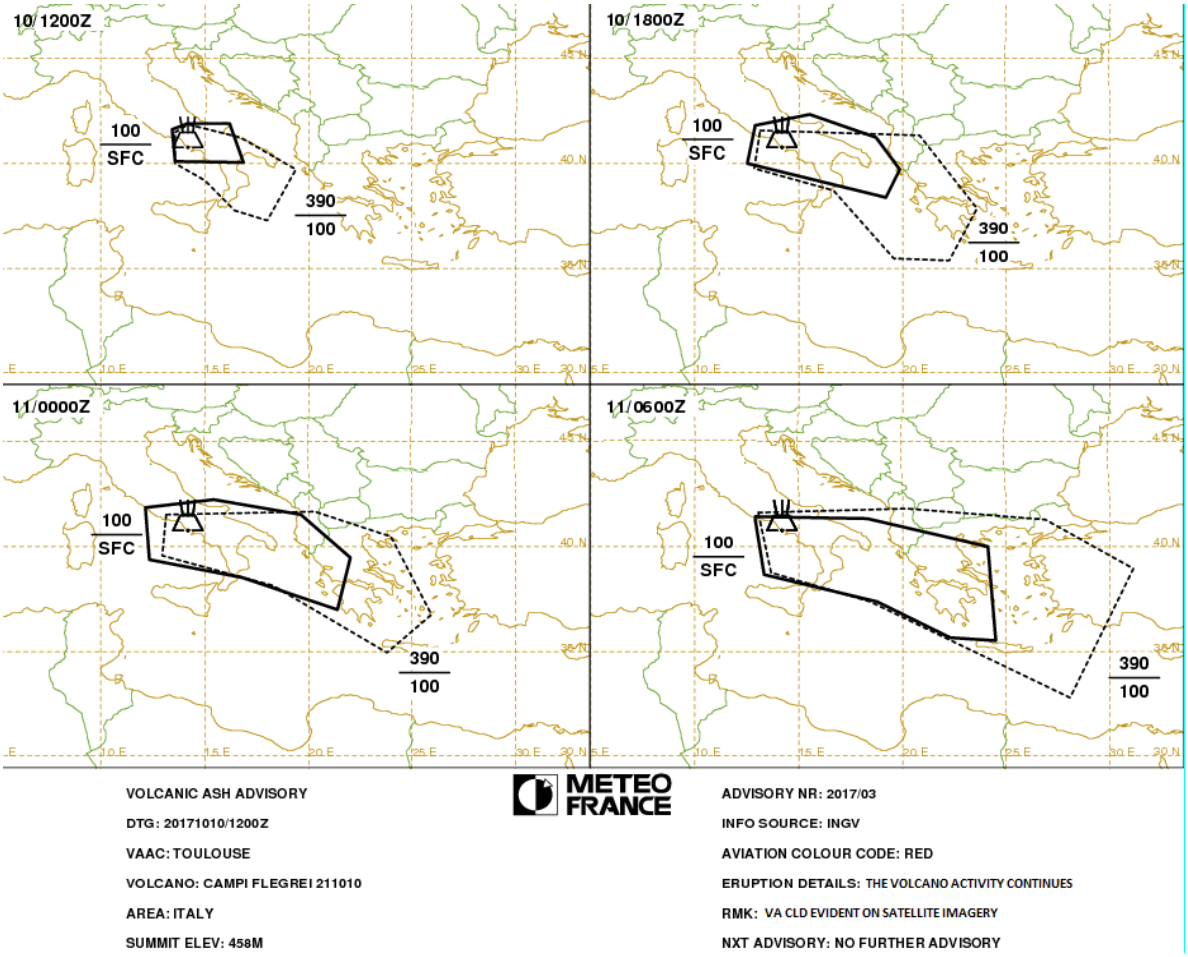
VOLCANIC ASH ADVISORY INFORMATION — GRAPHICAL FORMAT

The volcanic ash advisory information listed in Appendix 6 to Annex V (Part-MET) to Regulation (EU) 2017/373, when prepared in graphical format, should be as specified below and issued using the portable network graphics (PNG) format as specified in point (f) of AMC1 MET.TR.115(a):



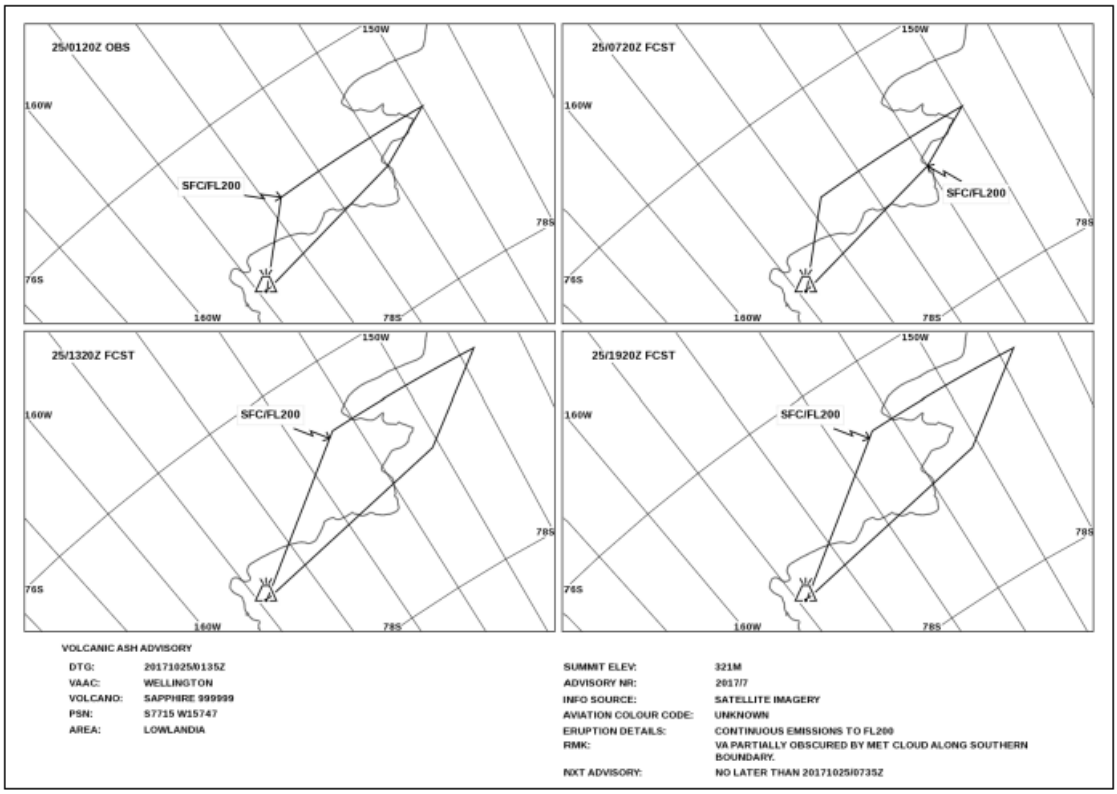
Example of volcanic ash advisory in graphical format from the London VAAC. Mercator projection.

Note: The example above is fictitious.



Example of volcanic ash advisory in graphical format from the Toulouse VAAC. Mercator projection.

Note: The example above is fictitious.



Example of volcanic ash advisory in graphical format from the Wellington VAAC. Polar stereographic projection.

Note: The example above is fictitious.

GM1 MET.TR.265~~(a)~~ Volcanic ash advisory centre~~s~~ ~~(VAACs)~~ responsibilities

EXAMPLES OF ADVISORY FOR VOLCANIC ASH

VA ADVISORY

DTG: 20160614/0925Z

VAAC: LONDON

VOLCANO: HEKLA 372070

PSN: N6359 W01942

AREA: ICELAND

SUMMIT ELEV: 1491M

ADVISORY NR: 2016/002

INFO SOURCE: ICELAND MET OFFICE

AVIATION COLOUR CODE: RED

ERUPTION DETAILS: ERUPTION STARTED AT 0600Z ONGOING, PLUME TO 14KM

OBS VA DTG: 14/0900Z

OBS VA CLD: SFC/FL200 N6421 W02030 - N6421 W01900 - N6315 W01856 ~~-~~

N6303 W02025 - N6421 W02030 FL200/350 N6423 7W02021 - N6423

W01854 - N6309 W01856 - N6309 W02022 - N6423 W02021 FL350/550

N6422 W02023 - N6422 W01856 - N6304 W01854 - N6306 W02023 - N6422 W02023

FCST VA CLD +6HR: 14/1500Z SFC/FL200 N6423 W01822 - N6138 W01826 - N6135 W02205 - N6423 W02213 - N6423 W01822 FL200/350 N6425 W01814 - N6051 W01825 - N6050 W02348 - N6424 W02055 - N6425 W01814 FL350/550 N6419 W01737 - N6109 W01753 - N6116 W02234 - N6423 W02108 - N6419 W01737

FCST VA CLD +12HR: 14/2100Z SFC/FL200 N6449 W02121 - N6441 W01717 - N5921 W01659 - N5922 W02419 - N6449 W02121 FL200/350 N6441 W02002 - N6227 W01556 - N5831 W01927 - N5833 W02629 - N6441 W02002 FL350/550 N6448 W01941 - N6117 W01507 - N5846 W02024 - N5910 W02520 - N6448 W01941

FCST VA CLD +18HR: 15/0300Z SFC/FL200 N6554 W02018 - N6053 W01348 - N5542 W02046 - N5606 W02724 - N6554 W02018 FL200/350 N6446 W01949 - N6039 W01415 - N5535 W02019 - N5538 W02851 - N6446 W01949 FL350/550 N6500 W01928 - N5918 W01407 - N5516 W02235 - N5927 W02532 - N6500 W01928

RMK: T+0 CONFIDENCE HIGH, PLUME HEIGHT OBTAINED BY MOBILE RADAR

NXT ADVISORY: WILL BE ISSUED BY 20160614/1200Z

VA ADVISORY

DTG: 20171010/1200Z

VAAC: TOULOUSE

VOLCANO: CAMPI FLEGREI 211010

PSN: N4049 E01408

AREA: ITALY

SUMMIT ELEV: 458M

ADVISORY NR: 2017/03

INFO SOURCE: INGV

AVIATION COLOUR CODE: RED

ERUPTION DETAILS: THE VOLCANO ACTIVITY CONTINUES

OBS VA DTG: 10/0600Z

OBS VA CLD: SFC/FL100 N4135 E01325 - N4155 E01410 - N4155 E01610 -

N4000 E01655 - N4005 E01335 - N4135 E01325 FL100/390 N4130 E01335 -

N4150 E01410 - N4115 E01645 - N3940 E01925 - N3715 E01800 - N3745

E01630 - N3910 E01500 - N4000 E01335 - N4130 E01335 MOV SE 20KT

FCST VA CLD +6HR: 10/1800Z SFC/FL100 N4150 E01255 - N4220 E01535 -

N4115 E01845 - N3940 E01955 - N3820 E01915 - N4000 E01235 - N4150

E01255 FL100/390 N4135 E01310 - N4120 E02050 - N3750 E02335 - N3520

E02215 - N3525 E01935 - N3840 E01640 - N3945 E01255 - N4135 E01310

FCST VA CLD +12HR: 11/0000Z SFC/FL100 N4150 E01210 - N4215 E01530 -

N4130 E01935 - N3925 E02200 - N3700 E02125 - N3830 E01650 - N3920

E01220 - N4150 E01210 FL100/390 N4130 E01310 - N4140 E02020 - N4030

E02400 - N3645 E02555 - N3455 E02350 - N3810 E01820 - N3935 E01255 -

N4130 E01310

FCST VA CLD +18HR: 11/0600Z SFC/FL100 N4125 E01255 - N4120 E01820 -

N4000 E02405 - N3530 E02430 - N3540 E02220 - N3725 E01845 - N3840

E01320 - N4115 E01255 - N4125 E01255 FL100/390 N4135 E01300 - N4145

E02010 - N4115 E02650 - N3900 E03105 - N3250 E02805 - N3720 E01830 -

N3845 E01340 - N4135 E01300

RMK: VA CLD EVIDENT ON SATELLITE IMAGERY

NXT ADVISORY: NO FURTHER ADVISORY

~~GM1 MET.TR.265(b) Volcanic ash advisory centres (VAACs) responsibilities~~

~~**VOLCANIC ASH ADVISORY — DIGITAL FORM**~~

~~(a) When volcanic ash advisory is disseminated in digital form, this is in addition to the volcanic ash advisory code form.~~

~~(b) Guidance on the information exchange model, GML, and metadata profile is provided in in ICAO Doc 10003 'Manual on the Meteorological Information Exchange Model'.~~

~~AMC1 MET.TR.265(c) Volcanic ash advisory centres (VAACs) responsibilities~~

~~**VOLCANIC ASH ADVISORY INFORMATION — GRAPHICAL FORMAT**~~

~~The volcanic ash advisory information listed in Appendix 6 to Annex V (Part-MET) to Regulation (EU) 2017/373, when prepared in graphical format, should be as specified below.~~

~~[Graphic]~~

~~Example of volcanic ash advisory in graphical format from the London VAAC.~~

~~Note: The example above is fictional.~~

Chapter 5 — Technical requirements for tropical cyclone advisory centres (TCACs)

AMC1 MET.TR.270 Tropical cyclone advisory centre responsibilities

TROPICAL CYCLONE ADVISORY — CODE FORM

Tropical cyclone advisory should be disseminated using:

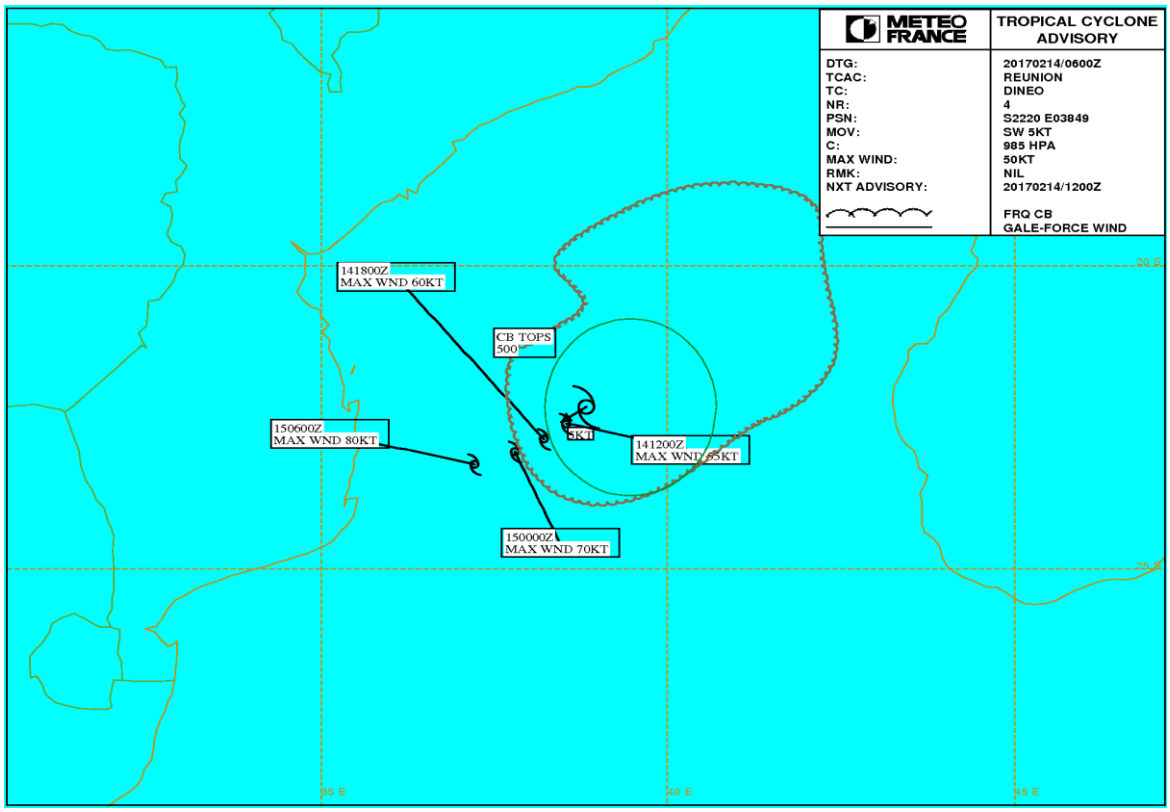
(a) the IWXXM GML form as specified in point (a) of AMC1 MET.TR.115(a);

(b) abbreviated plain language as specified in point (c) of AMC1 MET.TR.115(a).

AMC2 MET.TR.270 Tropical cyclone advisory centre responsibilities

TROPICAL CYCLONE ADVISORY — GRAPHICAL FORMAT

The tropical cyclone advisory information listed in Appendix 7 to Annex V (Part-MET) to Regulation (EU) 2017/373, when prepared in graphical format, should be as specified below and issued using the portable network graphics (PNG) format as specified in point (f) of AMC1 MET.TR.115(a):



Example of tropical cyclone advisory in graphical format from the La Réunion TCAC.

Note: The example above is based on a real event.

GM1 MET.TR.270~~(b)~~ Tropical cyclone advisory centre~~s (TCACs)~~ responsibilities

ADVISORY FOR TROPICAL CYCLONES — EXAMPLE

TC ADVISORY

DTG: 20170214/0600z

TCAC: REUNION

TC: DINEO

ADVISORY NR: 2004/4

OBS PSN: 14/0600Z S2220 E03849

CB: WI 300NM OF TC CENTRE TOP FL500

MOV: SW 05KT

INTST CHANGE: INTSF

C: 985HPA

MAX WIND: 50KT

FCST PSN +06HR: 14/1200Z S2236 E03831

FCST MAX WIND +06HR: 55KT

FCST PSN +12HR: 14/1800Z S2251 E03812

FCST MAX WIND +12HR: 60KT

FCST PSN +18HR: 15/0000Z S2304 E03748

FCST MAX WIND +18HR: 70KT

FCST PSN +24HR: 15/0600Z S2316 E03712

FCST MAX WIND +24HR: 80KT

RMK: NIL

NXT MSG: 20170214/1200Z

~~GM1 MET.TR.270(c) Tropical cyclone advisory centres (TCACs) responsibilities~~

~~**TROPICAL CYCLONE ADVISORY — DIGITAL FORM**~~

~~(a) When a tropical cyclone advisory is disseminated in digital form, this is in addition to the tropical cyclone advisory code form.~~

~~(b) Guidance on the information exchange model, GML, and metadata profile is provided in in ICAO Doc 10003 'Manual on the Meteorological Information Exchange Model'.~~

~~AMC1 MET.TR.270(d) Tropical cyclone advisory centres (TCACs) responsibilities~~

~~**TROPICAL CYCLONE ADVISORY INFORMATION — GRAPHICAL FORMAT**~~

~~The tropical cyclone advisory information listed in Appendix 7 to Annex V (Part-MET) to Regulation (EU) 2017/373, when prepared in graphical format, should be as specified below.~~

AMC2 MET.TR.275(a) World area forecast centre responsibilities

WORLD AREA FORECAST CENTRE GLOBAL GRIDDED FORECASTS — CODE FORM

World area forecast centre global gridded forecasts should be encoded using the GRIB code form as specified in point (d) of AMC1 MET.TR.115(a).

~~GM1 MET.TR.275(a) World area forecast centres (WAFCs) responsibilities~~

~~**GRIB CODE**~~

~~The GRIB code form is contained in the WMO Publication No 306, Manual on Codes, Volume I.2, Part B — Binary Codes.~~

~~GM2 MET.TR.275(a) World area forecast centres (WAFCs) responsibilities~~

~~**BUFR CODE**~~

~~The BUFR code form is contained in the WMO Publication No 306, Manual on Codes, Volume I.2, Part B — Binary Codes.~~

GM1 MET.TR.275(b)(3) World area forecast centre~~s (WAFCs)~~ responsibilities

GRID POINT FORECASTS

(a) Layers centred at a flight level referred to in MET.TR.275(b)(3)~~(v) and~~ (vii) have a depth of 100 hPa.

(b) Layers centred at a flight level referred to in MET.TR.275(b)(3)(viii) have a depth of 100 hPa for flight levels below 240, then 50 hPa for flight levels 240 and above.

GM2 MET.TR.275(b)(3) World area forecast centre responsibilities

GRID POINT FORECASTS

The turbulence referred to in MET.TR.275(b)(3)(viii) encompasses all types of turbulence, including clear-air turbulence and in-cloud turbulence.

GM3 MET.TR.275(b)(3) World area forecast centre responsibilities

GRID POINT FORECASTS

The exact pressure levels (hPa) for MET.TR.275(b)(3) (i), (ii), (iii), (iv), (vii), and (viii) are provided in ICAO Doc 8896 'Manual of Aeronautical Meteorological Practice'.

AMC1 MET.TR.275(c) World area forecast centre responsibilities

WORLD AREA FORECAST CENTRE (WAFC) GLOBAL FORECASTS OF SIGNIFICANT WEATHER — CODE FORM

World area forecast centre (WAFC) global forecasts of significant weather should be disseminated using:

(a) the IWXXM GML form as specified in point (a) of AMC1 MET.TR.115(a);

(b) the BUFR code form as specified in point (e) of AMC1 MET.TR.115(a).

AMC1 MET.TR.275(d) World area forecast centre~~s (WAFCs)~~ responsibilities

MEDIUM-LEVEL SIGWX FORECASTS

The medium-level SIGWX forecasts provided for flight levels between 100 and ~~250~~450 for limited geographical areas should cover the areas as shown in ~~in Table 2 of~~ Appendix 2~~1~~.

GM1 to Appendix 1 'Template for METAR and SPECI'

METAR AND SPECI — EXAMPLES OF ELEMENTS

Non-exhaustive examples of the different elements used in the formulation of METAR and SPECI are provided below.

METAR and SPECI — examples of elements

Note 1: Consult the 'Template for METAR and SPECI' (Appendix 1 to Annex V (Part-MET) to Regulation (EU) 2017/373) to identify the mandatory (M), the conditional (C) or the optional (O) elements.

Note 2: The ranges and resolutions for the numerical elements included in the METAR and SPECI are provided in Appendix 1 to Annex V (Part-MET) to Regulation (EU) 2017/373.

Note 3: The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the METAR and SPECI. They do not correlate with the 'Ref.' column in the 'Template for METAR and SPECI' in Appendix 1 to Annex V (Part-MET) to Regulation (EU) 2017/373. Refer to the 'Element' column when cross-referencing.

Ref.	*Element*	*Examples*
1	Identification of the type of report	METAR METAR COR SPECI
2	ICAO location indicator	YUDO
3	Time of the observation	221630Z
4	Identification of an automated report or a missing report	AUTO NIL
5	Surface wind	24008KT VRB02KT 19012KT 00000KT 140P99KT 12006G18KT 24016G28KT 02010KT 350V070 ///10KT 240//KT /////KT

6	Visibility	0350 7000 9999 0800 //// 2000 1200NW 6000 2800E 6000 2800 CAVOK ([1])
7	Runway visual range	R32/0400 R12R/1700 R16L/0650 R16C/0500 R16R/0450 R17L/0450 R14L/P2000 R10/M0050 R16L///// R10///// R08L///// R08R/0400 R12/1100U R26/0550N R20/0800D R12/0700
8	Present weather	RA HZ VCFG +TSRA FG VCSH +DZ VA VCTS –SN MIFG VCBLSA +TSRASN –SNRA DZ FG +SHSN BLSN UP FZUP //

9	Cloud	FEW015 SCT010 OVC020 BKN016TCU SCT008 BKN025CB BKN025/// //////CB NSC NCD VV005 VV/// BKN/// ///015 ///////// ////// BKN///TCU
10	Air temperature and dew-point temperature	17/10 02/M08 M01/M10 ///10 17/// /////
11	Pressure values	Q0995 Q1022 Q////
12	Supplementary information	REFZRA RETSRA WS R03 WS ALL RWY WS R18C W15/S2 W12/H75 W///S3 WM01/S/ W///H104 W17/H/// W///H/// W///S/

13	Trend forecast	NOSIG BECMG FEW020 TEMPO 25036G50KT BECMG FM1030 TL1130 CAVOK BECMG TL1700 0800 FG BECMG AT1800 9000 NSW BECMG FM1900 0500 +SNRA BECMG FM1100 SN TEMPO FM1130 BLSN TEMPO FM0330 TL0430 FZRA TEMPO TL1200 0600 BECMG AT1200 8000 NSW NSC BECMG AT1130 OVC010 TEMPO TL1530 +SHRA BKN012CB

([1]) Replacing visibility, runway visual range, present weather, and cloud elements, when applicable.

GM1 to Appendix 3 'Template for TAF'

TAF — EXAMPLES OF ELEMENTS

Non-exhaustive examples of the different elements used in the formulation of TAF are provided below.

TAF — examples of elements

Note 1: Consult the 'Template for TAF' (Appendix 3 to Annex V (Part-MET) to Regulation (EU) 2017/373) to identify the mandatory (M), the conditional (C) or the optional (O) elements.

Note 2: The ranges and resolutions for the numerical elements included in TAF are provided in Appendix 3 to Annex V (Part-MET) to Regulation (EU) 2017/373.

Note 3: The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the TAF. They do not correlate with the 'Ref.' column in the 'Template for TAF' of Appendix 3 to Annex V (Part-MET) to Regulation (EU) 2017/373. Refer to the 'Element' column when cross-referencing.

Ref.	*Element*	*Examples*
1	Identification of the type of forecast	TAF TAF AMD TAF COR
2	ICAO location indicator	YUDO
3	Time of issue of the forecast	160000Z
4	Identification of a missing forecast	NIL
5	Days and period of validity of the forecast	0812/0918
6	Identification of a cancelled forecast	CNL
7	Surface wind	24008KT VRB02KT 19010KT 00000KT 140P99KT 24016G28KT
8	Visibility	0350 7000 9999 CAVOK ([1])

9	Forecast weather	RA HZ +TSRA FG –FZDZ PRFG +TSRASN SNRA BR
10	Cloud	FEW010 OVC020 NSC SCT005 BKN012 SCT008 BKN025CB VV005 VV///
11	Temperature	TX25/1013Z TN09/1005Z TX05/2112Z TNM02/2103Z TX22/1115Z TN10/1204Z TX26/1215Z TX26/1215Z TN11/1306Z Tx25/1315Z
12	Expected significant changes to one or more of the above elements during the period of validity of the forecast	TEMPO 0815/0818 25034G50KT TEMPO 2212/2214 17012G26KT 1000 TSRA SCT010CB BKN020 BECMG 3010/3011 00000KT 2400 OVC010 PROB30 1412/1414 0800 FG BECMG 1412/1414 RA TEMPO 2503/2504 FZRA TEMPO 0612/0615 BLSN PROB40 TEMPO 2923/3001 0500 FG FM051230 15008KT 9999 BKN020 BECMG 1618/1620 8000 NSW NSC BECMG 2306/2308 SCT015CB BKN020

([1]) Replacing visibility, runway visual range, forecast weather and cloud elements, when applicable.

GM1 to Appendix 4 'Template for wind shear warnings'

WIND SHEAR WARNINGS — EXAMPLES OF ELEMENTS

Non-exhaustive examples of the different elements used in the formulation of wind shear warnings are provided below.

Wind shear warnings — examples of elements

Note 1: Consult the 'Template for wind shear warnings' (Appendix 4 to Annex V (Part-MET) to Regulation (EU) 2017/373) to identify the mandatory (M), the conditional (C) or the optional (O) elements.

Note 2: The ranges and resolutions for the numerical elements included in wind shear warnings are provided in Appendix 8 to Annex V (Part-MET) to Regulation (EU) 2017/373.

Note 3: The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the wind shear warning. They do not correlate with the 'Ref.' column in the 'Template for wind shear warnings' of Appendix 4 to Annex V (Part-MET) to Regulation (EU) 2017/373. Refer to the 'Element' column when cross-referencing.

Ref.	*Element*	*Example*
1	Location indicator of the aerodrome	YUCC
2	Identification of the type of message	WS WRNG 1
3	Time of origin and validity period	211230 VALID TL 211330 221200 VALID 221215/221315
4	Phenomenon	WS APCH RWY12 MOD WS RWY34 WS IN CLIMB-OUT MBST APCH RWY26 MBST IN CLIMB-OUT
5	Observed, reported or forecast phenomenon	REP AT 1510 B747 OBS AT 1205 FCST
6	Details of the phenomenon	SFC WIND: 320/10KT 200FT-WIND: 360/26KT 30KT LOSS 2NM FNA RWY13
	OR	
7	Cancellation of the wind shear warning	CNL WS WRNG 1 211230/211330

GM1 to Appendix 5 'Template for SIGMET and AIRMET'

SIGMET AND AIRMET — EXAMPLES OF ELEMENTS

Non-exhaustive examples of the different elements used in the formulation of SIGMET and AIRMET are provided below.

SIGMET and AIRMET — examples of elements

Note 1: Consult the 'Template for SIGMET and AIRMET' (Appendix 5 to Annex V (Part-MET) to Regulation (EU) 2017/373) to identify the mandatory (M), the conditional (C) or the optional (O) elements.

Note 2: The ranges and resolutions for the numerical elements included in SIGMET and AIRMET are provided in Appendix 8 to Annex V (Part-MET) to Regulation (EU) 2017/373.

Note 3: The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the SIGMET and AIRMET. They do not correlate with the 'Ref.' column in the 'Template for SIGMET and AIRMET' of Appendix 5 to Annex V (Part-MET) to Regulation (EU) 2017/373. Refer to the 'Element' column when cross-referencing.

Ref.	*Element*	*SIGMET examples*	*AIRMET examples*
1	ICAO location indicator of FIR/CTA	YUCC YUDD	
2	Identification	SIGMET U05 SIGMET I12	AIRMET 2 AIRMET 19 AIRMET B19
3	Validity period	VALID 010000/010400 VALID 221215/221600 VALID 101520/101800 VALID 251600/252200 VALID 152000/160000 VALID 192300/200300	
4	ICAO location indicator of MWO	YUDO– YUSO–	
5	Name of the FIR/CTA	YUCC AMSWELL FIR YUDD SHANLON FIR/UIR UIR FIR/UIR YUDD SHANLON CTA	YUCC AMSWELL FIR/2 YUDD SHANLON FIR
6	IF THE SIGMET IS TO BE CANCELLED, SEE DETAILS AT THE END OF THE TABLE.		
7	Status indicator	TEST EXER	TEST EXER
8	Phenomenon	OBSC TS OBSC TSGR EMBD TS EMBD TSGR FRQ TS FRQ TSGR SQL TS SQL TSGR TC GLORIA PSN N10 W060 CB TC NN PSN S2030 E06030 CB SEV TURB SEV ICE SEV ICE (FZRA) SEV MTW HVY DS HVY SS	SFC WIND 310/40KT SFC VIS 1500M (BR) ISOL TS ISOL TSGR OCNL TS OCNL TSGR MT OBSC BKN CLD 400/3000FT BKN CLD 1000/5000FT BKN CLD SFC/ABV10000FT

		VA ERUPTION MT ASHVAL PSN S15 E073 VA CLD RDOACT CLD	OVC CLD 900/ABV10000FT OVC CLD 1000/5000FT OVC CLD SFC/ABV10000FT ISOL CB OCNL CB FRQ CB ISOL TCU OCNL TCU FRQ TCU MOD TURB MOD ICE MOD MTW
9	Observed *or* forecast phenomenon	OBS OBS AT 1210Z FCST FCST AT 1815Z	
10	Location	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 ENTIRE FIR ENTIRE UIR ENTIRE FIR/UIR ENTIRE CTA WI 400KM OF TC CENTRE WI 250NM OF TC CENTRE WI 30KM OF N6030 E02550	
11	Level	SFC/FL070 FL180 FL050/080 TOP FL390 ABV FL250 TOP ABV FL100	

		TOP FL500 TOP ABV FL500 TOP BLW FL450 SFC/10000FT 8000FT 6000/12000FT ABV 7000FT TOP ABV 9000FT TOP ABV 10000FT 10000FT/FL250 3000M SFC/3000M 2000/3000M 2000M/FL150	
12	Movement *or* expected movement	MOV SE MOV NNW MOV E 20KT MOV WSW 20KT (MOV E 40KMH) STNR	
13	Changes in intensity	INTSF WKN NC	
14	Forecast time	FCST AT 2200Z	—
15	TC forecast position	TC CENTRE PSN N1030 E16015 TC CENTRE PSN N1015 E15030 CB	—
16	Forecast position	N30 W170 N OF N30 S OF S50 AND W OF E170 S OF N46 AND N OF N39 NE OF LINE N35 W020 – N45 W040 SW OF LINE N48 W020 – N43 E010 AND NE OF LINE N43 W020 – N38 E010 WI N20 W090 – N05 W090 – N10 W100 – N20 W100 – N20 W090 ENTIRE FIR ENTIRE UIR ENTIRE FIR/UIR ENTIRE CTA NO VA EXP WI 30KM OF N6030 E02550 WI 150NM OF TC CENTRE	—
17	Repetition of elements	AND	—
	OR		
18	Cancellation of SIGMET/ AIRMET	CNL SIGMET B04 101200/101600 CNL SIGMET A07 251030/251430 VA MOV TO	CNL AIRMET 5 151520/151800

		YUDO FIR	

GM1 to Appendix 6 'Template for advisory for volcanic ash'

ADVISORY FOR VOLCANIC ASH — EXAMPLES OF ELEMENTS

Non-exhaustive examples of the different elements used in the formulation of advisory for volcanic ash are provided below.

Examples of elements

Note 1: Consult the 'Template for advisory for volcanic ash' (Appendix 6 to Annex V (Part-MET) to Regulation (EU) 2017/373) to identify the mandatory (M), the conditional (C) or the optional (O) elements.

Note 2: The ranges and resolutions for the numerical elements included in advisory for volcanic ash are provided in Appendix 8 to Annex V (Part-MET) to Regulation (EU) 2017/373.

Note 3: The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the advisory for volcanic ash. They do not correlate with the 'Ref.' column in the 'Template for advisory for volcanic ash' of Appendix 6 to Annex V (Part-MET) to Regulation (EU) 2017/373. Refer to the 'Element' column when cross-referencing.

Ref.	*Element*	*Examples*	
1	Identification of the type of message	VA ADVISORY	
2	Status indicator	STATUS:	TEST EXER
3	Time of origin	DTG:	20080923/0130Z
4	Name of VAAC	VAAC:	TOKYO
5	Name of volcano	VOLCANO:	KARYMSKY 300130 UNNAMED UNKNOWN
6	Location of volcano	PSN:	N5403 E15927 UNKNOWN
7	State *or* region	AREA:	RUSSIA UNKNOWN
8	Summit elevation	SUMMIT ELEV:	1536M SFC
9	Advisory number	ADVISORY NR:	2008/4
10	Information source	INFO SOURCE:	HIMAWARI-8 KVERT KEMSD
11	Colour code	AVIATION COLOUR CODE:	RED
12	Eruption details	ERUPTION DETAILS:	ERUPTION AT 20080923/0000Z FL300 REPORTED NO ERUPTION – RE-SUSPENDED VA ([1]) UNKNOWN
13	Time of observation (*or* estimation) of volcanic ash clouds	OBS VA DTG:	23/0100Z

14	Observed *or* estimated volcanic ash clouds	OBS VA CLD:	FL250/300 N5400 E15930 – N5400 E16100 – N5300 E15945 – N5400 E15930 MOV SE 20KT SFC/FL200 N5130 E16130 – N5130 E16230 – N5230 E16230 – N5230 E16130 MOV SE 15KT TOP FL240 MOV W 40KMH VA NOT IDENTIFIABLE FM SATELLITE DATA WIND FL050/070 180/24KT
15	Forecast height and position of the volcanic ash clouds (+6 HR)	FCST VA CLD +6 HR:	23/0700Z FL250/350 N5130 E16030 – N5130 E16230 – N5330 E16230 – N5330 E16030 SFC/FL180 N4830 E16330 – N4830 E16630 – N5130 E16630 – N5130 E16330 NO VA EXP NOT AVBL NOT PROVIDED
16	Forecast height and position of the volcanic ash clouds (+12 HR)	FCST VA CLD +12 HR:	23/1300Z SFC/FL270 N4830 E16130 – N4830 E16600 – N5300 E16600 – N5300 E16130 – N4830 E16130 NO VA EXP NOT AVBL NOT PROVIDED
17	Forecast height and position of the volcanic ash clouds (+18 HR)	FCST VA CLD +18 HR:	23/1900Z NO VA EXP NOT AVBL NOT PROVIDED
18	Remarks	RMK:	LATEST REP FM KVERT (0120Z) INDICATES ERUPTION HAS CEASED. TWO DISPERSING VA CLD ARE EVIDENT ON SATELLITE IMAGERY RE-SUSPENDED VA ([2]) NIL
19	Next advisory	NXT ADVISORY:	20080923/0730Z NO LATER THAN nnnnnnnn/nnnnZ NO FURTHER ADVISORIES WILL BE ISSUED BY nnnnnnnn/nnnnZ

([1]) To be included (as free text) only for those situations where volcanic ash has been re-suspended.

([2]) To be included (as free text) where space in the *Remarks* section allows.

GM1 to Appendix 7 'Template for advisory for tropical cyclones'

ADVISORY FOR TROPICAL CYCLONES — EXAMPLES OF ELEMENTS

Non-exhaustive examples of the different elements used in the formulation of advisory for tropical cyclones are provided below.

Tropical cyclone advisory — examples of elements

Note 1: Consult the 'Template for advisory for tropical cyclones' (Appendix 7 to Annex V (Part-MET) to Regulation (EU) 2017/373) to identify the mandatory (M), the conditional (C) or the optional (O) elements.

Note 2: The ranges and resolutions for the numerical elements included in tropical cyclone advisory are provided in Appendix 8 to Annex V (Part-MET) to Regulation (EU) No 2017/373.

Note 3: The row numbers in the 'Ref.' column are included only for clarity and ease of reference, and are not part of the advisory for tropical cyclones. They do not correlate with the 'Ref.' column in the 'Template for advisory for tropical cyclones' of Appendix 7 to Annex V (Part-MET) to Regulation (EU) 2017/373. Refer to the 'Element' column when cross-referencing.

Ref.	*Element*	*Examples*	
1	Identification of the type of message	TC ADVISORY	
2	Status indicator	STATUS:	TEST EXER
3	Time of origin	DTG:	20040925/1900Z
4	Name of TCAC	TCAC:	YUFO MIAMI
5	Name of tropical cyclone	TC:	GLORIA
6	Advisory number	ADVISORY NR:	2004/13
7	Observed position of the centre	OBS PSN:	25/1800Z N2706 W07306
8	Observed CB cloud	CB:	WI 250NM OF TC CENTRE TOP FL500 NIL
9	Direction and speed of movement	MOV:	NW 20KMH
10	Changes in intensity	INTST CHANGE:	INTSF
11	Central pressure	C:	965HPA
12	Maximum surface wind	MAX WIND:	43KT
13	Forecast of centre position (+6 HR)	FCST PSN +6 HR:	25/2200Z N2748 W07350
14	Forecast of maximum surface wind (+6 HR)	FCST MAX WIND +6 HR:	43KT
15	Forecast of centre position (+12 HR)	FCST PSN +12 HR:	26/0400Z N2830 W07430
16	Forecast of maximum surface wind (+12 HR)	FCST MAX WIND +12 HR:	43KT
17	Forecast of centre position (+18 HR)	FCST PSN +18 HR:	26/1000Z N2852 W07500
18	Forecast of maximum surface wind (+18 HR)	FCST MAX WIND +18 HR:	41KT
19	Forecast of centre position (+24 HR)	FCST PSN +24 HR:	26/1600Z N2912 W07530
20	Forecast of maximum surface wind (+24 HR)	FCST MAX WIND +24 HR:	39KT
21	Remarks	RMK:	NIL
22	Expected time of issuance of next advisory	NXT MSG:	20040925/2000Z