

S-412 Concept Definitions

<u>CONCEPT</u>	<u>OUR DRAFT DEFINITION</u>
Weather Warning (Feature Type)	A product issued by a national authority when a specific weather scenario or event that threatens people or property meets criteria defined by WMO (WMO No. 558 and No. 471) or by a national authority where applicable.
Wind Warning (Feature Type)	A product issued by a national authority when high wind speeds pose a hazard or are life-threatening.
Wind Warning Threshold (Simple Attribute)	Represents the wind warning that has been exceeded or forecast to be exceeded.
Near Gale Force (Enumeration Value)	Wind speeds between 28 and 33 knots (Beaufort scale wind force 7) are forecast or occurring.
Gale Force (Enumeration Value)	Wind speeds between 34 and 47 knots (Beaufort scale wind force 8 or 9) are forecast or occurring.
Storm Force (Enumeration Value)	Wind speeds between 48 and 63 knots (Beaufort scale wind force 10 or 11) are forecast or occurring.
Hurricane Force (Enumeration Value)	Sustained wind speeds 64 knots or higher (Beaufort scale wind force 12) are forecast or occurring.

S-412 Concept Definitions

Beaufort Force (Simple Attribute)	Wind force scale, originally based on the state of the sea, expressed in numbers from 0 to 12, as defined by WMO (WMO 306 Manual on Codes, Volume I.1 – International Codes). <i>Note: for S-412, we will limit the attribute to enumeration values 7-12.</i>		
Enumeration Values for Beaufort Force (Enumeration Value)	1: Light Air 2: Light Breeze 3: Gentle Breeze 4: Moderate Breeze	5: Fresh Breeze 6: Strong Breeze 7: Near Gale 8: Gale	9: Strong Gale 10: Storm 11: Violent Storm 12: Hurricane 99: Calm Wind
Maximum Wind Speed (Complex Attribute)	When applied to a warning or forecast polygon, refers to the maximum wind speed or range of wind speeds found within the contour of the polygon.		
Significant Wave Height Warning (Feature Type)	A product issued by a national authority when sea state conditions pose a hazard or are life-threatening.		
Significant Wave Height Warning Threshold (Simple Attribute)	Represents the significant wave height warning that has been exceeded or forecast to be exceeded based on predetermined bins of significant wave height values		
Two And A Half To Four Metres (Enumeration Value)	Significant wave heights between 2.5 and 4 metres (8-13 feet) are forecast or occurring.		
Four To Six Metres (Enumeration Value)	Significant wave heights between 4 and 6 metres (13-20 feet) are forecast or occurring.		
	Significant wave heights between 6 and 9 metres (20-30 feet) are forecast or occurring.		

S-412 Concept Definitions

Six To Nine Metres (Enumeration Value)	
Nine To Fourteen Metres (Enumeration Value)	Significant wave heights between 9 and 14 metres (30-45 feet) are forecast or occurring.
Greater Than Fourteen Metres (Enumeration Value)	Significant wave heights greater than 14 metres (>45 feet) are forecast or occurring.
Ice Accretion Warning (Feature Type)	A product issued by a national authority when ice accumulation rates pose a hazard to vessels.
Ice Accretion Rate (Simple Attribute)	Represents the ice accretion warning that has been exceeded or forecast to be exceeded based on ice accumulation rates.
Moderate Icing (Enumeration Value)	Ice accumulation rates between 0.7 and 2 centimetres per hour are forecast or occurring.
Severe Icing (Enumeration Value)	Ice accumulation rates greater than 2 centimetres per hour are forecast or occurring.
Source of Icing (Simple Attribute)	The type of weather phenomenon causing hazardous ice accretion.
Freezing Spray	Water droplets transported through air at below freezing temperatures.

S-412 Concept Definitions

(Enumeration Value)	
Freezing Rain (Enumeration Value)	Precipitation drops freezing on impact to form a coating of clear ice (glaze) on the ground and on exposed objects.
Freezing Fog (Enumeration Value)	Tiny, supercooled liquid water droplets in fog can freeze instantly on exposed surfaces when surface temps are at or below freezing.
Other Icing Source (Enumeration Value)	Source of icing is unknown or is different from other types of icing sources.
Thunderstorm Warning (Feature Type)	A product issued by a national authority when an area of thunderstorms or squalls poses a hazard. Conditions could include strong winds, locally higher waves, potentially heavy precipitation, hail, and dangerous lightning strikes.
Restricted Visibility Warning (Feature Type)	A product issued by a national authority when horizontal visibility is degraded to less than 0.5 nautical miles by fog, smoke, dust, haze, heavy precipitation, or any other phenomena.
Weather Warning Number (Simple Attribute)	Identification number given to a specific weather warning.
Weather Warning Message (Complex Attribute)	Text message associated with a weather warning polygon.
	A combination of written text and language indication.

S-412 Concept Definitions

Language Text (Complex Attribute)	
Language (Simple Attribute)	The method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way.
Text (Simple Attribute)	A non-formatted digital text string.
Issued Date Time (Simple Attribute)	The time, expressed in Universal Coordinated Time (UTC) at which an object and its attributes are issued from an agency.
Next Update Date Time (Simple Attribute)	The time, expressed in Universal Time Coordinated (UTC) an object and its attributes are scheduled to be updated.
Cancellation Date (Simple Attribute)	Date and time of cancelling a notice or warning.
Date Time Range (Complex Attribute)	The range of time a feature is valid for
Date Time Start (Simple Attribute)	The beginning of a time range, expressed in Universal Time Coordinated (UTC)
Date Time End (Simple Attribute)	The end of a time range, expressed in Universal Time Coordinated (UTC)

S-412 Concept Definitions

Data Provider (Information Type)	The national authority providing a data in an official capacity.
Country Name (Simple Attribute)	The name of a nation.
Contact Information (Complex Attribute)	Information about where inquiries can be sent.
Mailing Address (Simple Attribute)	The physical address a parcel may be sent to.
Telephone Number (Simple Attribute)	Telephone number of an entity.
Email Address (Simple Attribute)	Identifies an email box to which email messages are delivered.
Agency Name (Simple Attribute)	The name of an agency, entity or organization
Web Address (Simple Attribute)	A reference to a web resource that specifies its location on a computer network and a mechanism for retrieving it.

S-412 Concept Definitions

METAREA Name (Simple Attribute)	A name referencing a defined geographical area of the ocean used to coordinate the transmission of meteorological information and services to mariners.		
Enumeration Values for METAREA Name (Enumeration Value)	1: METAREA I 2: METAREA II 3: METAREA III 4: METAREA IV 5: METAREA V 6: METAREA VI 7: METAREA VII	8: METAREA VIII 9: METAREA IX 10: METAREA X 11: METAREA XI 12: METAREA XII 13: METAREA XIII 14: METAREA XIV	15: METAREA XV 16: METAREA XVI 17: METAREA XVII 18: METAREA XVIII 19: METAREA XIX 20: METAREA XX 21: METAREA XXI
Issuing Service (Complex Attribute)	The number of the METAREA, name of the Nation, and the National Meteorological and Hydrological Service (NMHS) or National Authority that broadcast the warning.		
Preparation Service (Complex Attribute)	The name of the Nation and National Meteorological and Hydrological Service (NMHS) or National Authority that prepared the warning and transferred it to the relevant Issuing Service for broadcast if not the same.		
Issuing Service Name (Complex Attribute)	The identifier that indicates which organization issued meteorological and oceanographic data.		

Phrases to use when inputting new Concepts:

Proposed Change: New feature transferred from Feature Concept Dictionary Register.

Updated concept from S-412 product Specification

Justification: Initial population of Data Dictionary Register.

Updated to be more in line with S-412

S-412 Concept Definitions

Modification History:

03/15/24: Suggested changes to enumeration values for wind warning threshold and freezing spray warning threshold based on discussion and [Editing S-412 Enumerations Notes](#)

03/27/24: Added new optional simple attribute for text pop-up boxes associated with warning polygons.

04/11/24: Added suggested changes to Freezing Spray Warnings to include "Ice Accretion". Added "Same as registry definition" instead of copying the definition into the middle column for some features. Added maximum and minimum display scale attributes at the bottom.

04/12/24: Added optimum display scale (S-101 doc mentioned it is a required attribute).

04/23/24: Added new terms for the updated ice accretion warning feature type. Deleted the display scale attributes as they are not required for S-100, and may not be necessary for S-412. Can always add back later, if needed.

04/30/24: Added definitions for source of icing, freezing rain, freezing spray, and freezing fog.

05/08/24: Changed "Reduced Visibility" to "Restricted Visibility" to better match terminology used in WMO 558 and other documentation that is accepted and used in the marine community.

07/16/24: Added significant wave height threshold concepts, metarea name attribute, and enumeration values for Beaufort Force attribute

07/30/24: Edited to use Oxford-English within names and new definitions

08/20/24: Added draft definition for Metarea Name

08/21/24: Changed "Metarea" to "METAREA", following the WMO spelling.

08/29/24: Added attribute "nextUpdateDateTime". This attribute will be linked to weatherWarning and inherited by sub-types

09/19/24: Added complex attribute "languageText", which consists of "language" and "text". These will fall under "weatherWarningMessage" which will now be a complex attribute, allowing the user to write the text in a different language, but must indicate the language using language code list (3-characters, ex: eng is English). Note the "text" attribute allows for 300 characters as it is currently defined in the registry. It was last updated in March 2024.

10/08/24: Added new concept complex attributes "issuingService", "preparationService", and "maximumWindSpeed". Also added an existing text complex attribute "issuingServiceName", which uses "language" and "text" attributes (all already registered).

10/15/24: Edited the beaufort force enumeration value for calm winds to be "99" instead of 13 to avoid confusion.