IHO S121 Feature Model for Maritime Limits and Boundaries

[Comments]

7 December 2016

Introduction

The S121 information model is defined as a single set of data objects organized into groups.

The conceptual model defines four generic object types Location, Limit, Zone, or a Space. From these generic S121 object types any S121 object may be defined. This provides great flexibility, and allows any required feature to be developed by specializing the generic objects.

When used in a data set the object may be represented using a geometry type (Point, Curve/Line, Surface/Area). For a "Space" objects the geometric representation may be as a Surface/Area with an elevation attribute.

Feature Types

A set of predefined feature types have been established that include the objects required for Marine Limits and Boundaries. The stereotype <FeatureType> is used to identify the defining objects. The stereotype <MLB> (Maritime Limits and Boundaries) is used to identify the MLB defining objects.

Figure 1 illustrates the relationship of the feature types to the defining objects. The information contained in the defining objects' attributes is included in the Feature Catalogue for each feature as applicable.

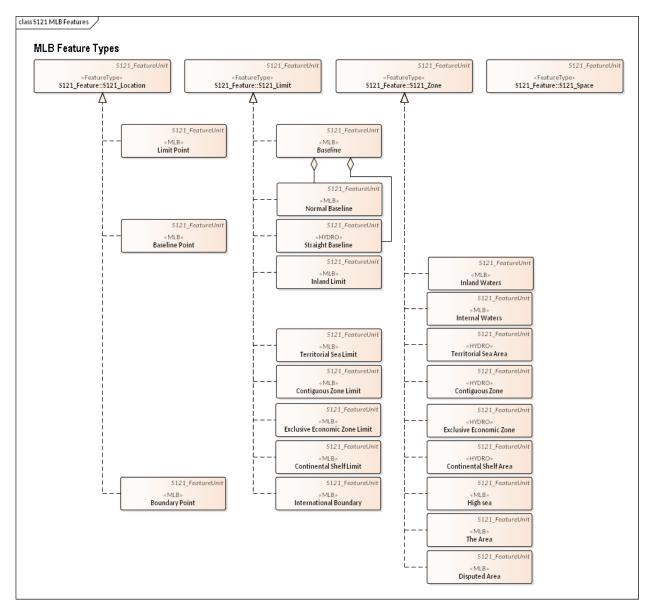


Figure 1 - MLB Features

The "location" feature types are:

Limit Point - A limit point is point on the outer limit of a maritime zone.

Baseline Point – A baseline point is a point on (i) a baseline from which the breadths of the territorial sea, contiguous zone, exclusive economic zone, and continental shelf (up to 200 nautical miles) are measured, or (ii) on an archipelagic baseline.

Boundary Point – A boundary point is a point on a boundary line between two or more States.

The "Limit" feature types are:

Baseline (Articles 5, 6, 7, 9, 10, 11, 12, 13, 14 and 47 of UNCLOS) – A baseline is a line from which the breadths of the territorial sea, contiguous zone, exclusive economic zone, and continental shelf (up to 200 nautical miles) are measured¹.. A baseline may be determined by a combination of any of the methods provided for in articles 5, 6, 7, 9, 10, 11, 12, 13, 14 and 47 of the United Nations Convention on the Law of the Sea (UNCLOS).

Normal Baseline (Articles 5, 6 and 13 of UNCLOS) – A normal baseline is formed by joining baseline points collected along:

- (i) the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State;
- (ii) the seaward low-water line of the reef, as shown by the appropriate symbol on charts officially recognized by the coastal State, in the case of islands situated on atolls or of islands having fringing reefs; and
- (iii) the low-water line of low tide elevations which are situated at wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island

.

Straight Baseline (Articles 7, 9 and 10 of UNCLOS) –Straight baselines are formed by joining appropriate points selected along the furthest seaward extent of the low-water line. Straight baselines can be used in localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity., usually known as straight baseline turning points². According to UNCLOS:

- (i) Where because of the presence of a delta and other natural conditions the coastline is highly unstable, the appropriate points may be selected along the furthest seaward extent of the low-water line and, notwithstanding subsequent regression of the low-water line, the straight baselines shall remain effective until changed by the coastal State in accordance with this Convention;
- (ii) The drawing of straight baselines must not depart to any appreciable extent from the general direction of the coast;
- (iii) The sea areas lying within the lines must be sufficiently closely linked to the land domain to be subject to the regime of internal waters;
- (iv) Straight baselines shall not be drawn to and from low-tide elevations, unless lighthouses or similar installations which are permanently above sea level have been built on them or except in instances where the drawing of baselines to and from such elevations has received general international recognition;
- (v) Straight baselines may not be applied by a State in such a manner as to cut off the territorial sea of another State from the high seas or an exclusive economic zone;

¹ IHO Dictionary, S-32, 5th Edition, 390

² IHO Dictionary, S-32, 5th Edition, 393

- (vi) If a river flows directly into the sea, the baseline shall be a straight line across the mouth of the river between points on the low-water line of its banks;
- (vii) In the case of bays, a closing line may be drawn between the low-water marks of its natural entrance points, according to these criteria:
 - a. An indentation shall not be regarded as a bay unless its area is as large as, or larger than, that of the semi-circle whose diameter is a line drawn across the mouth of that indentation:
 - b. For the purpose of measurement, the area of an indentation is that lying between the low-water mark around the shore of the indentation and a line joining the low-water mark of its natural entrance points. Where, because of the presence of islands, an indentation has more than one mouth, the semi-circle shall be drawn on a line as long as the sum total of the lengths of the lines across the different mouths. Islands within an indentation shall be included as if they were part of the water area of the indentation;
 - c. If the distance between the low-water marks of the natural entrance points of a bay does not exceed 24 nautical miles, a closing line may be drawn between these two low-water marks, and the waters enclosed thereby shall be considered as internal waters.
 - d. Where the distance between the low-water marks of the natural entrance points of a bay exceeds 24 nautical miles, a straight baseline of 24 nautical miles shall be drawn within the bay in such a manner as to enclose the maximum area of water that is possible with a line of that length.

Archipelagic baseline (Article 47 of UNCLOS) - Archipelagic baselines are formed by joining the outermost points of the outermost islands and drying reefs of the archipelago. According to the Convention:

- (i) Archipelagic baselines can be drawn by an Archipelagic States provided that within such baselines are included the main islands and an area in which the ratio of the area of the water to the area of the land, including atolls, is between 1 to 1 and 9 to 1:
- (ii) The length of such baselines shall not exceed 100 nautical miles, except that up to 3 per cent of the total number of baselines enclosing any archipelago may exceed that length, up to a maximum length of 125 nautical miles.
- (iii) The drawing of such baselines shall not depart to any appreciable extent from the general configuration of the archipelago.
- (iv) Such baselines shall not be drawn to and from low-tide elevations, unless lighthouses or similar installations which are permanently above sea level have been built on them or where a low-tide elevation is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the nearest island.
- (v) The system of such baselines shall not be applied by an archipelagic State in such a manner as to cut off from the high seas or the exclusive economic zone the territorial sea of another State.
- (vi) If a part of the archipelagic waters of an archipelagic State lies between two parts of an immediately adjacent neighbouring State, existing rights and all other

legitimate interests which the latter State has traditionally exercised in such waters and all rights stipulated by agreement between those States shall continue and be respected.

(vii) For the purpose of computing the ratio of water to land under paragraph I, land areas may include waters lying within the fringing reefs of islands and atolls, including that part of a steep-sided oceanic plateau which is enclosed or nearly enclosed by a chain of limestone islands and drying reefs lying on the perimeter of the plateau.

Inland Limit – Inland Limit is a segment of line used to delineate inland waters. It is a boundary between Internal Waters and Inland Waters.

Outer Limit of the Territorial Sea (Articles 3 and 4 of UNCLOS) – The outer limit of the territorial sea is a line computed at a distance not exceeding 12 nautical miles, measured from the baselines determined in accordance with UNCLOS, unless a boundary line with an adjacent or opposite coastal State makes does not allow to extend it up to that distance.

Outer Limit of the Contiguous Zone(Article 33 of UNCLOS) –The outer limit of the contiguous zone is a line computed at a distance not exceeding 24 nautical miles, measured from the baselines determined in accordance with UNCLOS, unless a boundary line with an adjacent or opposite coastal State does not allow to extend it up to that distance.)

Outer Limit of the Exclusive Economic Zone Limit (Article 57 of UNCLOS) –The outer limit of the exclusive economic zone is a line computed at a distance not exceeding 200 nautical miles, measured from the baselines determined in accordance with UNCLOS, unless a boundary line with an adjacent or opposite coastal State does not allow to extend it up to that distance. Outer limit of the Continental Shelf (Article 76 of UNCLOS) – The outer limit of the continental shelf is a line delineating the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend out to that distance.

Roadsted (Article 12 of UNCLOS) - Roadsteads which are normally used for the loading, unloading and anchoring of ships, and which would otherwise be situated wholly or partly outside the outer limit of the territorial sea, are included in the territorial sea.

International Boundary – International boundary is a delimitation line between two or more coastal States with adjacent or opposite coasts, determined by agreement or through a third-party dispute settlement mechanism.

The "zone" feature types are:

Inland Waters – An area describing waters found on the landward side of the Inland Waters limits.

Internal Waters (Article 8 of UNCLOS) – Internal waters are waters on the landward side of the baseline.

Archipelagic Waters (Article 47 of UNCLOS) – Archipelagic waters are waters enclosed by the archipelagic baselines, regardless of their depth or distance from the

coast. The regime of archipelagic waters extends to the air space over the archipelagic waters, as well as to their seabed and subsoil.

Territorial Sea (Part II, Sections 1-3, of UNCLOS) – The territorial sea is a belt of sea beyond a costal States' land territory and internal waters and, in the case of an archipelagic State, its archipelagic waters. The breadth of the territorial sea cannot exceed 12 nautical miles, measured from the baselines determined in accordance with UNCLOS, unless a boundary line with an adjacent or opposite coastal State does not allow to extend it up to that distance. The regime of the territorial sea applies to the air space over the territorial sea, as well as to its seabed and subsoil.

Contiguous Zone (Part II, Section 4, of UNCLOS) – The contiguous zone is a zone contiguous to a coastal State's territorial sea. The contiguous zone extends from the outer limit of the territorial sea up to a distance not exceeding 24 nautical miles, measured from the baselines determined in accordance with UNCLOS, unless a boundary line with an adjacent or opposite coastal State does not allow to extend it up to that distance..

Exclusive Economic Zone (Part V of UNCLOS) – The exclusive economic zone, is an area beyond and adjacent to a costal State's territorial sea. The exclusive economic zone extends from the outer limit of the territorial sea up to a distance not exceeding 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, unless a boundary line with an adjacent or opposite coastal State does not allow to extend it up to that distance. The regime of the exclusive economic zone applies to its water column, seabed and subsoil.

Continental Shelf (Part VI of UNCLOS) – The continental shelf is a zone of a coastal State that comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend out to that distance. The regime of the continental shelf applies only to its seabed and subsoil.

High Seas (Part VII of UNCLOS) – The high seas are a zone that is not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State. The regime of the high seas applies only to the water column.

The Area (Part XI of UNCLOS) – The area is a zone beyond the limits of national jurisdiction. The area is delineated by the outer limits of the continental shelf of coastal States that surrounds it. The regime of the area applies only to its seabed and subsoil.

Disputed Zone – A disputed zone is a zone claimed by two or more coastal States, or resulting from an overlap of zones the computed limits of which appertain to different coastal States. The limit(s) of a disputed area would correspond to the type(s) of limit(s) that would apply if the zone(s) were not disputed.

Four of the feature types already have definitions in the S-100 Feature Concept Dictionary. They have the stereotype <HYDRO>. These are: Territorial Sea Area, Contiguous Zone, Exclusive Economic Zone and Continental Shelf Area. These are cases where context is important. In the navigational context these features are shown to inform a navigator since it may have impact upon the rules of passage. However in the Maritime Limits and Boundaries context these features may carry a legal status as part of a treaty

or declaration of a nation's sovereign boundary. There is no problem having two uses for the same feature type as long as the context for the meaning is maintained.

Attribute Types

The Rights, Restrictions, Responsibility and Party structure effectively provides attributes to the S121 feature types by reference.

The S121_FeatureUnit is a feature type and may take on any of the feature attributes described in the Feature Concept Dictionary. Specific attributes are bound to specific features in the product specification. Figure F3 shows S121 FeatureUnit and its attributes.

The S121 FeatureUnit also has five built-in attributes. The first three are:

typeName: The name of the feature, i.e. the 6 characters or CamelCase code identifying the feature type (as defined in the Feature Concept Dictionary).

Type: A code from S121_FeatureType. This code list includes types that have a common characteristic related to the marine environment. The code list is registered in the Feature Concept Dictionary as listed values and as such can be expanded to include all aspects of the legal context. The initial contents are: **MLB** (Marine Limits and Boundaries), and **A76** (UNCLOS article 76).

fulD: Reference to information objects using the Oid (Object ID) attribute.

In addition there are two attributes inherited through the S121_VersionedObject structure. These are:

beginLifespanVersion: start time of a specific instance version.

endLifespanVersion: optional end time of a specific instance version.

S121_VersionedObject «FeatureType,abstract» S121_Feature::S121_FeatureUnit + fuID: Oid + typeName: CharacterString [0..1] + type: S121_FeatureType + label: CharacterString [0..1] + context: CharacterString [0..1] + releasability: CharacterString [0..1]

Figure 2 – S121_FeatureUnit Attributes

2.1 MLB Location Objects and Attributes

The S121 MLB Location Objects may take on any of the feature attributes described in the Feature Concept Dictionary. In addition the S121 MLB Location Objects inherit the attributes from S121_FeatureUnit: *typeName*, *type* and *uID*.

typeName: The name of the feature, i.e. the 6 character or CamelCase code identifying the feature type (as defined in the Feature Concept Dictionary).

Type: A code from S121_FeatureType. This code list includes types that have a common characteristic related to the marine environment. The code list is registered in the Feature Concept Dictionary as listed values and as such can be expanded to include all aspects of the legal context. The initial contents are: **MLB** (Marine Limits and Boundaries), and **A76** (UNCLOS article 76).

uID: Reference to information objects using the Oid (Object ID) attribute.

In addition it inherits the S121_VersionedObject attributes. These are:

beginLifespanVersion: start time of a specific instance version.

endLifespanVersion: optional end time of a specific instance version.

The baseline point feature object may optionally take on the attribute *pointType* from the codelist S121_LocationType.

Figure 3 shows MLB Location Objects and attributes.

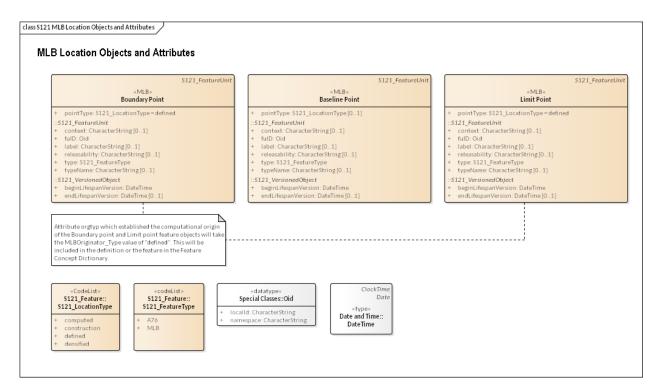


Figure 3 – MLB Location Objects and Attributes

2.2 MLB Limit Objects and Attributes

The S121 MLB Limit Objects may take on any of the feature attributes described in the Feature Concept Dictionary. In addition the S121 MLB Limit Objects inherit the attributes from S121_BAUnit: *typeName*, *type* and *uID*.

typeName: The name of the feature, i.e. the 6 character or CamelCase code identifying the feature type (as defined in the Feature Concept Dictionary).

Type: A code from S121_FeatureType. This code list includes types that have a common characteristic related to the marine environment. The code list is registered in the Feature Concept Dictionary as listed values and as such can be expanded to include all aspects of the legal context. The initial contents are: **MLB** (Marine Limits and Boundaries), and **A76** (UNCLOS article 76).

fulD: Reference to information objects using the Oid (Object ID) attribute.

In addition they inherit the S121_VersionedObject attributes. These are:

beginLifespanVersion: start time of a specific instance version.

endLifespanVersion: optional end time of a specific instance version.

The feature objects Inland Limit, Territorial sea outer limit, Normal baseline, Straight baseline, Contiguous zone limit, Exclusive economic zone limit, and Continental Shelf limit may optionally take on the attribute *limtyp* from the codelist S121_LimitType.

The feature objects Inland Limit, Territorial sea outer limit, Normal baseline, Straight baseline, Contiguous zone limit, Exclusive economic zone limit, Continental shelf limit and

International boundary may optionally take on the attribute *arctyp* from the codelist S121_LimitArcType.

The feature objects Normal baseline and Straight baseline take on the attribute *NBLType* and *NBLType* respectively. Both attributes are character strings.

The Figure 4 shows MLB Limit Objects and attributes.

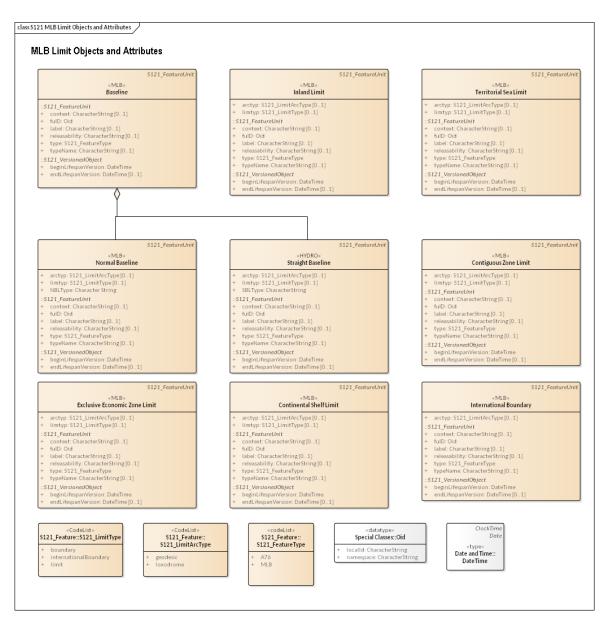


Figure 4 – MLB Limit Objects and Attributes

2.3 MLB Zone Objects and Attributes

The S121 MLB Zone Objects may take on any of the feature attributes described in the Feature Concept Dictionary. In addition the S121 MLB Zone Objects inherit the attributes from S121_BAUnit: *typeName*, *type* and *uID*.

typeName: The name of the feature, i.e. the 6 character or CamelCase code identifying the feature type (as defined in the Feature Concept Dictionary).

Type: A code from S121_FeatureType. This code list includes types that have a common characteristic related to the marine environment. The code list is registered in the Feature Concept Dictionary as listed values and as such can be expanded to include all aspects of the legal context. The initial contents are: **MLB** (Marine Limits and Boundaries), and **A76** (UNCLOS article 76).

fulD: Reference to information objects using the Oid (Object ID) attribute.

In addition they inherit the S121_VersionedObject attributes. These are:

beginLifespanVersion: start time of a specific instance version.

endLifespanVersion: optional end time of a specific instance version.

The S121 MLB Zone Objects may optionally take on the attribute *verdom* from the codelist S121 VerticalDomainType.

The Figure 5 shows MLB Zone Objects and attributes.

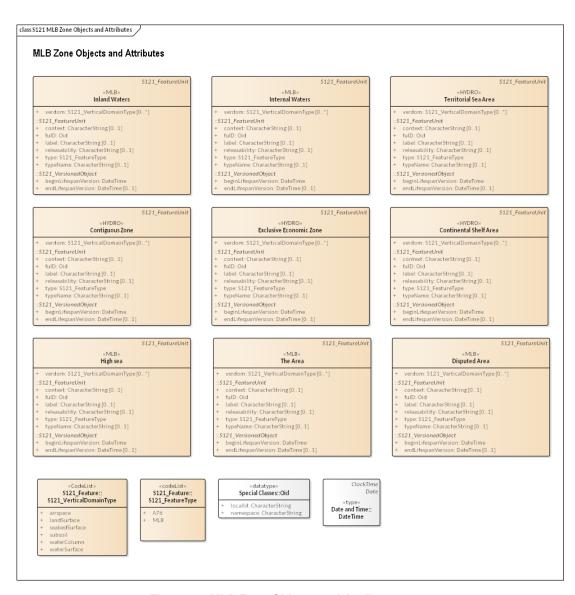


Figure 5 – MLB Zone Objects and Attributes

2.4 MLB Space Objects and Attributes

There no MLB Space objects defined. Any Space object will need to be generated from the generic object Space and registered in the Feature Catalogue for a particular product.

Feature Catalogue Entries

The objects and attributes identified for use in the S121 product specification are described using the same style as is used in the IHO S-57 Object Catalogue. This structure is compliant with the ISO 19110 standard for Object Catalogues and because it is already used by IHO for S-57 it means that it is easier to compare object and attribute entries with those in the IHO Register.

A.1.1. S121 Feature Objects

Feature	Type Register ID		4
	Domain	MLB	
	Alpha Code	DISARE	
	Name	Disputed Area	
	Alias		
	camelCase	DisputedArea	
	Numeric Code		
	Use Type	theme	
	Definition	An area of disputed jurisdiction.	
	Permitted Primitives	A	
	Remarks	A disputed area can be any type of zone. The limit of the zone would	
		correspond to the type of limit that would apply if the zone was not	
		disputed.	
	Item Status	proposed S121	
	Distinction		
	Attributes	verdom	
Feature	Type Register ID		33
	Domain	MLB	
	Alpha Code	BASEPT	
	Name	Baseline Point	
	Alias		
	camelCase	BaselinePoint	
	Numeric Code	Buschner onte	
	Use Type	theme	
	Definition	A baseline point is part of the territorial sea baseline model or of an	
		archipelagic baseline.	
	Permitted Primitives	P	
	Remarks	· · · · · · · · · · · · · · · · · · ·	
	Item Status	proposed S121	
	Distinction	proposed 5121	

pointType

Attributes

Domain Alpha Code Name Alias camelCase

Numeric Code Use Type

Hydro CONZNE **Contiguous Zone**

ContiguousZone

geo, theme

A zone contiguous to a coastal State's territorial sea, which may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured. The coastal state may exercise certain control in this zone subject to the provisions of International Law.

Permitted Primitives

Remarks

Definition

The coastal state may exercise certain control in this zone subject to the provisions of International Law. A contiguous zone is a zone that is bounded by the TESLIM (Territorial Sea limit), the CONLIM and or other limit objects such as an international boundary.

Item Status Distinction

proposed S121

Attributes

verdom

Feature Type Register ID

Domain Alpha Code Name Alias camelCase **Numeric Code Use Type** Definition

Permitted Primitives

Remarks Item Status Distinction

MLB CONLIM **Contiguous Zone Limit**

ContiguousZoneLimit

The outer limit of the State's Contiguous Zone.

proposed S121

ADMARE, COSARE, EXEZNE, FSHZNE, TESARE

Attributes

limtyp, arctyp

Domain Alpha Code Name Alias camelCase

Numeric Code Use Type Definition

Permitted Primitives

Remarks
Item Status
Distinction

MLB
COSLIM
Continental Shelf Limit
Extended Continental Shelf Limit
ContinentalShelfLimit
theme
The outer limit of the State's Continental Shelf.

37

39

Attributes

limtyp, arctyp

Feature Type Register ID

Domain
Alpha Code
Name
Alias
camelCase
Numeric Code
Use Type
Definition

Hydro COSARE

proposed S121

Continental Shelf Area

ContinentalShelfArea

geo, theme

The continental shelf of a coastal State comprises the sea bed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend out to that distance.

Permitted Primitives Remarks

Item Status Distinction Α

The Continental Shelf Area is a zone that is bounded by the EEZ and the COSLIM and / or other limit objects such as an international boundary.

proposed S121

ADMARE, CONZNE, EXEZNE, FSHZNE, TESARE

Attributes

verdom

Domain Alpha Code Name Alias

camelCase Numeric Code Use Type

Permitted Primitives

Remarks

Definition

Item Status
Distinction

Hydro EXEZNE

Exclusive Economic Zone

EEZ

ExclusiveEconomicZone

50

geo, theme

An area, not exceeding 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, subject to a specific legal regime established in the United Nations Convention on the Law of the Sea under which the coastal state has certain rights and jurisdiction

Δ

The Exclusive Economic Zone is a zone that is bounded by the TESLIM

(Territorial Sea limit), EEZLIM or other limit objects such as an

international boundary.

proposed S121

Attributes

verdom

Feature Type Register ID

Domain
Alpha Code
Name
Alias
camelCase
Numeric Code
Use Type
Definition

Permitted Primitives

Remarks Item Status Distinction

MLB

Exclusive Economic Zone Limit

ExclusiveEconomicZoneLimit

theme

The outer limit of the State's exclusive economic zone.

L

proposed S121

Attributes

limtyp, arctyp

Domain Alpha Code Name

Alias

camelCase
Numeric Code
Use Type
Definition

Permitted Primitives

Remarks Item Status Distinction MLB HIGHSE

High Sea

HighSea

theme

A zone that consists of the open ocean, not part of the exclusive economic zone, territorial sea or internal waters of any state. A term of international and maritime law per UNCLOS article 86.

Δ

The high sea is a zone that is bounded by the Exclusive Economic Zone.

proposed S121

Attributes

verdom

Feature Type Register ID

Domain
Alpha Code
Name
Alias
camelCase
Numeric Code
Use Type
Definition

Permitted Primitives

Remarks Item Status Distinction

MLB INLLIM Inland Limit

InlandLimit

theme

Inland Limit is a segment of line used to delineate inland waters. It is a boundary between Internal Waters and Inland Waters.

L

proposed S121

Attributes

limtyp, arctyp

Feature Type Register ID

Domain Alpha Code Name Alias camelCase Numeric Code Use Type

Permitted Primitives

Remarks Item Status Distinction

Definition

 MLB

INLWTR

Inland Waters

In land Waters

theme

An area describing waters found on the landward side of the Inland Waters limits.

Α

Synonymous with the EU Inspire Administrative Hierarchy Level

proposed S121

INTWTR

47

48

Attributes	verdom
Feature Type Register ID	50
Domain	MLB
Alpha Code	INTWTR
Name	Internal Waters
Alias	
camelCase	InternalWaters
Numeric Code	
Use Type	theme
Definition	A zone describing waters found on the landward side of the baselines of a State other than Inland Waters or Archipelagic Waters.
Permitted Primitives	L,A
Remarks	A zone that is bounded by the inland water, the land area and the
	territorial sea. (For legal definition see UNCLOS Article 8).
Item Status	proposed S121
Distinction	INLWTR
Attributes	verdom
Feature Type Register ID	51
Domain	MLB
Alpha Code	INTBND
Name	International Boundary
A I!	
Alias	
camelCase	InternationalBoundary
7	InternationalBoundary
camelCase	InternationalBoundary theme
camelCase Numeric Code	·
camelCase Numeric Code Use Type	theme
camelCase Numeric Code Use Type	theme International boundary is a boundary object reflecting a treaty or other
camelCase Numeric Code Use Type Definition	theme International boundary is a boundary object reflecting a treaty or other agreement between two or more sovereign states.
camelCase Numeric Code Use Type Definition Permitted Primitives	theme International boundary is a boundary object reflecting a treaty or other agreement between two or more sovereign states. L
camelCase Numeric Code Use Type Definition Permitted Primitives	theme International boundary is a boundary object reflecting a treaty or other agreement between two or more sovereign states. L Specific vertical domains can be assigned to this object to describe its
camelCase Numeric Code Use Type Definition Permitted Primitives Remarks	theme International boundary is a boundary object reflecting a treaty or other agreement between two or more sovereign states. L Specific vertical domains can be assigned to this object to describe its role.

arctyp

Attributes

Domain Alpha Code Name Alias

camelCase **Numeric Code Use Type Definition**

Permitted Primitives

Remarks **Item Status** Distinction

MLB MLIMIT Limit Limit theme The S121_Limit object is an object that defines any limits or boundaries either relating to terrestrial, marine or both environments. proposed S121

Attributes

limtyp, arctyp

MLB

MLOCTN

Location

Location

location.

Feature Type Register ID

Domain Alpha Code Name Alias camelCase **Numeric Code Use Type Definition**

Permitted Primitives Remarks

Item Status Distinction

Р

To portray a geodesic or loxodrome curve correctly, additional vertices may be included in the dataset. These are densified locations. These vertices would not have formed part of the original source information. The pointType attribute can be used to differentiate between a defined vertex (e.g. declared in a treaty) with a vertex densified to ensure correct GIS depiction. A computed location is also not part of the original source information, but is calculated as the result of the original source guidance, such as the intersection between arcs, geodesics, or loxodromes. A construction vertex is any arbitrary position established to support computation.

The Location object is an object that defines the underlying structure of

proposed S121

Attributes

pointType

Domain Alpha Code Name Alias camelCase

camelCase
Numeric Code
Use Type
Definition

Permitted Primitives

Remarks Item Status Distinction MLB
NBASLN
Normal Baseline

NormalBaseline

theme
A normal baseline is part of the territorial sea baseline model.
L
proposed S121

Attributes

limtyp, arctyp, NBLType

Feature Type Register ID

Domain Alpha Code Name Alias camelCase Numeric Cod

camelCase Numeric Code Use Type Definition

Permitted Primitives

Remarks

Item Status
Distinction

Attributes

MLB

MSPACE Space

-

Space

theme

The Space object is an object that defines a volume which is logically delimited by instances of zone objects.

P,L,A

A Space is an object of 2 dimensions with a height description located in 2 or 3 dimensional space. This is sometimes called 2 1/2 dimensions. A Space has the same geometry as a Zone with the attributes of vertical position. The vertical position may be explicit numerical attributes of height above a reference or a textual description.

proposed S121

verdom

Feature Type Register ID Domain

Name

Alias camelCase

Numeric Code

Hydro STRLNE

Alpha Code Straight Baseline

StraightBaseline

132

Use Type geo, theme **Definition**

A baseline is the line from which the outer limits of the territorial sea and certain other outer limits are measured. (IHO Dictionary, S-32, 5th

Edition, 390)

Straight baselines are a system of straight lines joining specified or discrete points on the low-water line, usually known as straight baseline

turning points. (IHO Dictionary, S-32, 5th Edition, 393)

Permitted Primitives

Remarks

A straight line used in place of the normal baseline. Types of straight baseline are: straight, archipelagic, bay closing, river mouth closing,

historic bay closing.

Item Status proposed S121 Distinction

Attributes

limtyp, arctyp, SBLType

Feature Type Register ID

Alias

Numeric Code

Domain Hydro Alpha Code TESARE Name **Territorial Sea Area**

camelCase TerritorialSeaArea

135

Α

Use Type geo, theme Definition

The territorial sea is a belt of water of a defined breadth but not exceeding 12 nautical miles measured seaward from the territorial sea

baseline.

Permitted Primitives

Remarks

The territorial sea area is a zone that is bounded by the TESLIM (Territorial Sea limit), the baseline BASELN and or other limit objects

such as an international boundary.

Item Status proposed S121

Distinction ADMARE, CONZNE, COSARE, EXEZNE, FSHZNE, RESARE

Attributes verdom

Domain
Alpha Code
Name
Alias
camelCase

camelCase Numeric Code Use Type Definition

Permitted Primitives

Remarks

Item Status Distinction MLB TESLIM

Territorial Sea Limit

TerritorialSeaLimit

theme

This object is used to express the outer limit of the State's territorial

1

TESLIM is used to express the outer extent of TESARE. TESARE is a zone that is bounded by the TESLIM (Territorial Sea limit), the baseline BASELN and or other limit objects such as an international boundary.

proposed S121

Attributes

limtyp, arctyp

Feature Type Register ID Domain

Alpha Code Name Alias camelCase Numeric Code Use Type Definition

Permitted Primitives Remarks

Item Status Distinction MLB

ISAARE
The Area

TheArea

theme

The area of the seabed not under the jurisdiction of any state. This area lies beyond the extension of the continental shelf awarded to coastal States under Article 76 of UNCLOS.

L,A

In the United Nations Law of the Sea terminology, the sea-bed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction. (IHO Hydrographic Dictionary, S-32, 5th Edition, 227) (For legal definition see UNCLOS Part XI). The Area is a zone that is bounded by the states sovereign extent which may be the Continental Shelf or the Exclusive Economic Zone.

proposed S121

ADMARE, CONZNE, COSARE, FSHZNE, TESARE, EXEZNE, HIGHSE

Attributes verdom

Domain Alpha Code Name Alias

camelCase Numeric Code Use Type Definition

Permitted Primitives

Remarks

Item Status
Distinction

MLB
MZONE
Zone
Zone

theme

The Zone object is an object that defines an area which is logically delimited by instances of delineation (limit) objects.

P,L,A

Maritime, terrestrial or inter-tidal zone objects are the three real objects that inherit from this object.

proposed S121

Attributes verdom

Feature Type Register ID

Domain
Alpha Code
Name
Alias
camelCase
Numeric Code
Use Type
Definition

Permitted Primitives

Remarks Item Status Distinction MLB

LIMPNT Limit Point

LimitPoint

theme

A limit Point is a point on a limit.

Р

A point associated with one party.

proposed S121

BDNPNT

Feature Type Register ID

Domain
Alpha Code
Name
Alias
camelCase
Numeric Code
Use Type
Definition

Permitted Primitives

Remarks Item Status Distinction MLB BNDPNT Boundary Point

BoundaryPoint

theme

A Boundary Point is a point on a boundary.

Р

A point associated with more than one party.

proposed S121

LIMPNT

Feature Type Register ID	68
Domain	MLB
Alpha Code	BASELN
Name Alias	Baseline
camelCase	Baseline
Numeric Code	
Use Type	theme
Definition	A baseline is the line from which the outer limits of the territorial sea and certain other outer limits are measured. (IHO Dictionary, S-32, 5th Edition, 390).
Permitted Primitives	P,L
Remarks	A baseline is generally composed of two components, a normal baseline and a straight baseline.
Item Status	proposed S121
Distinction	

3.1 S121 Information Objects

Information Object Type Register ID	
Domain	MLB
Alpha Code	BAUNIT
Name	S121 Basic Administrative Unit
Alias	
camelCase	S121_BAUnit
Numeric Code	
Definition	The Basic Administrative is a feature type to "which (one or more) unique and homogeneous rights, responsibilities or restrictions are associated". It is an information object since it does not directly take on spatial attributes.
Remarks	The S121_BAUnit is derived from both the S100_FeatureType and the LA_BAUnit defined in ISO 19152.
Item Status	proposed S121

Information Object Type Register ID 2002 Domain MLB Alpha Code RIGHT Name S121 Right **Alias** Right camelCase S121_Right **Numeric Code** Definition S121_Right is an action, activity or class of actions that a system participant may perform on or using an associated resource. Remarks In the S-100 environment the RRR objects are information objects that carry an object identifier "Oid". They can be referenced as objects from the attributes associated with an S-100 Feature Object. **Item Status** proposed S121

Information Object Type Register ID

2003

Domain	MLB
Alpha Code	RESPON
Name	S121 Responsibility
Alias	Responsibility
camelCase	S121_Responsibility
Numeric Code	
Definition	S121_Responsibility is a formal or informal obligation to do something
Remarks	In the S-100 environment the RRR objects are information objects that
	carry an object identifier "Oid". They can be referenced as objects from
	the attributes associated with an S-100 Feature Object.
Item Status	proposed S121

Information Object Type Register ID

2004

	,
Domain	MLB
Alpha Code	RESTRN
Name	S121 Restriction
Alias	Restriction
camelCase	S121_Restriction
Numeric Code	
Definition	S121_Restriction is a formal or informal entitlement to refrain from doing something.
Remarks	In the S-100 environment the RRR objects are information objects that carry an object identifier "Oid". They can be referenced as objects from the attributes associated with an S-100 Feature Object.
Item Status	proposed S121

Information Object Type Register ID

2005

71 - 0	
Domain	MLB
Alpha Code	IPARTY
Name	S121 Party
Alias	Party
camelCase	S121_Party
Numeric Code	
Definition	S121_Party is a person or organisation that plays a role in a rights
	transaction
Remarks	
Item Status	proposed S121

Information Object Type Register ID

Domain	MLB
Alpha Code	GPARTY
Name	S121 Group Party
Alias	Group
camelCase	S121_GroupParty
Numeric Code	
Definition	S121_GroupParty is any number of parties, forming together a distinct entity, with each party registered.
Remarks	
Item Status	proposed S121

Information Object Type Register ID

2007

2 2: 0	
Domain	MLB
Alpha Code	ADMSRC
Name	S121 Administrative Source
Alias	Source
camelCase	S121_AdministrativeSource
Numeric Code	
Definition	S121_AdministrativeSource is a source with the administrative description (where applicable) of the parties involved, the rights, restrictions and responsibilities created and the basic administrative units affected.
Remarks	

proposed S121

Information Object Type Register ID

Item Status

2008

tion Object Type Register	2008
Domain	MLB
Alpha Code	SPAATT
Name	S121 Spatial Attribute Type
Alias	Spatial
camelCase	S121_SpatialAttributeType
Numeric Code	
Definition	The Spatial Attribute Type as defined for S121 is derived from the class
	LA_SpatialUnit defined in ISO 19152. It also inherits from
	S100_GF_SpatialAttributeType. This means that the geometry types
	inherited from S-100 apply. Only the geometry types GM_Point,
	GM_MultiPoint, GM_Curve, GM_Surface, CV_Coverage, GM_Curve
	(arcByCentrePoint and circleByCentrePoint may be used.
Remarks	
Item Status	proposed S121

3.2 S121 Feature Attributes

Attribute Type Register ID	1001
Domain	MLB
Alpha Code	verdom
Name	Vertical Domain
Alias	
camelCase	VerticalDomain
Numeric Code	
Data Type	S100_CodeList
UOM	
Definition	Category of vertical domain of the object delimited. (e.g. airspace,
	land_surface, water_surface, water_column, seabed_surface, subsoil).
	Any particular object may span more than one vertical domain.
Remarks	
Item Status	proposed S121

1002

Domain
Alpha Code
Name
Alias
camelCase
Numeric Code
Data Type
UOM
Definition

Remarks Item Status MLB
pointType
Type of Point

PointType

S100_CodeList

Computational origin of the element (defined, densified, computed or construction)

proposed S121

Attribute Type Register ID

1003

Domain
Alpha Code
Name
Alias
camelCase
Numeric Code
Data Type
UOM
Definition
Remarks
Item Status

MLB
limtyp
Limit Type

LimitType

S100_CodeList

Type of delineation (Boundary, Limit or Construction).

Attribute Type Register ID

1004

Domain
Alpha Code
Name
Alias
camelCase
Numeric Code
Data Type
UOM
Definition

Remarks Item Status

	1004
MLB	
arctyp	
Arc Type	
ArcType	
S100_CodeList	
Type of computation used to define an arc (line). (Geodesic or	
loxodrome).	
proposed \$121	

1005

Domain Alpha Code Name Alias camelCase **Numeric Code Data Type** UOM Definition Remarks **Item Status**

MLB nbltyp **Normal Baseline Type** NormalBaselineType S100 CodeList

Type of normal baseline (Normal, Low Tide Elevation)

proposed S121

Attribute Type Register ID

1006

Domain Alpha Code Name Alias camelCase **Numeric Code Data Type** UOM Definition

MLB sbltyp **Straight Baseline Type**

S100_CodeList

StraightBaselineType

Type of straight baseline (Straight Baseline, Archipelagic Baseline, Delta Baseline, Unstable coast Baseline, Historic Bay Closing, River Closing, Historic Waters)

Remarks **Item Status**

proposed S121

Attribute Type Register ID

Domain Alpha Code Name Alias camelCase **Numeric Code Data Type** UOM Definition Remarks **Item Status**

	1007
MLB	
bautyp	
BAUnitType	
BAUnitType	
S100_CodeList	
Type of Basic Administrative Unit (MLB, A76, other)	
proposed S121	·

Domain Alpha Code Name

Alias camelCase Numeric Code Data Type UOM Definition Remarks

1008

1010

MLB blsver

Begin Lifespan Version

begin

beginLifespanVersion

S100_TruncatedDate

Begin of version object life span

proposed S121

Attribute Type Register ID

Item Status

Domain

Alpha Code Name Alias camelCase Numeric Code Data Type

UOM Definition Remarks Item Status 1009

MLB elsver

End Lifespan Version

end

endLifespanVersion

S100_TruncatedDate

End of version object life span

proposed \$121

A.1.2. **S121 Information Object Attributes**

Attribute Type Register ID

Domain

Alpha Code

Name

Alias camelCase Numeric Code

Data Type UOM

Definition Remarks Item Status MLB rghtyp

S121_RightType

RightType

S100_CodeList

Type of right (sovereignRight, accessRight, harvestRight, easementRight)

Domain Alpha Code

Name Alias

camelCase **Numeric Code Data Type** UOM Definition

Remarks **Item Status** MLB rsttyp

S121_RestrictionType

RestrictionType

S100 CodeList

Type of restriction (timeBasedRestriction, passageRestriction, accessRestriction, useRestriction, jurisdictionRestriction,

resourceRestriction)

proposed S121

Attribute Type Register ID

Domain Alpha Code Name

Alias

camelCase **Numeric Code Data Type UOM**

Definition Remarks **Item Status** 1012

1011

MLB restyp

S121_ResponsibilityType

ResponsibilityType

S100_CodeList

Type of responsibility (maintenanceResponsibility)

proposed S121

3.3 S121 Listed Values

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code Associated Attribute

Definition

Remarks **Item Status** 4001

4002

MLB Airspace

Airspace

verdom

The airspace is a space composed of air

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute

Definition Remarks **Item Status** MLB Land surface

LandSurface

verdom

LandSurface is the interface between earth and air.

n

S121	Maritime	Limits	and	Boundaries	Product	Specification
0 1 - 1	Maritim		and	Dodinadiloo	1 10000	op comodito

Domain Name Alias

camelCase Numeric Code Associated Attribute

Definition

Remarks Item Status

Water surface

WaterSurface

verdom

MLB

The waterSurface is the interface between the airspace and waterColumn.

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase Numeric Code

Associated Attribute

Definition

Remarks Item Status 4004

4003

MLB

Water column

WaterColumn

verdom

The waterColumn is a space (volume) from the seabedSurface up to the waterSurface.

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase Numeric Code

Associated Attribute

Definition

Remarks Item Status MLB

Seabed surface

SeabedSurface

verdom

SeabedSurface is the interface between the submerged land and the

ocean.

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute

Definition

Remarks

Item Status

4006

4005

MLB

Subsoil

Subsoil

verdon

The subsoil is an area composed of earth (soil).

Domain Name Alias

camelCase Numeric Code

Associated Attribute Definition

Definition Remarks Item Status 4007

4009

4010

MLB **Defined**

Defined

pointType

A point is derived from a legislative document or other definitive source.

proposed S121

Attribute Type Register ID

Domain Name

Alias

camelCase Numeric Code Associated Attribute

Definition

Remarks Item Status 4008

MLB **Densified**

Densified

pointType

A point is part of a densification of the vertices in a line to ensure the geometry of a feature is correctly represented.

proposed S121

Attribute Type Register ID

Domain Name

A I! - -

Alias

camelCase

Numeric Code

Associated Attribute

Definition

Remarks Item Status MLB

Computed

Computed

pointType

A point is computed in accordance with the definition described in the source through proper geodetic calculations; for example, the intersection of two arcs over an ellipsoidal surface. A point may be established to support construction computations.

proposed S121

Attribute Type Register ID

Domain

Name Alias

camelCase

Numeric Code

Associated Attribute

Definition Remarks Item Status MLB

Construction

Construction

pointType

Construction

Domain Name Alias

camelCase Numeric Code Associated Attribute

Definition

Remarks Item Status

MLB

International Boundary

InternationalBoundary

limtyp

A type of boundary administered by two sovereign states (countries). This is a special case of boundary whose purpose is to allow the clear definition of critical sovereignty related elements.

4011

4012

4013

33

proposed S121

Attribute Type Register ID

Domain Name

Alias camelCase Numeric Code Associated Attribute

Definition

Remarks Item Status

MLB

Boundary

Boundary

limtyp

Element delimiting an object administered by more than one owner; typically two sovereign states (countries). If there are two political entities involved, the delineated is a boundary, and if there is only one the delineation is a limit.

proposed S121

Attribute Type Register ID

Domain
Name
Alias
camelCase
Numeric Code

Associated Attribute

Definition

Remarks Item Status

MLB

Limit

Limit

limtyp

Element delimiting an object administered by a single owner; e.g. boundary of a management zone, that pertains to only one political entity, such as oil lease areas within a management zone for oil exploration. If there are two political entities involved, the delineation is a boundary, and if there is only one the delineation is a limit.

Domain Name Alias

camelCase Numeric Code Associated Attribute

Definition

Remarks Item Status MLB

Geodesic

Geodesic

arctyp

A path of shortest distance along the surface of an ellipsoid, namely a segment of a great circle.

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute

Definition

Remarks Item Status 4015

4017

4014

MLB

Loxodrome

Loxodrome

arctyp

An arc crossing all meridians of longitude at the same angle; a path with

constant bearing.

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute

Definition Remarks Item Status 4016

MLB **Normal**

Normal

nbltyp

Normal baseline type

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute

Definition Remarks Item Status MIB

Low Tide Elevation

LowTideElevation

nhltvr

Low Tide Elevation baseline type

Domain Name Alias

camelCase **Numeric Code**

Associated Attribute

Definition Remarks **Item Status**

MLB
Straight baseline
StraightBaseline
bltyp
Straight Baselinetype
proposed S121

Attribute Type Register ID

Domain Name Alias

camelCase **Numeric Code**

Associated Attribute

Definition Remarks **Item Status**

4019 **Archipelagic Baseline** Archipelagic Baseline type Archipelagic Baseline type proposed S121

Attribute Type Register ID Domain

Name Alias camelCase **Numeric Code Associated Attribute**

Definition Remarks **Item Status**

	4020
MLB	
Delta Baseline	
DeltaBaseline	
sbltyp	
Delta Baseline type	
proposed S121	

Attribute Type Register ID Domain

Item Status

4021

Name Alias camelCase **Numeric Code Associated Attribute** Definition Remarks

MLB **Unstable coast Baseline** UnstableCoastBaseline Unstable Coast Baseline type proposed S121

Attribute Type Register ID 4022 Domain MLB

Name Alias

camelCase **Numeric Code**

Associated Attribute

Definition Remarks **Item Status** **Historic Bay Closing** HistoricBayClosing Historic Bay Closing type proposed S121

Attribute Type Register ID

Domain Name Alias

camelCase **Numeric Code**

Associated Attribute Definition

Remarks **Item Status**

4023 MLB **River Closing** RiverClosing sbltyp River Closing type proposed S121

Attribute Type Register ID

Domain Name

Alias

camelCase **Numeric Code**

Associated Attribute

Definition Remarks **Item Status**

4024 MLB **Historic Waters** HistoricWaters sbltyp Historic Waters type proposed S121

Attribute Type Register ID

Domain Name Alias

camelCase **Numeric Code**

Associated Attribute

Definition Remarks **Item Status**

	4025
MLB	
MLB BAUnit Type	
MLB	
bautyp	
Marine Limits and Boundaries BAUnit type	
proposed S121	

Domain Name Alias

camelCase **Numeric Code**

Associated Attribute

Definition Remarks **Item Status**

nit Type	

4026

4028

4029

A76 BAU

MLB

A76

UNCLOS article 76 BAUnit type

proposed S121

Attribute Type Register ID

Domain Name Alias

camelCase **Numeric Code**

Associated Attribute

Definition Remarks **Item Status**

4027

MLB Other BAUnit Type bautyp

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase **Numeric Code**

Associated Attribute

Definition

Remarks

Item Status

MLB

Sovereign Right

Other

rghtyp

The right of an exclusivity of jurisdiction (The coastal State has the exclusive right of decision in regard to the rules which are to apply within the zone) A handbook on the new law of the sea. RJ Dupuy, D Vignes, Martinus Nijhoff Publishers, Dordrecht, (1991)

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute

Definition Remarks **Item Status** MLB

Access Right

AccessRight

rghtyp

The right of access including passage

Domain Name Alias

camelCase Numeric Code Associated Attribute

Definition

Remarks Item Status 4030

Harvest Right

Harvest Right

HarvestRight

rghtyp

MLB

The right to harvest a marine resource such as fishing, mineral mining or

oil

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute

Definition Remarks Item Status MLB Easement Right

EasementRight

rghtyp

The right to establish infrastructure (e.g. lay a cable)

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute

Definition Remarks Item Status MLB

Other Right

OtherRight

rghtyp

Other right

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute

Definition Remarks Item Status MLB

Maintenance Responsibility

MaintenanceResponsibility

restvn

Responsibility to maintain a facility or other entity.

proposed S121

4031

4032

proposed S121

Domain Name Alias camelCase

Numeric Code Associated Attribute

Definition Remarks Item Status MLB
Other Responsibility
OtherResponsibility
restyp
Other responsibility

4034

Attribute Type Register ID

Domain Name Alias

camelCase Numeric Code

Associated Attribute

Definition Remarks Item Status MLB
Time Based Restriction

TimeBasedRestriction

rsttyp
Restriction on any right based on time

proposed S121

Attribute Type Register ID

Domain Name

Alias

camelCase Numeric Code

Associated Attribute

Definition Remarks Item Status

MLB Passage Restriction PassageRestriction rsttyp Restriction on the right of access for passage proposed S121

Attribute Type Register ID

Domain Name Alias

camelCase Numeric Code

Associated Attribute

Definition Remarks Item Status

	4037
MLB	
Access Restriction	
AccessRestriction	
rsttyp	
Restriction on the right of access	
proposed \$121	

Domain Name Alias

camelCase Numeric Code

Associated Attribute Definition Remarks

4038

Use Restriction

UseRestriction

rsttvp

MLB

Restriction on use (such as rules for safe anchorage)

proposed S121

Attribute Type Register ID

Item Status

Domain Name Alias

camelCase Numeric Code

Associated Attribute

Definition Remarks Item Status 4039

Jurisdiction Restriction

Jurisdiction Restriction

rsttvn

Restriction on jurisdiction (e.g. limits on sovereign right)

proposed S121

Attribute Type Register ID

Domain

Name

Alias

camelCase

Numeric Code

Associated Attribute Definition

Remarks

Item Status

4040

MLB Resource Restriction

ResourceRestriction

rsttvn

Restriction on the right of harvest of a resource