



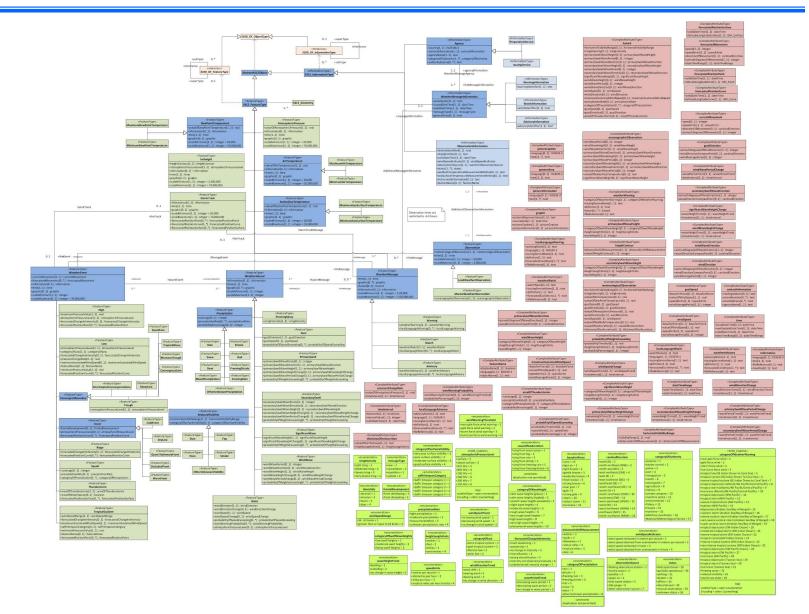
Binding Specific Concepts to Generic Concepts

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S-412 Original Data Model







Duplicate attribute sets can be simplified



«ComplexAttributeType» windDirection

+cardinalDirection[0..1] : cardinalDirection +azimuthDegrees[1] : integer

«ComplexAttributeType» windGustDirection

+cardinalDirection[0..1] : cardinalDirection +azimuthDegrees[1] : integer

«ComplexAttributeType» windWaveDirection

+cardinalDirection[0..1] : cardinalDirection +azimuthDegrees[1] : integer

«ComplexAttributeType» primarySwellWaveDirection

+cardinalDirection[0..1] : cardinalDirection +azimuthDegrees[1] : integer

«ComplexAttributeType» secondarySwellWaveDirection

+cardinalDirection[0..1] : cardinalDirection +azimuthDegrees[1] : integer



«ComplexAttributeType» direction

+toFrom[1]: toFrom

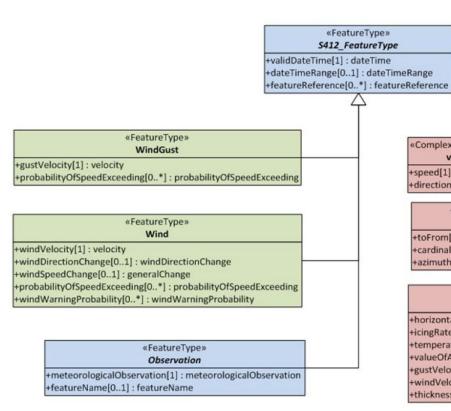
+cardinalDirection[0..1] : cardinalDirection

+azimuthDegrees[1]: integer



Another Example





«ComplexAttributeType» «ComplexAttributeType» speed velocity +valueOfSpeed[1]: real +speed[1]: speed +speedUnits[1]: speedUnits +direction[1]: direction +speedAveragePeriod[1]: speedAveragePeriod «ComplexAttributeType» «enumeration» direction toFrom +toFrom[1]: toFrom +to = 1+cardinalDirection[0..1]: cardinalDirection +from = 2+azimuthDegrees[1]: integer «ComplexAttributeType» meteorologicalObservation +horizontalVisibilityRange[0..1]: horizontalVisibilityRange +icingRate[0..1]: integer +temperature[0..2]: temperature +valueOfAtmosphericPressure[0..1]: real +gustVelocity[0..1]: velocity +windVelocity[0..1]: velocity

+thicknessOfIceAccretion[0..1]: integer

«enumeration» cardinalDirection +north (N) = 1 +north-northeast (NNE) = 2 +north-east (NE) = 3 +east-northeast (ENE) = 4 +east (E) = 5 +east-southeast (ESE) = 6 +southeast (SE) = 7 +south-southeast (SSE) = 8 +south (S) = 9 +south-southwest (SSW) = 10 +southwest (SW) = 11 +west-southwest (WSW) = 12 +west (W) = 13 +west-northwest (WNW) = 14 +northwest (NW) = 15 +north-northwest (NNW) = 16



Registry concerns



There are 22 separate instances in the registry:

DISTANCE

"a numerical description of how far apart two objects are."

measuredDistance:

waterwayDistance:

distanceOfImpactUpstream:

distanceOfImpactDownstream:

distanceFromNoticeMarkSecond:

distanceFromNoticeMarkFirst:

soundingDistanceMinimum:

soundingDistanceMaximum:

horizontalClearanceLength

sectorLineLength

waveLengthValue

verticalLength

horizontalLength

maximalPermittedLength

lengthRangeValue1*

lengthRangeValue2*

height leadMinWidth

leadMaxWidth

iceLeadWidth

horizontalWidth

horizontalClearanceWidth



Possible Issue and previous discussion



more complex, it adds another attribute

(another two, if you define a complex attribute as a 'container' for distance and distance Type).

Although it was agreed the principle is a better way of modelling the real world,

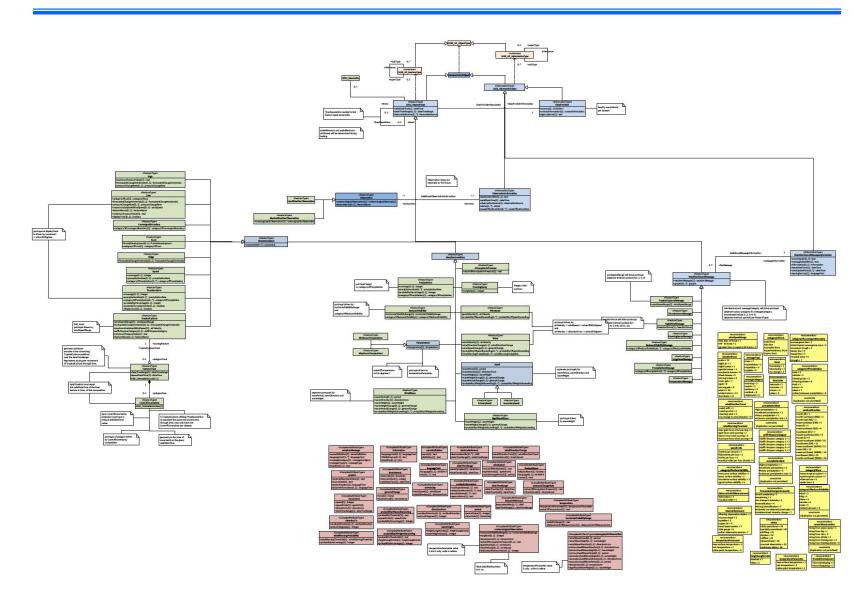
there is the reality that changing it now could hold up current product specification development.

It was confirmed that it would be added to the IHO registry manager's holistic review of the contents of the registry.



S-412 with reused concepts







Discussion



- a. Discuss options that encourage product specifications to use more general concepts
- b. Consider this proposal and provide feedback on S-412's usage of this data modeling methodology.
- c. If accepted, discuss best-practices measures for other products to adopt this methodology.