Object Number	Object Name	Acronym	Feature Type
1.1	Air Temperature	AIRTEM	Geo
1.2	Atmospheric Pressure	AIRPSR	Geo
1.3	Centre of Anticyclone	CEHIPR	Geo
1.4	Centre of Depression	CENDEP	Geo
1.5	Cloud	CLOUDS	Geo
1.6	Convergent Boundaries	CONVBO	Geo
1.7	Dew-point Temperature	DPTEMP	Geo
1.8	Freezing Spray	FZSPRY	Geo
1.9	Front	FRONTS	Geo
1.10	Gust	GUSGUS	Geo
1.11	Ice Edge	ICEDGE	Geo
1.12	Isoheight	ISOHGT	Geo
1.13	Limit of Known Icebergs	ICEBRG	Geo
1.14	Low Water Level	LOWATR	Geo
1.15	Maximum Air Temperature	MAXTEM	Geo
1.16	Maximum Dew-point Temperature	MAXDPT	Geo
1.17	Maximum Pressure Decrease/Minimum Pressure Increase	MAXPDE	Geo
1.18	Maximum Pressure Increase/Minimum Pressure Decrease	MAXPIN	Geo
1.19	Maximum Sea Surface Temperature	MAXSST	Geo
1.20	Metarea	METARE	Meta
1.21	Minimum Air Temperature	MINTEM	Geo
1.22	Minimum Dew-point Temperature	MINDPT	Geo
1.23	Minimum Sea Surface Temperature	MINSST	Geo
1.24	Observations	OBSERV	Geo
1.25	Pressure Tendency	PRETEN	Geo
1.26	Ridge	RIDGES	Geo
1.27	Sea Surface Current	SESUCU	Geo
1.28	Sea Surface Temperature	SSTEMP	Geo
1.29	Significant Weather	SIGWET	Geo
1.30	Storm Surge	STOSUR	Geo
1.31	Surface Visibility	SURVIS	Geo
1.32	Surface Wind	SUWIND	Geo
1.33	Swell	SWELLS	Geo
1.34	Thickness	THKNSS	Geo
1.35	Tropical Cyclone	TROCYC	Geo
1.36	Tsunami	TSUNAM	Geo
1.37	Universal Time Coordinated	UTCTIM	Meta
1.38	Vertical Reference Frame	VERTRF	Meta
1.39	Watch/Warning	WRNING	Geo
1.40	Wave	WAVWAV	Geo

1.1 Air Temperature

WMO Definition: **AIR TEMPERATURE:** The temperature indicated by a thermometer exposed to the air in a place sheltered from direct solar radiation. (WMO-No. 182, A1390)				
Geo Feature: Air Temperature (AIRTEM)				
Primitives: Point, Curve, Surface				
Attribute	**Acronym**	**Allowable Encoding Value**	**Type**	**Multiplicity**
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Temperature			C	1,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Temperature	VALTMP		(S) RE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.2 Atmospheric Pressure

WMO Definition: **ATMOSPHERIC PRESSURE:** Pressure (force per unit area) exerted by the atmosphere on any surface by virtue of its weight; it is equivalent to the weight of a vertical column of air extending above a surface of unit area to the outer limit of the atmosphere. (WMO-No. 182, A2930)

Geo Feature: **Atmospheric Pressure (AIRPSR)**

Primitives: **Point, Curve, Surface**

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Atmospheric Pressure			C	1,1
Atmospheric Pressure Accuracy	ATPACC		(S) RE	0,1
Value of Atmospheric Pressure	VALPSR		(S) RE	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.3   Centre of Anticyclone

WMO Definition: **CENTER OF ANTICYCLONE:** Region of the atmosphere where the pressures are high relative to those in the surrounding region at the same level (WMO-No. 182, A2090)				
Point of the highest Pressure in the Area of High Pressure.				
Geo Feature: Centre of Anticyclone (CEHIPR)				
Primitives: Point				
Attribute	**Acronym**	**Allowable Encoding Value**	**Type**	**Multiplicity**
Atmospheric Pressure			C	1,1
Atmospheric Pressure Accuracy	ATPACC		(S) RE	0,1
Value of Atmospheric Pressure	VALPSR		(S) RE	1,1
Expected Movement			C	0,1
Speed of Expected Movement	SPEXMO		(S) IN	1,1
Direction of Expected Movement	DREXMO	1: North (N) 2: North-East (NE) 3: East (E) 4: South-East (SE) 5: South (S) 6: South-West (SW) 7: West (W) 8: North-West (NW)	(S) EN	1,1
Velocity Units	VUNITS		(S) EN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1
Reference: WMO-No. 558, Appendix I.4 Remarks: • Only populate the INFORM attribute with high-impact or critical information.				

1.4 Centre of Depression

WMO Definition: **CENTER OF DEPRESSION:** Region of the atmosphere in which the pressures are lower than those of the surrounding region at the same level. (WMO-No. 182, D0230)
Point of the lowest pressure in the Low Pressure Area.

Geo Feature: Centre of Depression (CENDEP)

Primitives: Point

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Expected Change in Intensity	EXPINT	1: Much weakening 2: Weakening 3: No change 4: Intensification 5: Strong intensification 6: Not observed previously 7: Undetermined	EN	0,1
Expected Movement			C	0,1
Speed of Expected Movement	SPEXMO		(S) IN	1,1
Direction of Expected Movement	DREXMO	1: North (N) 2: North-East (NE) 3: East (E) 4: South-East (SE) 5: South (S) 6: South-West (SW) 7: West (W) 8: North-West (NW)	(S) EN	1,1
Velocity Units	VUNITS		(S) EN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Atmospheric Pressure			C	1,1
Atmospheric Pressure Accuracy	ATPACC		(S) RE	0,1
Value of Atmospheric Pressure	VALPSR		(S) RE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 558, Appendix I.4

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.5 Cloud

WMO Definition: **CLOUD:** A hydrometeor consisting of minute particles of liquid water or ice, or of both, suspended in the free air and usually not touching the ground. It may also include larger particles of liquid water or ice and non-aqueous liquid or solid particles such as those present in fumes, smoke and dust. (WMO-No. 182, C1450)				

Geo Feature: Cloud (CLOUDS)

Primitives: Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Height of Cloud Base	HCLOBA	1: 0 to 50m 2: 50 to 100m 3: 100 to 200m 4: 200 to 300m 5: 300 to 600m 6: 600 to 1000m 7: 1000 to 1500m 8: 1500m to 2000m 9: 2000 to 2500m 10: 2500m or more, or no clouds 11: Height of base of cloud not known or base of clouds at level lower and tops at a level higher than that of the station	EN	1,1
Total Cloud Cover	TCLOCO	1: 0 2: 1 okta or 1/10 or less, but not zero 3: 2 oktas or 2/10-3/10 4: 3 oktas or 4/10 5: 4 oktas or 5/10 6: 5 oktas or 6/10 7: 6 oktas or 7/10 – 8/10 8: 7 oktas or 9/10 or more, but not 8 oktas or 10/10 9: 8 oktas or 10/10 10: Sky obscured or cloud amount cannot be estimated 11: No measurements made	EN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1

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Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.6   Convergent Boundaries

<u>Definition:</u> **CONVERNGENT BOUNDARIES:** The interface or transition zone between air masses of similar densities (temperature, humidity).

<u>Geo Feature:</u> **Convergent Boundaries (CONVBO)**

<u>Primitives:</u> **Curve, Surface**

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Category of Convergent Boundary	CATCON	1: Intertropical convergence zone 2: Squall line 3: Trough line 4: Trough 5: Shear line 6: Convergence line 7: Monsoon trough 8: Tropical wave	EN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

<u>Reference:</u>

WMO-No. 182, International Meteorological Vocabulary

NOAA National Weather Service Instruction 10-604, June 2012, Operations and Services, Tropical Cyclone Weather Services Program, NWSPD 10-6

<u>Remarks:</u>
- Only populate the INFORM attribute with high-impact or critical information.

1.7 Dew-point Temperature

WMO Definition: **DEW-POINT TEMPERATURE:** Temperature to which a volume of air must be cooled at constant pressure and constant moisture in order to reach saturation; any further cooling causes condensation (WMO-No. 182, D0420)

Geo Feature: **Dew-point Temperature (DPTEMP)**

Primitives: **Point, Curve, Surface**

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Dew-point Temperature			C	1,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Dew-point Temperature	VALTDT		(S) RE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.8   Freezing Spray

<u>WMO Definition:</u> **FREEZING SPRAY:** Sea spray transported through air at temperatures below 0° C (WMO-No. 182, F1170)

Geo Feature: Freezing Spray (FZSPRY)

Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Icing Intensity	ICIINT	1: Light 2: Moderate 3: Severe 4: Very Severe	EN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

<u>Reference:</u>

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins

<u>Remarks:</u>
- Only populate the INFORM attribute with high-impact or critical information.

1.9 Front

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
WMO Definition: **FRONT:** The interface or transition zone between air masses of different densities (temperature, humidity). (WMO-No. 182, F1290 (1))				
Geo Feature: Front (FRONTS)				
Primitives: Curve				
Category of Front	CATFRO	1: Cold front 2: Warm front 3: Occluded front 4: Quasi-stationary front 5: Convergence line 6: Dry line	EN	1,1
Frontal Development	FRODEV	1: Developing 2: Dissipating	EN	0, 1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Level of Front			C	0,1
Front Level	FROLEV	1: Surface 2: Above surface	(S) EN	1,1
Value of Atmospheric Pressure	VALPSR		(S) IN	0,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.
- VALPSR must be populated if and only if FROLEV is coded as "2: Above surface".

1.10   Gust

WMO Definition: **GUST:** Sudden, brief increase in wind speed over its mean value (WMO-No.182, G0920)				

Geo Feature: Gust (GUSGUS)				

Primitives: Point, Curve, Surface				

Attribute	**Acronym**	**Allowable Encoding Value**	**Type**	**Multiplicity**
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Surface Gust Direction			C	1,1
Azimuth Degrees of Surface Wind Direction	DEGWND		(S) IN	0, 1
Compass Point of Surface Wind Direction	COMWND	1: North (N) 2: North-North-East (NNE) 3: North-East (NE) 4: East-North-East (ENE) 5: East (E) 6: East-South-East (ESE) 7: South-East (SE) 8: South-South-East (SSE) 9: South (S) 10: South-South-West (SSW) 11: South-West (SW) 12: West-South-West (WSW) 13: West (W) 14: West-North-West (WNW) 15: North-West (NW) 16: North-North-West (NNW)	(S) EN	1, 1
Wind Average Period	WNDAVP		(S) IN	1, 1
Surface Gust Magnitude			C	1,1
Value of Surface Wind Gust	VALGST		(S) RE	1,1
Velocity Units	VUNITS	1: Meters per second 2: Kilometers per hour 3: Miles per hour 4: Nautical miles per hour (knots)	(S) EN	1,1
Wind Average Period	WNDAVP		(S) IN	1, 1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1

Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of Terms used in Weather and Sea Bulletins

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

- DEGWND may be populated in addition to COMWND to indicate direction.

1.11　Ice Edge

WMO Definition: **ICE EDGE:** Line joining points of equal ice concentration, denoting the extent of sea ice. (WMO-No. 182, I1320)

Geo Feature: Ice Edge (ICEDGE)

Primitives: Curve

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Ice Concentration	ICECON		IN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

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1.12   Isoheight

WMO Definition: **ISOHEIGHT:** A line of constant height above sea level. (WMO-No. 182, I1440; WMO-No. 182, H0430)				
Geo Feature: Isoheight (ISOHGT)				
Primitives: Curve				
Attribute	**Acronym**	**Allowable Encoding Value**	**Type**	**Multiplicity**
Height Contour			C	1,1
Length Units	LUNITS	1: Meters 2: Kilometers 3: Feet 4: Miles 5: Nautical miles	EN	1,1
Value of Height Contour	VALHGT		IN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.13   Limit of Known Icebergs

WMO Definition: **LIMIT OF KNOWN ICEBERGS:** Line joining points icebergs are known to exist.
(US National Ice Center: http://www.natice.noaa.gov/faq.html)

Geo Feature: Limit of Known Icebergs (ICEBRG)

Primitives: Curve

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

US National Ice Center, http://www.natice.noaa.gov/faq.html

Remarks:
• Only populate the INFORM attribute with high-impact or critical information.

1.14   Low Water Level

<u>WMO Definition:</u> **Low Water Level:** The difference between the actual water level under the influence of a meteorological disturbance and the level which would have been attained in the absence of the meteorological disturbance (i.e. astronomical tide) resulting in water level values lower than the tidal datum and posing a hazard to navigation.

<u>**Geo Feature:**</u> **Low Water Level (LOWATR)**

<u>**Primitives:**</u> **Curve, Surface**

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Tidal Datum	LEVREF	1: Mean low water springs 2: Mean lower low water springs 3: Mean sea level 4: Lowest low water 5: Mean low water 6: Lowest low water springs 7: Approximate mean low water springs 8: Indian spring low water 9: Low water springs 10: Approximate lowest astronomical tide 11: Nearly lowest low water12: Mean lower low water 13: Low water 14: Approximate mean low water 15: Approximate mean lower low water 16: Mean high water 17: Mean high water springs 18: High water 19: Approximate mean sea level 20: High water springs 21: Mean higher high water 22: Equinoctial spring low water 23: Lowest astronomical tide 24: Local datum 25: International Great Lakes datum 1985 26: Mean water level 27: Lower low water large tide	EN	1,1

		28: Higher high water large tide 29: Nearly highest high water 30: Highest astronomical tide		
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Low Water Level Value			C	1,1
Low Water Level	LOWLVL		(S) RE	1,1
Water Height Units	HUNITS	1: Meters2: Feet	(S) EN	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference: None

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.
- All values will be negative, indicating water levels lower than the indicated datum.

1.15 Maximum Air Temperature

WMO Definition: **MAXIMUM AIR TEMPERATURE:** The temperature indicated by a thermometer exposed to the air in a place sheltered from direct solar radiation. (WMO-No. 182, A1390)
The highest value of air temperature in a treated area.

Geo Feature: Maximum Air Temperature (MAXTEM)

Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Temperature			C	1,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Temperature	VALTMP		(S) RE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.16   Maximum Dew-point Temperature

WMO Definition: **MAXIMUM DEW-POINT TEMPERATURE:** Temperature to which a volume of air must be cooled at constant pressure and constant moisture in order to reach saturation; any further cooling causes condensation. (WMO-No. 182, D0420)

The highest value of dew-point temperature in the treated area.

Geo Feature: Maximum Dew-Point Temperature (MAXDPT)

Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Dew-point Temperature			C	1,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Dew-point Temperature	VALTDT		(S) RE	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.17 Maximum Pressure Decrease/Minimum Pressure Increase

WMO Definition: **MAXIMUM PRESSURE DECREASE/MINIMUM PRESSURE INCREASE:** Point of the maximum pressure decrease or minimum pressure increase in absence of pressure decrease in the treated area.				
Geo Feature: Maximum Pressure Decrease/Minimum Pressure Increase (MAXPDE)				
Primitives: Point				

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Atmospheric Pressure Change			C	1,1
Amount of Pressure Change	AMPRCH		(S) RE	1,1
Atmospheric Pressure Accuracy	ATPACC		(S) RE	0,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.18   Maximum Pressure Increase/Minimum Pressure Decrease

WMO Definition: **MAXIMUM PRESSURE INCREASE/MINIMUM PRESSURE DECREASE:** Point of the maximum pressure increase or minimum pressure decrease in absence of pressure increase in the treated area.				

Geo Feature: Maximum Pressure Increase/Minimum Pressure Decrease (MAXPIN)				

Primitives: Point				

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Atmospheric Pressure Change			C	1,1
Amount of Pressure Change	AMPRCH		(S) RE	1,1
Atmospheric Pressure Accuracy	ATPACC		(S) RE	0,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:
WMO-No. 182, International Meteorological Vocabulary
Remarks:
• Only populate the INFORM attribute with high-impact or critical information.

1.19   Maximum Sea Surface Temperature

<u>WMO Definition:</u> **MAXIMUM SEA SURFACE TEMPERATURE:** Temperature of the surface layer of a body of water.   (WMO-No. 182, S3830)

The highest value of sea-surface temperature in the treated area.

<u>**Geo Feature:**</u> **Maximum Sea-surface Temperature (MAXSST)**

<u>**Primitives:**</u> **Point, Curve, Surface**

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Sea Surface Temperature			C	1,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Sea Surface Temperature	VALSST		(S) RE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

<u>Reference:</u>

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins

<u>Remarks:</u>
- Only populate the INFORM attribute with high-impact or critical information.

1.20   Metarea

WMO Definition: **METAREA:** The number designating a geographical sea area established for the purpose of coordinating the broadcast of marine meteorological information (IMO A 27/Res. 1051, 2.8, December 2011)

Meta Feature: Metarea (METARE)

Primitives: Line, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Metarea Number	METNUM	1: I 2: II 3: III 4: IV 5: V 6: VI 7: VII 8: VIII (N) 9: VIII (S) 10: IX 11: X 12: XI 13: XII 14: XIII 15: XIV 16: XV 17: XVI 18: XVII 19: XVIII 20: XIX 21: XX 22: XXI	EN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1

Reference:

JCOMM Metareas (http://www.gmdss.org/metareas.html)

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.21 Minimum Air Temperature

<u>WMO Definition:</u> **MINIMUM AIR TEMPERATURE:** The temperature indicated by a thermometer exposed to the air in a place sheltered from direct solar radiation. (WMO-No. 182, A1390) The lowest value of air temperature in a treated area.				
<u>Geo Feature:</u> **Minimum Air Temperature (MINTEM)**				
<u>Primitives:</u> **Point, Curve, Surface**				
Attribute	**Acronym**	**Allowable Encoding Value**	**Type**	**Multiplicity**
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Temperature			C	1,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Temperature	VALTMP		(S) RE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1
<u>Reference:</u> WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins <u>Remarks:</u> • Only populate the INFORM attribute with high-impact or critical information.				

1.22 Minimum Dew-point Temperature

WMO Definition: **MINIMUM DEW-PONT TEMPERATURE:** Temperature to which a volume of air must be cooled at constant pressure and constant moisture in order to reach saturation; any further cooling causes condensation. (WMO-No. 182, D0420)

The lowest value of dew-point temperature in the treated area.

Geo Feature: **MINIMUM DEW-POINT TEMPERATURE (MINDPT)**

Primitives: **Point, Curve, Surface**

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Dew-point Temperature			C	1,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Dew-point Temperature	VALTDT		(S) RE	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
• Only populate the INFORM attribute with high-impact or critical information.

1.23   Minimum Sea Surface Temperature

WMO Definition: **MINIMUM SEA SURFACE TEMPERATURE:** Temperature of the surface layer of a body of water.   (WMO-No. 182, S3830)
The lowest value of sea-surface temperature in the treated area.

Geo Feature: Minimum Sea Surface Temperature (MINSST)

Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Sea Surface Temperature			C	1,1
Temperature Accuracy	TMPACC		RE	0,1
Value of Sea Surface Temperature	VALSST		RE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference: WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins Remarks: • Only populate the INFORM attribute with high-impact or critical information.

1.24   Observations

WMO Definition: **OBSERVATIONS:** Evaluation of one or more meteorological elements. (WMO-No. 182, O0040)				
Geo Feature: Observations (OBSERV)				
Primitives: Point				
Attribute	**Acronym**	**Allowable Encoding Value**	**Type**	**Multiplicity**
Category of Surface Visibility	CATVIS	1: Very poor 2: Poor 3: Moderate 4: Good	EN	0,1
Icing Intensity	ICIINT	1: Light 2: Moderate 3: Severe 4: Very Severe	EN	0,1
Air Temperature			C	0,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Temperature	VALTMP		(S) RE	1,1
Gust			C	0,1
Azimuth Degrees of Surface Wind Direction	DEGWND		(S) IN	0, 1
Compass Point of Surface Wind Direction	COMWND	1: North (N) 2: North-North-East (NNE) 3: North-East (NE) 4: East-North-East (ENE) 5: East (E) 6: East-South-East (ESE) 7: South-East (SE) 8: South-South-East (SSE) 9: South (S) 10: South-South-West (SSW) 11: South-West (SW) 12: West-South-West (WSW) 13: West (W) 14: West-North-West (WNW) 15: North-West (NW) 16: North-North-West (NNW)	(S) EN	1, 1
Value of Surface Wind Gust	VALGST		(S) RE	1,1
Velocity Units	VUNITS	1: Meters per second 2: Kilometers per hour 3: Miles per hour 4: Nautical miles per hour (knots)	(S) EN	0,1

Wind Average Period	WNDAVP		(S) IN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Observation Information			C	1,1
Observation Source	OBSRCE	1: Buoy 2: Ship 3: Satellite 4: Upper air 5: Land-based station 6: Tide Gauge 7: Other	(S) EN	1,1
Observation Source Identification	OBSIDS		(S) TE	1,1
Observation Source Status	OBSTAT	1: Fully operational 2: Partially operational 3: Drifting 4: Broken 5: Offline 6: Discontinued 7: Manual observations 8: Unknown	(S) EN	1,*
Atmospheric Pressure			C	0,1
Amount of Atmospheric Pressure Change	AMPRCH		(S) RE	0,1
Atmospheric Pressure Accuracy	ATPACC		(S) RE	0,1
Characteristic of Pressure Change	CHPRCH	1: Increasing, then decreasing; atmospheric pressure the same as or higher than three hours ago 2: Increasing, then steady; or increasing then increasing more slowly; atmospheric pressure higher than three hours ago 3: Increasing (steadily or unsteadily); atmospheric pressure higher now than three hours ago 4: Decreasing or steady, then increasing; or increasing, then increasing more rapidly; atmospheric pressure now higher than three hours ago 5: Steady; atmospheric pressure the same as three hours ago 6: Decreasing, then	(S) EN	0,1

		increasing; atmospheric pressure the same as or lower than three hours ago 7: Decreasing, then steady; or decreasing, then decreasing more slowly; atmospheric pressure now lower than three hours ago 8: Decreasing (steadily or unsteadily); atmospheric pressure now lower than three hours ago 9: Steady or increasing, then decreasing more rapidly; atmospheric pressure now lower than three hours ago		
Value of Atmospheric Pressure	VALPSR		(S) RE	1,1
Sea Surface Temperature			C	0,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Temperature	VALTMP		(S) RE	1,1
Surface Current			C	0,1
Azimuth Degrees of Sea-Surface Current Direction	DEGCUR		(S) IN	0,1
Category of Sea-Surface Current Direction	CATCUR	1: North (N) 2: North-East (NE) 3: East (E) 4: South-East (SE) 5: South (S) 6: South-West (SW) 7: West (W) 8: North-West (NW)	(S) EN	1,1
Speed of Surface Current	SPSUCU		(S) IN	1,1
Velocity Units	VUNITS	1: Meters per second 2: Kilometers per hour 3: Miles per hour 4: Nautical miles per hour (knots)	(S) EN	1,1
Surface Wind			C	0,1
Azimuth Degrees of Surface Wind Direction	DEGWND		(S) IN	0,1
Beaufort Force	BEAFOR	1: Calm 2: Light Air 3: Light Breeze 4: Gentle Breeze 5: Moderate Breeze 6: Fresh Breeze 7: Strong Breeze 8: Near Gale	(S) EN	1,1

		9: Gale 10: Strong Gale 11: Storm 12: Violent Storm 13: Hurricane		
Change in Surface Wind Direction	CHAWDI	1: Wind shift 2: Weering wind 3: Backing wind	(S) EN	0,1
Compass Point of Surface Wind Direction	COMWND	1: North (N) 2: North-North-East (NNE) 3: North-East (NE) 4: East-North-East (ENE) 5: East (E) 6: East-South-East (ESE) 7: South-East (SE) 8: South-South-East (SSE) 9: South (S) 10: South-South-West (SSW) 11: South-West (SW) 12: West-South-West (WSW) 13: West (W) 14: West-North-West (WNW) 15: North-West (NW) 16: North-North-West (NNW)	(S) EN	1,1
Value of Surface Wind Speed	VAWISP		(S) RE	0,1
Velocity Units	VUNITS	1: Meters per second 2: Kilometers per hour 3: Miles per hour 4: Nautical miles per hour (knots)	(S) EN	1,1
Wind Average Period	WNDAVP		(S) IN	1,1
Swell			C	0,1
Azimuth Degrees of Significant Swell Direction	DEGSWL		(S) IN	0,1
Category of Significant Swell Direction	CATSWD	1: North (N) 2: North-East (NE) 3: East (E) 4: South-East (SE) 5: South (S) 6: South-West (SW) 7: West (W) 8: North-West (NW)	(S) EN	1,1
Category of Significant Swell Wave Height	CATSWH	1: Low 2: Moderate 3: Heavy	(S) EN	1,1
Significant Swell Period	SWLPRD		(S) IN	1,1

Significant Swell Wave Height	SSWHGT		(S) IN	0,1
Water Height Units	HUNITS	1: Meters 2: Feet	(S) EN	0,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Wave			C	0,1
Azimuth Degrees of Significant Waves	DEGWAV		(S) IN	0,1
Category of Significant Wave Height	CATSEH	1: Calm (glassy) 2: Calm (rippled) 3: Smooth (wavelets) 4: Slight 5: Moderate 6: Rough 7: Very Rough 8: High 9: Very high 10: Phenomenal	(S) EN	1,1
Water Height Units	HUNITS	1: Meters 2: Feet	(S) EN	0,1
Significant Wave Height	SIWAHE		(S) IN	0,1
Significant Wave Period	SIWAPE		(S) IN	0,1
Significant Wave Direction	SIWADE	1: North (N) 2: North-East (NE) 3: East (E) 4: South-East (SE) 5: South (S) 6: South-West (SW) 7: West (W) 8: North-West (NW)	(S) EN	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.
- VAWISP may be populated in addition to BEAFOR to indicate wind speed.
- DEGWND may be populated in addition to COMWND to indicate direction for Surface Wind and Gust.
- CHAWDI should not be included if wind is steady.
- DEGWAV may be populated in addition to SIWADE to indicate direction.

- SIWAHE may be populated in addition to CATSEH to indicate height.
- SSWHGT may be populated in addition to CATSWH to indicate height.
- DEGSWL may be populated in addition to CATSWD to indicate direction.
- CATSEH and CATSWH units are not dictated by HUNITS; category is defined in meters.
- CHPRCH must be populated when AMPRCH is populated.

1.25   Pressure Tendency

WMO Definition: **PRESSURE TENDENCY:** Character and amount of a station pressure change over three hours (over 24 hours in tropical regions). (WMO-No. 182, P1690)

Geo Feature: **Pressure Tendency (PRETEN)**

Primitives: **Point, Curve, Surface**

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Atmospheric Pressure Change			C	1,1
Amount of Atmospheric Pressure Change	AMPRCH		(S) RE	1,1
Atmospheric Pressure Accuracy	ATPACC		(S) RE	0,1
Characteristic of Pressure Change	CHPRCH	1: Increasing, then decreasing; atmospheric pressure the same as or higher than three hours ago 2: Increasing, then steady; or increasing then increasing more slowly; atmospheric pressure higher than three hours ago 3: Increasing (steadily or unsteadily); atmospheric pressure higher now than three hours ago 4: Decreasing or steady, then increasing; or increasing, then increasing more rapidly; atmospheric pressure now higher than three hours ago 5: Steady; atmospheric pressure the same as three hours ago 6: Decreasing, then increasing; atmospheric pressure the same as or lower than three hours ago 7: Decreasing, then steady; or decreasing, then decreasing more slowly; atmospheric pressure now lower than three hours ago 8: Decreasing (steadily or unsteadily); atmospheric pressure now lower than three hours ago 9: Steady or increasing, then decreasing more rapidly; atmospheric pressure now	(S) EN	1,1

		lower than three hours ago		C	0,*	
Information				C	0,*	
Language		ISO 639-3		(S) TE	0,1	
Text	(INFORM)			(S) TE	1,1	
Textual description				C	0,*	
File reference	(TXTDSC)			(S) TE	1,1	
Language		ISO 639-3		(S) TE	0,1	
Time				C	1,1	
Issue Time	ISSTIM			(S) DT	0,1	
Next Update Time	NUPTIM			(S) DT	0,1	
Valid Time	VALTIM			(S) DT	1,1	

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.26   Ridge

WMO Definition: **RIDGE:** Region of the atmosphere in which the pressure is high relative to the surrounding region at the same level. It is represented on a synoptic chart by a system of nearly parallel isobars or contours, approximately U-shape, which are concave towards an anticyclone. (WMO-No. 182, R1790) Ridge line: Line (imaginary) in a ridge along which the anticyclonic curvature of the isobars or contours is a maximum. (WMO-No. 182, R1800)

Geo Feature: Ridge (RIDGES)

Primitives: Curve

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Expected Change in Intensity	EXPINT	1: Much weakening 2: Weakening 3: No change 4: Intensification 5: Strong intensification 6: Not observed previously 7: Undetermined	EN	0,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.27 Sea Surface Current

WMO Definition: **SEA-SURFACE CURRENT:** A current that does not extend more than a few (2-3 meters) below the surface. (IHO Hydrographic Dictionary (web*), HR-1090, surface current)				
(*http://www.iho.shom.fr/Dhydro/Html/site_edition/consultation.html, 08/04/2009)				
Geo Feature: Sea Surface Current (SESUCU)				
Primitives: Curve, Surface				

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Sea Surface Current Direction			C	1,1
Azimuth Degrees of Sea-Surface Current Direction	DEGCUR		(S) IN	0,1
Category of Sea-Surface Current Direction	CATCUR	1: North (N) 2: North-East (NE) 3: East (E) 4: South-East (SE) 5: South (S) 6: South-West (SW) 7: West (W) 8: North-West (NW)	(S) EN	1,1
Sea Surface Current Speed			C	1,1
Speed of Surface Current	SPSUCU		(S) IN	1,1
Velocity Units	VUNITS	1: Meters per second 2: Kilometers per hour 3: Miles per hour 4: Nautical miles per hour (knots)	(S) EN	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:
WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins
WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

- DEGCUR may be populated in addition to CATCUR to indicate direction

1.28 Sea Surface Temperature

WMO Definition: **SEA SURFACE TEMPERATURE:** Temperature of the surface layer of a body of water. (WMO-No. 182, S3830)				
Geo Feature: Sea Surface Temperature (SSTEMP)				
Primitives: Point, Curve, Surface				
Attribute	**Acronym**	**Allowable Encoding Value**	**Type**	**Multiplicity**
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Sea Surface Temperature			C	1,1
Temperature Accuracy	TMPACC		(S) RE	0,1
Value of Sea Surface Temperature	VALSST		(S) RE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1
Reference: WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins WMO-No. 558, Appendix I.2, Multilingual List of terms used in Weather and Sea Bulletins Remarks: • Only populate the INFORM attribute with high-impact or critical information.				

1.29   Significant Weather

WMO Definition: **SIGNIFICANT WEATHER:** Term in marine meteorology concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of ship in navigation (WMO-No. 182, S1080, changed from aeronautical to marine purposes)

Geo Feature: Significant Weather (SIGWET)

Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Category of Significant Weather	CATSWE	1: Area of heavy swell 2: Area of complex sea state 3: Area of strong winds (6 and 7 Beaufort) 4: Area of reduced visibility 5: Area of poor visibility 6: Area of gales (8 Beaufort or more) 7: Area of continuous precipitation 8: Area of squally weather 9: Area of heavy showers 10: Area of thunderstorms 11: Area of snow 12: Area of freezing spray 13: Area of freezing precipitation 14: Area of water-spouts (tornadic or otherwise) 15: Area of dense fog	EN	1,*
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference: WMO-No. 306, Code Table 4683

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.30   Storm Surge

WMO Definition: **STORM SURGE:** The difference between the actual water level under the influence of a meteorological disturbance (storm tide) and the level which would have been attained in the absence of the meteorological disturbance (i.e. astronomical tide). (WMO-No 182, S2960)
Geo Feature: Storm Surge (STOSUR)
Primitives: Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Tidal Datum	LEVREF	1: Mean low water springs 2: Mean lower low water springs 3: Mean sea level 4: Lowest low water 5: Mean low water 6: Lowest low water springs 7: Approximate mean low water springs 8: Indian spring low water 9: Low water springs 10: Approximate lowest astronomical tide 11: Nearly lowest low water12: Mean lower low water 13: Low water 14: Approximate mean low water 15: Approximate mean lower low water 16: Mean high water 17: Mean high water springs 18: High water 19: Approximate mean sea level 20: High water springs 21: Mean higher high water 22: Equinoctial spring low water 23: Lowest astronomical tide 24: Local datum 25: International Great Lakes datum 1985 26: Mean water level 27: Lower low water large tide 28: Higher high water large	EN	1,1

		tide 29: Nearly highest high water 30: Highest astronomical tide		
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Storm Surge Height			C	1,1
Height of Storm Surge	HEISUR		(S) RE	1,1
Water Height Units	HUNITS	1: Meters 2: Feet	(S) EN	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 417, 2.3.2

WMO-No. 558, Part I, 3.2.2

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.31 Surface Visibility

WMO Definition: **SURFACE VISIBLITY:** Greatest distance at which a black object of suitable dimensions can be seen and recognized against the horizon sky during daylight or could be seen and recognized during the night if the general illumination were raised to the normal daylight level. (WMO-No. 182, V0390)

Geo Feature: Surface Visibility (SURVIS)

Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Category of Surface Visibility	CATVIS	1: Very poor 2: Poor 3: Moderate 4: Good	EN	1,1
Horizontal Visibility Range			C	0,1
Visibility Range	VIZRNG		(S) RE	1,1
Length Units	LUNITS		(S) EN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 471, Meteorological Services in Support of Maritime Search and Rescue

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.
- Horizontal Visibility Range may be populated in addition to CATVIS.

1.32   Surface Wind

WMO Definition: **SURFACE WIND:** Wind blowing near the Earth's surface. It is measured, by convention, at a height of 10 m above ground in an area where the distance between the anemometer and any obstruction is at least 10 times the height of the obstruction. (WMO-No. 182, S3850)

Number on a progressive scale (Beaufort scale) corresponding to the effects produced by winds within a particular range of speeds. (WMO-No. 182, W1040 (1)) and the direction from which the wind blows. (WMO-No. 182, W0090)

Geo Feature: Surface Wind Speed (SUWIND)

Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Surface Wind Direction			C	1,1
Azimuth Degrees of Surface Wind Direction	DEGWND		(S) IN	0,1
Compass Point of Surface Wind Direction	COMWND	1: North (N) 2: North-North-East (NNE) 3: North-East (NE) 4: East-North-East (ENE) 5: East (E) 6: East-South-East (ESE) 7: South-East (SE) 8: South-South-East (SSE) 9: South (S) 10: South-South-West (SSW) 11: South-West (SW) 12: West-South-West (WSW) 13: West (W) 14: West-North-West (WNW) 15: North-West (NW) 16: North-North-West (NNW)	(S) EN	1,1
Wind Average Period	WNDAVP		(S) IN	1,1
Surface Wind Direction Change			C	0,1
Change in Surface Wind Direction	CHAWDI	1: Wind shift 2: Veering wind 3: Backing wind	(S) EN	1,1
Wind Change Time Interval	WNDTIM		(S) IN	1,1
Surface Wind Speed			C	1,1
Beaufort Force	BEAFOR	1: Calm 2: Light Air	(S) EN	0,1

		3: Light Breeze 4: Gentle Breeze 5: Moderate Breeze 6: Fresh Breeze 7: Strong Breeze 8: Near Gale 9: Gale 10: Strong Gale 11: Storm 12: Violent Storm 13: Hurricane		
Value of Surface Wind Speed	VAWISP		(S) RE	0,1
Velocity Units	VUNITS	1: Meters per second 2: Kilometers per hour 3: Miles per hour 4: Nautical miles per hour (knots)	(S) EN	0,1
Wind Average Period	WNDAVP		(S) IN	1,1
Surface Wind Speed Change			C	0,1
Change in Surface Wind Speed	CHCWDS	1: Increasing 2: Decreasing	(S) EN	1,1
Wind Change Time Interval	WNDTIM		(S) IN	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of Terms used in Weather and Sea Bulletins

WMO/TD-No. 850

Remarks:
- VAWISP may be populated in addition to BEAFOR or VAWISP to indicate wind speed.
- VUNITS must be populated when VAWISP is populated.
- DEGWND may be populated in addition to COMWND to indicate direction.
- CHAWDI should not be included if wind is steady.
- Only populate the INFORM attribute with high-impact or critical information.

1.33 Swell

WMO Definition: **SWELL:** Any system of water waves which has left its generating area. (WMO-No.182, S3900)

Geo Feature: Swell (SWELLS)

Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Significant Swell Period	SWLPRD		IN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Swell Direction			C	1,1
Azimuth Degrees of Significant Swell Direction	DEGSWL		(S) IN	0,1
Category of Significant Swell Direction	CATSWD	1: North (N) 2: North-East (NE) 3: East (E) 4: South-East (SE) 5: South (S) 6: South-West (SW) 7: West (W) 8: North-West (NW)	(S) EN	1,1
Swell Height			C	1,1
Category of Significant Swell Wave Height	CATSWH	1: Low 2: Moderate 3: Heavy	(S) EN	1,1
Water Height Units	HUNITS	1: Meters 2: Feet	(S) EN	0,1
Significant Swell Wave Height	SSWHGT		(S) IN	0,1
Swell Height Change			C	0,1
Change in Significant Swell Height	CHSWHE	1: Building 2: Subsiding	(S) EN	1,1
Swell Height Change Time Interval	SWHTTI		(S) IN	1,1
Swell Period Change			C	0,1
Change in Significant Swell Period	CHSWPE	1: Increasing 2: Decreasing	(S) EN	1,1
Swell Period Change Time Interval	SWPETI		(S) IN	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1

Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of Terms used in Weather and Sea Bulletins

Remarks:
- SSWHGT may be coded in addition to CATSWH to indicate height.
- HUNITS must be populated if SSWHGT is populated.
- DEGSWL may be populated in addition to CATSWD to indicate direction.
- Only populate the INFORM attribute with high-impact or critical information.

1.34   Thickness

WMO Definition: **THICKNESS:** Vertical distance measured in geometric or, usually, geopotential units between two isobaric heights (WMO-No. 182, T0820)				
Geo Feature: Thickness (THKNSS)				
Primitives: Curve, Surface				
Attribute	**Acronym**	**Allowable Encoding Value**	**Type**	**Multiplicity**
Lower Isobaric Level	LOWLEV	1: 1000 mb 2: 925 mb 3: 850 mb 4: 700 mb 5: 500 mb 6: 300 mb 7: 250 mb 8: 200 mb 9: 150 mb 10: 100 mb	EN	1,1
Upper Isobaric Level	UPRLEV	1: 1000 mb 2: 925 mb 3: 850 mb 4: 700 mb 5: 500 mb 6: 300 mb 7: 250 mb 8: 200 mb 9: 150 mb 10: 100 mb	EN	1,1
Thickness Height	THKNSS		IN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1

Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 182, International Meteorological Vocabulary

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

1.35   Tropical Cyclone

WMO Definition: **TROPICAL CYCLONE:** Generic term for a non-frontal synoptic scale cyclone originating over tropical or sub-tropical waters with organized convection and definite cyclonic surface wind circulation. (WMO-No. 182, T1510)
Geo Feature: Tropical Cyclone (TROCYC)
Primitives: Point, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Category of Tropical Cyclone	CATCYC	1: Tropical disturbance 2: Tropical depression 3: Tropical storm 4: Severe tropical storm 5: Tropical cyclone 6: Hurricane 7: Typhoon 8: Super typhoon 9: Post-tropical cyclone 10: Subtropical cyclone 11: Remnant low	EN	1,1
Expected Change in Intensity	EXPINT	1: Much weakening 2: Weakening 3: No change 4: Intensification 5: Strong intensification 6: Not observed previously 7: Undetermined	EN	0,1
Saffir-Simpson Category	SAFSIM	1: Category 1 2: Category 2 3: Category 3 4: Category 4 5: Category 5	EN	0,1
Expected Movement			C	0,1
Speed of Expected Movement	SPEXMO		(S) IN	1,1
Direction of Expected Movement	DREXMO	1: North (N) 2: North-East (NE) 3: East (E) 4: South-East (SE) 5: South (S) 6: South-West (SW) 7: West (W) 8: North-West (NW)	(S) EN	1,1

Velocity Units	VUNITS		(S) EN	1,1	
Feature name			C	0,1	
Display name			(S) BO	0,1	
Language		ISO 639-3	(S) TE	0,1	
Name	(OBJNAM)		(S) TE	1,1	
Information			C	0,*	
Language		ISO 639-3	(S) TE	0,1	
Text	(INFORM)		(S) TE	1,1	
Textual description			C	0,*	
File reference	(TXTDSC)		(S) TE	1,1	
Language		ISO 639-3	(S) TE	0,1	
Time			C	1,1	
Issue Time	ISSTIM		(S) DT	0,1	
Next Update Time	NUPTIM		(S) DT	0,1	
Valid Time	VALTIM		(S) DT	1,1	

Reference:

WMO-No. 558, Appendix I.4, Symbols and Depictions Used on Radiofacsimile Charts for Marine Purposes

Remarks:
- "Feature name" should be populated with official WMO tropical cyclone name. The name should populate both "Display name" and "Name" under the complex attribute.

- Headlines and information occupying less than 300 characters may populate the INFORM attribute. This should be critical information, as additional symbols are added to the ECDIS screen when this attribute is populated.

- Text advisories should populate the "Textual description" attribute.

- VUNITS must be populated if SPEXMO is populated.

1.36   Tsunami

WMO Definition: **TSUNAMI:** A series of travelling waves of extremely long length and period, generated by disturbances associated with earthquakes occurring below or near the ocean floor. (Also called seismic sea wave and, popularly, tidal wave.) An ocean wave produced by a submarine earthquake, landslide or volcanic eruption. (IOC-No. 37, p. 120)
Geo Feature: Tsunami (TSUNAM)
Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Deterministic Inundation			C	0,1
Water Height Units	HUNITS	1: Meters 2: Feet	(S) EN	1,1
Relative Maximum Wave Height	RELHGT		(S) RE	1,1
Tidal Datum	LEVREF	1: Mean low water springs 2: Mean lower low water springs 3: Mean sea level 4: Lowest low water 5: Mean low water 6: Lowest low water springs 7: Approximate mean low water springs 8: Indian spring low water 9: Low water springs 10: Approximate lowest astronomical tide 11: Nearly lowest low water 12: Mean lower low water 13: Low water 14: Approximate mean low water 15: Approximate mean lower low water 16: Mean high water 17: Mean high water springs 18: High water 19: Approximate mean sea level 20: High water springs 21: Mean higher high water 22: Equinoctial spring low water 23: Lowest astronomical tide 24: Local datum 25: International Great Lakes	(S) EN	1,1

		datum 1985 26: Mean water level 27: Lower low water large tide 28: Higher high water large tide 29: Nearly highest high water 30: Highest astronomical tide		
Tsunami Wave Arrival Time	ARRTIM		(S) DT	0,1
Tsunami Wave Period	TSUPER		(S) IN	0,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Probabalistic Inundation			C	0,1
Height Probability	HTPROB		(S) IN	1,1
Water Height Units	HUNITS	1: Meters 2: Feet	(S) EN	1,1
Relative Maximum Wave Height	RELHGT		(S) RE	1,1
Tidal Datum	LEVREF	1: Mean low water springs 2: Mean lower low water springs 3: Mean sea level 4: Lowest low water 5: Mean low water 6: Lowest low water springs 7: Approximate mean low water springs 8: Indian spring low water 9: Low water springs 10: Approximate lowest astronomical tide 11: Nearly lowest low water 12: Mean lower low water 13: Low water 14: Approximate mean low water 15: Approximate mean lower low water 16: Mean high water 17: Mean high water springs 18: High water 19: Approximate mean sea level 20: High water springs 21: Mean higher high water 22: Equinoctial spring low water 23: Lowest astronomical tide	(S) EN	1,1

		24: Local datum		
		25: International Great Lakes datum 1985		
		26: Mean water level		
		27: Lower low water large tide		
		28: Higher high water large tide		
		29: Nearly highest high water		
		30: Highest astronomical tide		
Tsunami Wave Arrival Time	ARRTIM		(S) DT	0,1
Tsunami Wave Period			(S) IN	0,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1
Valid Time	VALTIM		(S) DT	1,1

Reference:

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of Terms used in Weather and Sea Bulletins

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

- HUNITS must be populated if RELHGT is populated.

1.37   Universal Time Coordinated

WMO Definition: **UNIVERSAL TIME COORDINATED:** Universal Time Coordinated (UTC) is a 24-hour timekeeping system. The hours, minutes, and seconds expressed by UTC represent the time-of-day at the Earth's prime meridian (0° longitude) located near Greenwich, England. The World Meteorological Organization (WMO) has adopted the UTC as the standard time for reporting all meteorological data internationally. Times in UTC sometimes get the suffix Z, i.e. 16Z. From the mnemonic "Zulu", as used in international marine communications standards. NIST Time and Frequency Division (http://www.nist.gov/pml/div688/grp40/enc-ch.cfm#utc)

Meta Feature: Universal Time Coordinated (UTCTIM)

Primitives: Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1

Reference:

NIST Time and Frequency Division (http://www.nist.gov/pml/div688/grp40/enc-ch.cfm#utc)

Remarks:
- All time attributes shall be populated using UTC time instead of local time.

1.38   Vertical Reference Frame

WMO Definition: **VERTICAL REFERENCE FRAME:** Insert definition here

Meta Feature: Universal Time Coordinated (VERTRF)

Primitives: Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1

Reference:

Remarks:
- All time attributes shall be populated using UTC time instead of local time.

Comment [CS1]: This will be defined in the next iteration. NOAA Office of Coast Survey is currently assisting with the creation of a complex reference frame for the Weather Overlay specifications.

Comment [CS2]: This attribute will be created with the assistance of the NOAA Office of Coast Survey. It will be included in the next draft of the Weather Overlay feature catalog.

1.39 Watch/Warning

WMO Definition: **WATCH/WARNING:** A notification issued to warn mariners about conditions that could affect the safety of life and property at sea.				
Geo Feature: Point, Curve, Surface				
Primitives: Watch/Warning (WRNING)				
Attribute	**Acronym**	**Allowable Encoding Value**	**Type**	**Multiplicity**
Watch/Warning			C	1,1
Category or Watch/Warning	CATWRN	1: Small Craft 2: Strong Wind 3: Gale 4: Storm Force Winds 5: Hurricane Force Winds 6: Tropical Depression 7: Tropical Storm 8: Hurricane 9: Tropical Cyclone 10: Typhoon 11: Volcanic Ash 12: Freezing Spray 13: Heavy Freezing Spray 14: Squall 15: Tornado 16: Waterspout 17: High Water Level 18: Strong Ice Pressure 19: Rapid Closing of Leads 20: Reduced Visibility 21: Special	(S) EN	1,1
Warning Type	WTCWRN	1: Advisory 2: Watch 3: Warning	(S) EN	1,1
Information			C	0,*
Language		ISO 639-3	(S) TE	0,1
Text	(INFORM)		(S) TE	1,1
Textual description			C	0,*
File reference	(TXTDSC)		(S) TE	1,1
Language		ISO 639-3	(S) TE	0,1
Time			C	1,1
Issue Time	ISSTIM		(S) DT	0,1
Next Update Time	NUPTIM		(S) DT	0,1

Valid Time	VALTIM		(S) DT	1,1
Warning End Time	WRNEND		(S) DT	0,1
Warning Start Time	WSTART		(S) DT	1,1

Remarks:
- INFORM attribute should be populated with the warning headline, with the phrase. "See Textual Description for additional information."

1.40 Wave

WMO Definition: **WAVE:** Very generally, any pattern with some roughly identifiable periodicity in time and/or space. (IOC-No. 37, p. 129 (1)) More specifically, a disturbance propagated by virtue of periodic motions (oscillations) of the particles of the medium. At any point in the medium, the displacement is a function of location within the medium. (IOC-No. 37, p. 129 (2)) Wave raised by the wind blowing in the immediate neighbourhood of an observation site at the time of observation (WMO-No. 182, W1130)

Geo Feature: Wave (WAVWAV)

Primitives: Point, Curve, Surface

Attribute	Acronym	Allowable Encoding Value	Type	Multiplicity	
Significant Wave Period	SIWAPE		IN	0,1	
Information			C	0,*	
Language		ISO 639-3	(S) TE	0,1	
Text	(INFORM)		(S) TE	1,1	
Textual description			C	0,*	
File reference	(TXTDSC)		(S) TE	1,1	
Language		ISO 639-3	(S) TE	0,1	
Time			C	1,1	
Issue Time	ISSTIM		(S) DT	0,1	
Next Update Time	NUPTIM		(S) DT	0,1	
Valid Time	VALTIM		(S) DT	1,1	
Wave Direction			C	1,1	
Azimuth Degrees of Significant Waves	DEGWAV		(S) IN	0,1	
Category of Significant Wave Direction	SIWADE	1: North (N) 2: North-East (NE) 3: East (E) 4: South-East (SE) 5: South (S) 6: South-West (SW) 7: West (W) 8: North-West (NW)	(S) EN	1,1	
Wave Height			C	1,1	
Category of Significant Wave Height	CATSEH	1: Calm (glassy) 2: Calm (rippled) 3: Smooth (wavelets) 4: Slight 5: Moderate 6: Rough 7: Very Rough	(S) EN	1,1	

		8: High 9: Very high 10: Phenomenal		
Water Height Units	HUNITS	1: Meters 2: Feet	(S) EN	0,1
Significant Wave Height	SIWAHE		(S) IN	0,1
Wave Height Change			C	0,1
Change in Significant Wave Height	CHWAHE	1: Building 2: Subsiding	(S) EN	1,1
Water Height Units	HUNITS	1: Meters 2: Feet	(S) EN	1,1
Wave Height Change Time Interval	WAHETI		(S) IN	1,1
Wave Period Change			C	0,1
Change in Significant Wave Period	CHWAPE	1: Increasing 2: Decreasing	(S) EN	1,1
Wave Period Change Time Interval	WASWTI		(S) IN	1,1

Reference:

WMO-No. 471, Annex 2.B, Multilingual List of Terms used in Weather and Sea Bulletins

WMO-No. 558, Appendix I.2, Multilingual List of Terms used in Weather and Sea Bulletins

Remarks:
- Only populate the INFORM attribute with high-impact or critical information.

- DEGWAV may be populated in addition to SIWADE to indicate direction.

- SIWAHE may be coded in addition to CATSEH to indicate wave height; HUNITS must be populated if SIWAHE is populated.