

	<p style="text-align: center;">TANZANIA CIVIL AVIATION AUTHORITY DIRECTORATE OF SAFETY REGULATIONS AIR NAVIGATION INSPECTORATE</p>	<p>Revision: 1</p> <p style="text-align: center;">Advisory Circular</p>
<p>Document No.: TCAA/QSP/SR/AC/ANI - 38</p>	<p>Title: Guidance on Technical Specifications for Meteorological reports for air Navigation Services</p>	<p>Page 1 of 14</p>

1.0 PURPOSE

- 1.1 The purpose of this Advisory Circular is to guide the Aeronautical Meteorological Service Provider (AMSP) in preparation and issuance of meteorological reports in accordance with the technical specifications in the Civil Aviation (Meteorological Service for International Air Navigation) Regulations.

2.0 REFERENCES.

- 2.1 The Civil Aviation (Meteorological Services for International Air Navigation) Regulations. 2017 (as amended)
- 2.2 The Civil Aviation (Meteorological Service for International Air Navigation) (Amendment) Regulations, 2023
- 2.3 ICAO Doc 8896 – Manual of Aeronautical Meteorological Practice.
- 2.4 WMO No. 306 Manual on codes

3.0 GUIDANCE AND PROCEDURES

3.1 General

- 3.1.1 Observations of meteorological conditions are made by means of instruments and visual estimation used for landing and take-off, en-route navigation, and flight performance, and as a basis for forecasting. Those observations used primarily for aircraft operations are called “Operational Meteorological (OPMET) information” while those used primarily for forecasting purposes are considered to be “basic meteorological data”. OPMET information includes aerodrome reports, landing forecasts, aerodrome forecasts, special aircraft observations, SIGMETs and space weather advisories and WAFS forecasts.
- 3.1.2 At aerodromes, routine observations are made and reported at hourly or half-hourly intervals depending on the AFI regional air navigation agreement. When required as a result of specified operationally significant changes in the meteorological conditions, special observations and reports are made whenever such changes occur between routine observations.
- 3.1.3 Observational data are combined into a report for dissemination at the local aerodrome or beyond. Depending on their use, the reports are presented in two forms, i.e., as local routine reports (or MET REPORTS) and local special reports (or SPECIAL) in abbreviated plain language intended for dissemination and use at the aerodrome of origin or as an aerodrome routine meteorological report (METAR) and aerodrome special meteorological report (SPECI) intended for dissemination and use beyond the aerodrome of origin.

Document No.: TCAA/QSP/SR/AC/ANI - 38	Title: Guidance on Technical Specifications for Meteorological reports for air Navigation Services	Page 2 of 14
--	---	--------------

METAR	HTDA*	011900Z	AUTO	22015G25KT
Report type	Station identifier	Date and time of report	Report Modifier	Surface wind
9000	R17/0300M	+TSRA	OVC010CB	23/19
Visibility	Runway Visual Range (RVR)	Present Weather	Cloud conditions	Temperature and Dew Point
Q1020	RMK NO SIG			
Altimeter Reading	Remarks			

3.1.4 This Circular therefore describes the specifications for meteorological reports that includes METAR, SPECI, TAF, SIGMET, aerodrome warnings and wind shear warnings and alerts, in accordance with the technical specification and detailed criteria in the Civil Aviation (Meteorological Service for International Air Navigation) Regulations.

3.2 Specifications for Aviation Routine Reports (METAR) and Special Reports (SPECI)

3.2.1 The AMSP shall prepare and issue routine and special meteorological reports for aviation users in form of METAR and SPECI using technically specified coded formats as prescribed in the Civil Aviation (Meteorological Service for Air Navigation) Regulations.

3.2.2 Local routine reports, local special reports, METAR and SPECI shall contain the following elements in the order indicated:

- a) identification of the type of report.
- b) location indicator; and time of the observation;
- d) identification of an automated or missing report, when applicable;
- e) surface wind direction and speed;
- f) visibility; runway visual range, when applicable;
- h) present weather.
- i) cloud amount, cloud type (only for cumulonimbus and towering cumulus clouds) and height of cloud base or, where measured, vertical visibility;
- j) air temperature and dew-point temperature; and
- k) QNH and, when applicable, QFE (QFE included only in local routine and special reports).

3.2.3 The coded and/or plain language information elaborating on data in the body may be appended to the end of the METAR as "remarks" as specified in Table 1 below.

3.3

Table 1: METAR/SPECI Coding and reporting Format

Note: * HTDA is used as example

3.2.3 The interpretation and decoding of the METAR described in Table 1 shall be as below;

Document No.: TCAA/QSP/SR/AC/ANI - 38	Title: Guidance on Technical Specifications for Meteorological reports for air Navigation Services	Page 3 of 14
--	---	--------------

- 3.2.3.1 Identification of Type of Report. METAR or SPECI, should precede the body of all reports to specify that the report is an Aviation Routine Weather Report (METAR) or Special Weather Report (SPECI)
- 3.2.3.2 The Location indicator. The Location indicator in ICAO format should be included in all reports to identify the location to which the coded report applies. The ICAO airport code is a four-letter alphanumeric code designating each airport around the world for example HTDA is Dar Es Salaam.
- 3.2.2.3 The time of observation. The time of observation is coded in all reports as follows: the day of the month is the first two digits, followed by the hour and the minutes. The date and time group always ends with a Z, indicating universal time (UTC). For example, METAR HTDA 011900Z would be disseminated as the 1900 UTC routine report for station HTDA, taken on the 1st of the month at 1900 UTC.
- 3.2.2.4 The identification of an automated or Corrected report. The report identification AUTO identifies that the METAR/SPECI as a fully automated report with no human intervention or oversight. In the event of a corrected METAR or SPECI, the report modifier COR is substituted for AUTO. For missing report is coded with ///
- 3.2.2.5 The surface wind direction and speed. The surface wind direction and speed indicate the direction from which the wind originates. In the wind group [22015G25], the wind direction is coded as the first three digits (220). It is coded in tens of degrees relative to true north using three figures and wind directions less than 100 degrees are preceded with a 0. For example, a wind direction of 90 degrees is coded as 090. Immediately following the wind direction is the wind speed coded in two or three digits and coded in whole knots (KT). When wind speeds are less than 10 kts, a leading 0 is used to maintain at least a two-digit code. For example, a wind speed of 8 kts will be coded 08KT.
- Examples:
05008KT = Wind 50 degrees at 8 kts and
15014KT = Wind 150 degrees at 14 kts
- 3.2.2.5.1 Wind Gusts. The wind gusts should be coded in two or three digits immediately following the wind speed. For example, a wind originating from the west at 15 knots with gusts to 25 kts would be coded as 27015G25KT.
- 3.2.2.5.2 Variable wind. The wind directional variability is coded in a clockwise direction and consists of the extremes of the wind directions separated by a V. For example, if the wind direction is recorded as 210 degrees and is variable from 180 degrees to 240 degrees at 10 kts, it should be coded as 21010KT 180V240.
- 3.2.2.5.3 Calm wind. When no motion of air is detected, the wind is reported as calm and a calm wind is coded as 00000KT.
- 3.2.2.6 Visibility. The visibility group is coded as the surface visibility in metres. For example, a visibility of 9 000 metres is coded 9000. When the visibility is greater than 10000 metres, it is

Document No.: TCAA/QSP/SR/AC/ANI - 38	Title: Guidance on Technical Specifications for Meteorological reports for air Navigation Services	Page 4 of 14
--	---	--------------

coded as 9999. For local routine and special local report, the visibility is given in plain language (e.g. 800 metres, 5 kilometres) and when the visibility is greater than 10000 metres, its given as 10 kilometres.

- 3.2.2.7 Runway Visual Range (RVR), when applicable. The AMSP should code RVR in the routine and special reports using initial R as code for runway and is followed by the runway number. Next is a solidus (/) followed by the visual range in metres and then m completes the RVR report. For example, an RVR value for Runway 17 is 800 m; This should be coded as R17/0800m. When the RVR varies by more than one reportable value, the lowest and highest values will be shown with V between them, indicating variable conditions. Example, the RVR for Runway 17 varying between 600m and 900m should be coded as R17/0600V0900m. When RVR is greater 2000m, it should be reported as P2000. For example, for runway 17, when the RVR is greater 2000m, its coded as R17/P2000.
- 3.2.2.8 Present Weather Group. When coding present weather, separate groups are used for each type of present weather. Each group is separated from the other by a space. The METAR/SPECI reports should not contain more than three present weather groups. When more than one type of present weather is reported at the same time, present weather is reported in order of decreasing dominance (i.e., the most dominant type reported first): The intensity qualifiers used to report present weather are light, moderate, and heavy; they are coded with precipitation types. The descriptor qualifiers are; low drifting (DR), blowing (BL), shower(s) (SH), thunderstorm (TS) and freezing (FZ) as indicated in Table 2 below;

Table 2: Examples of present weather reporting

Present weather Code	Present weather in plain language
-DZ	Light drizzle
-RA	Light rain
GR BR	(Moderate) hail, mist
FG	Fog
SHRA	(Moderate) showers and rain
VCBLDU	Blowing dust in the vicinity
-RAGR FG	Light rain and (light) GR, fog
TS	Thunderstorm (without precipitation)
+TSRA	Severe Thunderstorm and heavy rain
+FC TSRAGR	Funnel cloud, thunderstorms, (moderate) rain, hail

- 3.2.2.9 Cloud Group. The descriptions of this group include either cloud cover, vertical visibility or clear skies. This group should be based on the amount of cloud cover (the first three letters) followed by the height of the base of the cloud cover (final three digits). No space is between the amount of cloud cover and the height of the cloud layer. The cloud condition is coded in ascending order and ends at the first overcast layer. The codes for cloud cover are in Table 3 below.

3.2.2.9.1 Vertical visibility. The code for vertical visibility is VV, followed by the vertical visibility distance visible in feet (FT). No space is between the group identifier (VV) and the vertical visibility (distance in FT). Related to VV are the Clear skies that are coded in the format SKC. When SKC is used, an observer indicates no cloud layers are present. Each coded layer is separated from the others by a space. The codes FEW, SCT, BKN and OVC should be followed (without a space) by height of the layer. Example FEW020, SCT120, BKN150 or OVC080. Interpretations of the codes is in Table 3 below.

Table 3: METAR/SPECI reporting Codes for cloud cover.

Cloud amount descriptor	Meaning	Cloud coverage
VV	Vertical Visibility	8 Oktas
CAVOK	Cloud ceiling and visibility OK	No cloud below 5000ft, No CB, No TCU
NSC	No cloud of operational significance	No cloud below 5000ft and visibility may be less than 10km
SKC	Clear sky	0 Oktas
FEW	Few cloud cover	0 to 2 Oktas
SCT	Scattered cloud cover	3 to 4 Oktas
BKN	Broken cloud cover	5 to 7 Oktas
OVC	Overcast	8 Oktas

Note: For both METAR/SPECI reports, cumulonimbus (CB) or towering cumulus (TCU) is appended to the associated layer. For example, a scattered layer of towering cumulus at 1,500FT should be coded as SCT015TCU and would be followed by a space if there were additional higher cloud layers to code.

3.2.2.10 Temperature/Dewpoint Group. The code for temperature and dewpoint is two digits rounded to the nearest whole degree Celsius. For example, a temperature of 0.3 °C would be coded as 00. If temperature record is not available, the entire temperature/dewpoint group is not coded. If dewpoint is not available, temperature is coded followed by a solidus (/) and no entry is made for dewpoint. For example, a temperature of 21.6 °C and missing dewpoint would be coded as 22/.

3.2.2.11 The altimeter setting group. The AMSP should ensure that altimeter settings group starts with code Q and this is followed by the four-digit group representing the pressure in hectopascals (hPa). The decimal point is not coded. For example, an altimeter setting of 1020.3 hPa should be coded as Q1020 and altimeter setting of 1022.7 hPa should be coded as Q1022.

3.2.2.12 Remarks; The AMSP should include at the end of METAR and SPECI, remarks when appropriate. Remarks are separated from the body of the report by the contraction RMK. When no remarks are necessary, the contraction RMK is not required.

Document No.: TCAA/QSP/SR/AC/ANI - 38	Title: Guidance on Technical Specifications for Meteorological reports for air Navigation Services	Page 6 of 14
--	---	--------------

3.2.2.13 Volcanic eruptions; The AMSP should code volcanic eruption report in plain language in the Remarks section of the METAR or SPECI when appropriate and the volcanic eruption report should contain the following information, when such data is available:

- ☐ Name of volcano.
- ☐ Latitude and longitude or the direction and approximate distance from the station.
- ☐ Date/Time (UTC) of the eruption.
- ☐ Size description, approximate height, and direction of movement of the ash cloud;
- ☐ Any other pertinent data about the eruption.

For example, a remark on a volcanic eruption is below:

RMK MT. MUHAVURA VOLCANO 600 KILOMETRES SW ERUPTED AT 231505 LARGE ASH CLOUD EXTENDING TO APRX 30000 FT MOVING NE.

3.2.2.14 Trend Forecasts; The Forecasters at the AMSP should in the Remarks section append the trend forecast, consisting of a concise statement of the expected significant changes in the meteorological conditions at that aerodrome to a METAR or SPECI. The period of validity of a trend forecast shall not exceed two (2) hours from the time of the report which forms part of the landing forecast.

3.2.2.15 Supplementary information; In local routine reports, local special reports, METAR and SPECI, the following recent weather phenomena, i.e., 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, should be reported such as;

- (i) moderate or heavy precipitation (including showers thereof)
- iii) thunderstorm and dust storms
- iv) funnel cloud (waterspout)
- v) volcanic ash

3.3 Specifications for Special Weather Report (SPECI)

3.3.1 The AMSP should report a SPECI as an unscheduled report taken when any of criteria in Table 4 are observed during the period between hourly reports. The SPECI reports should contain all data elements found in a METAR and should be issued immediately the relevant criteria are observed.

3.3.2 The AMSP should ensure that a METAR is issued instead of a SPECI whenever the SPECI reporting criteria are met at the time of issuing routine METAR.

S

Table 4: SPECI reporting criteria.

1	Wind shift	Wind direction changes by 45 degrees or more, in less than 15 minutes and the wind speed is 10 knots or more throughout the wind shift.
2	Visibility	Surface visibility, as reported in the body of the report, decreases to less than, or if below, increases to equal to or exceeding: <ul style="list-style-type: none"> • 5 kilometres • 3 kilometres • 1.5 kilometres

Document No.: TCAA/QSP/SR/AC/ANI - 38	Title: Guidance on Technical Specifications for Meteorological reports for air Navigation Services	Page 7 of 14
--	---	--------------

		<ul style="list-style-type: none"> The lowest standard instrument approach procedure minimum as published in the AIP Instrument Procedures. If none published, use 800 metres.
3	Runway Visual Range (RVR)	The highest value from the designated RVR runway decreases to less than, or if below, increases to, equal to or exceeding 800 metres during the preceding 10 minutes, the meteorological authority may not report a SPECI based on RVR.
4	Funnel cloud or waterspout	Where applicable, SPECI is issued immediately when a funnel cloud or waterspout; <ul style="list-style-type: none"> is observed Disappears, or ends
5	Severe Thunderstorm	SPECI is issued when a severe thunderstorm is observed, however, SPECI is not required to report the beginning of a new thunderstorm if one is currently reported and SPECI is issued when severe thunderstorm ends
6	Precipitation	Hail begins or ends Heavy showers begins, ends or changes intensity
7	Cloud ceiling	The cloud ceiling (rounded to reportable values) forms or dissipates below, decreases to less than, or if below, increases to equal to or exceeding: <ul style="list-style-type: none"> • 3,000 feet; • 1,500 feet; • 1,000 feet; • 500 feet • The lowest standard instrument approach procedure minimum as published in the AIP Instrument Procedures. If none published, use 200 feet.
8	Cloud/sky condition	A layer of clouds or obscurations aloft is present below 1,000 feet and no layer aloft reported below 1,000 feet in the preceding METAR or SPECI.
9	Volcanic eruption	When an eruption is first noted.

3.4 Automated Observation

3.4.1 The AMSP should ensure that measurements derived from instruments and algorithms without human input in form of Automated Weather Observing System (AWOS) are reported in METAR and SPECI with modifier of AUTO in the report.

3.4.2 The AMSP should ensure that in augmented observations where the automated observing system have input and oversight by human weather observers that may include visibility, cloud amounts, type and cloud height; modifier AUTO is not used in the meteorological reports.

3.5 Dissemination of Meteorological reports

3.5.1 METAR and SPECI shall be disseminated to international OPMET databanks, and the centres designated by AFI regional air navigation agreement for the operation of aeronautical fixed service Internet-based services.

3.5.2 METAR and SPECI shall be disseminated to other aerodromes in accordance with the AFI regional air navigation agreement.

Document No.: TCAA/QSP/SR/AC/ANI - 38	Title: Guidance on Technical Specifications for Meteorological reports for air Navigation Services	Page 8 of 14
--	---	--------------

3.5.3 SPECI representing a deterioration or improvement in meteorological conditions shall be disseminated immediately after the observation.

3.6 Terminal Aerodrome Forecasts (TAF)

3.6.1 The AMSP shall prepare the TAF, in accordance with AFI regional air navigation agreement, at the aerodrome meteorological office designated by the meteorological authority.

3.6.2 The AMSP should prepare and issue Terminal Aerodrome Forecast (TAF) as a concise statement of the expected meteorological conditions significant to aviation for a specified time period within 8 nautical miles (NM) of the centre of the airport's runway.

3.6.2 The AMSP should ensure that the TAF use same weather codes found in METAR weather reports (See Paragraph 3.2). The AMSP should use technical specifications for TAF as given in Table 5 below.

3.6.3 Aerodrome forecasts and amendments thereto shall be issued as TAF and include the following information in the order indicated:

- a) identification of the type of forecast;
- b) location indicator;
- c) time of issue of forecast;
- d) identification of a missing forecast, when applicable;
- e) date and period of validity of forecast;
- f) identification of a cancelled forecast, when applicable;
- g) surface wind;
- h) visibility;
- i) weather;
- j) cloud; and
- k) expected significant changes to one or more of these elements during the period of validity.

Table 5: Generic Format of Terminal Aerodrome Forecasts (TAF)

Identification of Type of TAF Report	TAF or TAF AMD or TAF COR		
CCCC	YYGGggZ Y	Y1Y1G1G1/Y2Y2G2G2	dddfGfmfmKT
Location Indicator	Date/time of forecast origin group	Date/period of Validity	Surface wind Group
VVVV	w'w' or NSW	NsNsNshshs or VVhshshs or SKC	
Visibility group	Significant weather group	Cloud and vertical visibility group	
TTGGgg	FMY1Y1GGgg	TEMPO Y1Y1GG/YeYeGeGe	PROB30 Y1Y1GG/YeYeGeGe

Forecast change indicator group	From group	Temporary group	Probability group
---------------------------------	------------	-----------------	-------------------

- 3.6.4 The AMSP shall use interpretation and decoding of the TAF described in Table 5 as below
- 3.6.5 Identification of type of Report (TAF or TAF AMD or TAF COR). The AMSP should ensure TAF has the report-type header appearing as the first element in the TAF and is produced in three forms:
- (i) a routine forecast (TAF),
 - (ii) an amended forecast (TAF AMD) or
 - (iii) a corrected forecast (TAF COR).
- 3.6.6 The AMSP should ensure that TAFs are amended whenever they become, in the forecaster's judgment, unrepresentative of existing or expected conditions, particularly regarding those elements and events significant to aircraft and airports operations.
- 3.6.7 Location Identifier (CCCC). The AMSP should include after the report-type header the line containing location identifier, with four-letter ICAO location identifier. Examples: HTDA Dar Es Salaam, HUEN Entebbe; HSSJ Juba; HKJK Jomo Kenyatta, and HRYR Kigali,
- 3.6.8 Date/Time of Forecast Origin Group (YYGGggZ). The AMSP should include, the date/time of forecast origin group (YYGGggZ) following the TAF location identifier. This group should contain the day of the month in two 2 digits (YY) and the time in four digits (GGgg in hours and minutes) in which the forecast is completed and ready for transmission, with a Z appended to denote UTC. The AMSP should issue the TAF at specified time and not earlier than one hour prior to the beginning of its validity period.
- Example: 061740Z is the TAF issued on the 6th day of the month at 1740 UTC.
- 3.6.9 Validity Period (Y1Y1G1G1/Y2Y2G2G2). The AMSP should ensure that the TAF validity period (Y1Y1G1G1/Y2Y2G2G2) follows the date/time of forecast origin group. The AMSP should issue the scheduled 24-hour or 30-hour four times per day, at 0000, 0600, 1200, and 1800Z. The first two digits (Y1Y1) are the day of the month for the start of the TAF. The next two digits (G1G1) are the starting hour (UTC). Y2Y2 is the day of the month for the end of the TAF and the last two digits (G2G2) are the ending hour (UTC) of the valid period. A forecast period that begins at midnight UTC is annotated as 0000. If the end time of a validity period is at midnight UTC, it is annotated as 2400.

Example 1: 0000Z TAF issued on the 9th of the month and valid for 24 hours would have a validity period of 0900/1024. Whenever an amended TAF (TAF AMD) is issued, it supersedes and cancels the previous TAF.

Example 2:

1512/1612 TAF is valid from the 15th day at 1200 UTC until the 16th day of the month at 1200 UTC.

3.6.10 Surface wind Group (ddffGfmfmKT). The AMSP should ensure that initial time period and any subsequent groups begin with a mean surface wind forecast (ddffGfmfmKT) for that period. Wind forecasts are expressed as the mean three-digit direction (ddd -relative to true north) from which the wind is blowing, rounded to the nearest 10 degrees, and the mean wind speed in knots (ff) for the time period. If wind gusts are forecasted, they are indicated immediately after the mean wind speed by the letter G, followed by the peak gust speed expected. KT is appended to the end of the wind forecast group. Any wind speed of 100 KT or more will be encoded as P99KT. Calm winds are encoded as 00000KT. When the prevailing surface wind direction is variable, the forecast wind direction is encoded as VRBffKT. For Convective activity, the wind group may be encoded as VRBffGfmfmKT, where Gfmfm is the maximum expected wind gusts. VRB is not used in the Non-Convective LLWS group. Wind coding is given in Table 6 below.

Table 6: Coding the wind reports:

Coded wind	Meaning
23010KT	Wind from 230 degrees “true” (southwest) at 10 knots.
28020G35KT	Wind from 280 degrees “true” (west) at 20 knots gusting to 35 knots.
VRB05KT	Wind variable at 5 knots. This example depicts a forecast for light winds that are expected to be variable in direction
VRB15G30KT	Wind variable at 15 knots gusting to 30 knots. This example depicts winds that are forecast to be variable with Convective activity.
00000KT	Wind calm
090P99KT	Wind from 90 degrees (easterly) at wind speed exceeding 100KT

3.6.11 Visibility Group (VVVV). The AMSP should ensure that the initial time period and any subsequent groups include a visibility forecast (VVVV) in kilometres is appended. Visibility greater than 10 kilometres should be encoded as 9999. If the visibility is not expected to be the same in different directions, prevailing visibility is used.

3.6.12 The AMSP should use the code “CAVOK” (Cloud ceiling and Visibility OK) to replace the visibility, weather and cloud condition groups if all of the following conditions are forecasted: Visibility of 10 kilometres (km) or more, no clouds below 1500 meters (m) or (5,000 ft) or below the highest minimum sector altitude (whichever is greater), no cumulonimbus and no significant weather phenomena.

3.6.13 Significant Weather Group (w'w' or NSW). The AMSP should ensure that the significant weather group (w'w' or NSW) consists of the appropriate qualifier(s) and weather phenomenon codes of NSW (no significant weather). NSW should not be used in the initial forecast time period or FM groups. The exceptions are volcanic ash (VA), low drifting dust (DRDU) or shallow fog (MIFG).

3.6.14 Thunderstorm Descriptor (TS). The AMSP should ensure that Thunderstorm descriptor (TS) is used differently than other descriptors in the following cases:

- (a) When non-precipitating thunderstorms are forecast, TS should be encoded as the sole significant weather phenomenon; and
- (b) When forecasting thunderstorms with precipitation (TSRA), the TS descriptor is included first, followed by the intensity and weather phenomena. Example: +TSRA

3.6.15 Cloud Group (NsNsNshshshs). The AMSP should use the cloud group (NsNsNshshshs) to forecast cloud amount and should be coded as indicated in Table 6.

Table 6. Cloud amounts coding in TAF

Cloud amount descriptor	Cloud coverage
SKC	0 Oktas
FEW	0 to 2 Oktas
SCT	3 to 4 Oktas
BKN	5 to 7 Oktas
OVC	8 Oktas

Note. When 0 oktas of cloud coverage are forecasted, the cloud group should be replaced by SKC.

3.6.16 Forecast Change Indicator Groups. The AMSP should ensure that forecast change indicator groups codes are used to subdivide the forecast period (24 or 30 hours) according to significant changes in the weather. The AMSP should ensure that forecast change indicators FM, TEMPO and PROB are used when a change in any or all the elements forecasted are expected. The change group FMYGGgg (coded as "FM") should be used to indicate when prevailing conditions are expected to change significantly over a period of less than 1 hour. The change-indicator group TEMPO YYGG/YeYeGeGe should be used to indicate temporary fluctuations to forecast meteorological conditions that are expected to:

- (a) Have a high percentage (greater than 50 percent) probability of occurrence.
- (b) Last for one hour or less in each instance; and
- (c) In the aggregate, cover less than half of the period

The probability group, PROB30 YYGG/YeYeGeGe, should only be used by forecasters to forecast a low probability occurrence (30 percent chance) of a thunderstorm or precipitation event and its associated weather elements (wind, visibility, and/or cloud condition) at an airport or within its vicinity

3.6.17 Example of TAF valid for 24-hours and interpretation in Table 7 below

TAF

HTDA 111140Z 1112/1212 13012KT P6SM BKN100 WS020/35035KT

TEMPO 1112/1114 7000 BR

FM111500 16015G25KT 9999 SCT040 BKN250

FM120000 14012KT 9999 BKN080 OVC150 PROB30 1200/1204 7000 TSRA BKN030CB

FM120400 14008KT 9999 SCT040 OVC080 TEMPO 1204/1208 7000 TSRA OVC030CB=

WS020/35035KT	Wind shear at 2,000 ft, wind from 350 at 35 KT
TEMPO 1112/1114	Temporary conditions between the 11th day of the month at 1200 UTC and the 11th day of the month at 1400 UTC
7000	Visibility is 7 km
BR	Mist

FM111500	From the 11th day of the month at 1500 UTC
16015G25KT	Wind 160 at 15KT gusting to 25 KT
9999	Visibility greater than 10 km
SCT040	cloud ceiling at 4,000FT scattered
BKN250	cloud ceiling at 25,000FT broken
FM120000	From the 12th day of the month at 0000Z
14012KT	Wind 140 at 12 kts
9999	Visibility greater than 10 km
BKN080 OVC150	Cloud Ceiling at 8,000FT broken, 15,000FT overcast
PROB30 1200/1204	30 percent probability between the 12th day of the month at 0000 UTC and the 12th day of the month at 0400 UTC
7000	Visibility 7 km
TSRA	Thunderstorm with moderate rain showers
BKN030CB	Cloud Ceiling at 3,000FT broken with cumulonimbus
FM120400	From the 12th day of the month at 0400 UTC
14008KT	Wind 140 at 8 kts
9999	Visibility greater than 10 km
SCT040 OVC080	Cloud ceiling at 4,000FT scattered, cloud ceiling at 8,000FT overcast
TEMPO 1204/1208	Temporary conditions between the 12th day of the month at 0400 UTC and the 12th day of the month at 0800 UTC
7000	Visibility 7 km
TSRA	Thunderstorms with moderate rain showers
OVC030CB	Cloud Ceiling 3,000 overcast with cumulonimbus
=	End of message

3.6.18 Example of TAF AMD and interpretation in Table 8 below

TAF AMD

HTDA 131555Z 1316/1412 VRB03KT 9999 VCTS SCT025CB BKN250

TEMPO 1316/1318 2SM TSRA BKN020CB

FM131800 VRB03KT P6SM SCT025 BKN250 TEMPO 1320/1324 1SM TSRA OVC010CB

FM140000 VRB03KT P6SM TS SCT020CB BKN120 TEMPO 1408/1412 BKN020CB=

Table 8: Interpretation of the Amended TAF Message

Forecast Code	Meaning
TAF AMD	Amended Terminal Aerodrome Forecast
HTDA	Dar es Salaam, Tanzania
131555Z	Prepared on the 13th at 1555 UTC
1316/1412	Valid from the 13th at 1600 UTC until the 14th at 1200 UTC
VRB03KT	Wind variable at 3 KT
9999	Visibility greater than 10 km
VCTS	Thunderstorms in the vicinity
SCT025CB BKN250	Cloud ceiling at 2,500FT scattered with cumulonimbus, cloud ceiling at 25,000FT broken

TEMPO 1316/1318	Temporary conditions between the 13th day of the month at 1600 UTC and the 13th day of the month at 1800 UTC
5000	Visibility 5 km
TSRA	Thunderstorms with moderate rain showers
BKN020CB	Cloud Ceiling at 2,000FT broken with cumulonimbus
FM131800	From the 13th day of the month at 1800 UTC
VRB03KT	Wind variable at 3 knots
9999	Visibility greater than 10 km
SCT025 BKN250	Cloud ceiling at 2,500FT scattered, cloud ceiling at 25,000FT broken
TEMPO 1320/1324	Temporary conditions between the 13th day of the month at 2000 UTC and the 14th day of the month at 0000 UTC
3000	Visibility 3 km
TSRA	Thunderstorms with moderate rain showers
OVC010CB	Cloud Ceiling 1,000 overcast with cumulonimbus
FM140000	From the 14th day of the month at 0000 UTC
VRB03KT	Variable wind at 3 knots
9999	Visibility greater than 10 km
TS	Thunderstorms
SCT020CB BKN120	Cloud ceiling at 2,000FT scattered with cumulonimbus, cloud ceiling at 12,000FT broken
TEMPO 1408/1412	Temporary conditions between the 14th day of the month at 0800 UTC and the 14th day of the month at 1200 UTC
BKN020CB	Cloud Ceiling at 2,000FT broken with cumulonimbus
=	End of Message

3.6.19 Issuance of TAF. The AMSP should ensure that TAFs are issued four times a day, at an interval of every 6 hours, according to the following scheduled times in Table 9 below:

Table 9: TAF Issuance Schedule

SCHEDULED ISSUANCE	VALIDITY PERIOD	ISSUANCE WINDOW
0000 UTC	0000 to 2400 or 0600 UTC	2320 to 2340 UTC
0600 UTC	0600 to 0600 or 1200 UTC	0520 to 0540 UTC
1200 UTC	1200 to 1200 or 1800 UTC	1120 to 1140 UTC
1800 UTC	1800 to 1800 or 2400 UTC	1720 to 1740 UTC

3.7 SIGMET Information

For technical specification in respect to preparation and issuance of SIGMET messages, refer to Advisory Circular TCAA/QSP/SR/AC/ANS - 40

3.8 Aerodrome Warnings

For technical specification in respect to preparation and issuance aerodrome warnings reports, refer to Advisory Circular TCAA/QSP/SR/AC/ANS - 41

3.9 Wind shear Warnings and Alerts

Document No.: TCAA/QSP/SR/AC/ANI - 38	Title: Guidance on Technical Specifications for Meteorological reports for air Navigation Services	Page 14 of 14
--	---	---------------

For technical specification in respect to preparation and issuance of wind shear warnings and alerts, refer to Advisory Circular TCAA/QSP/SR/AC/ANS -39



.....
Tanzania Civil Aviation Authority