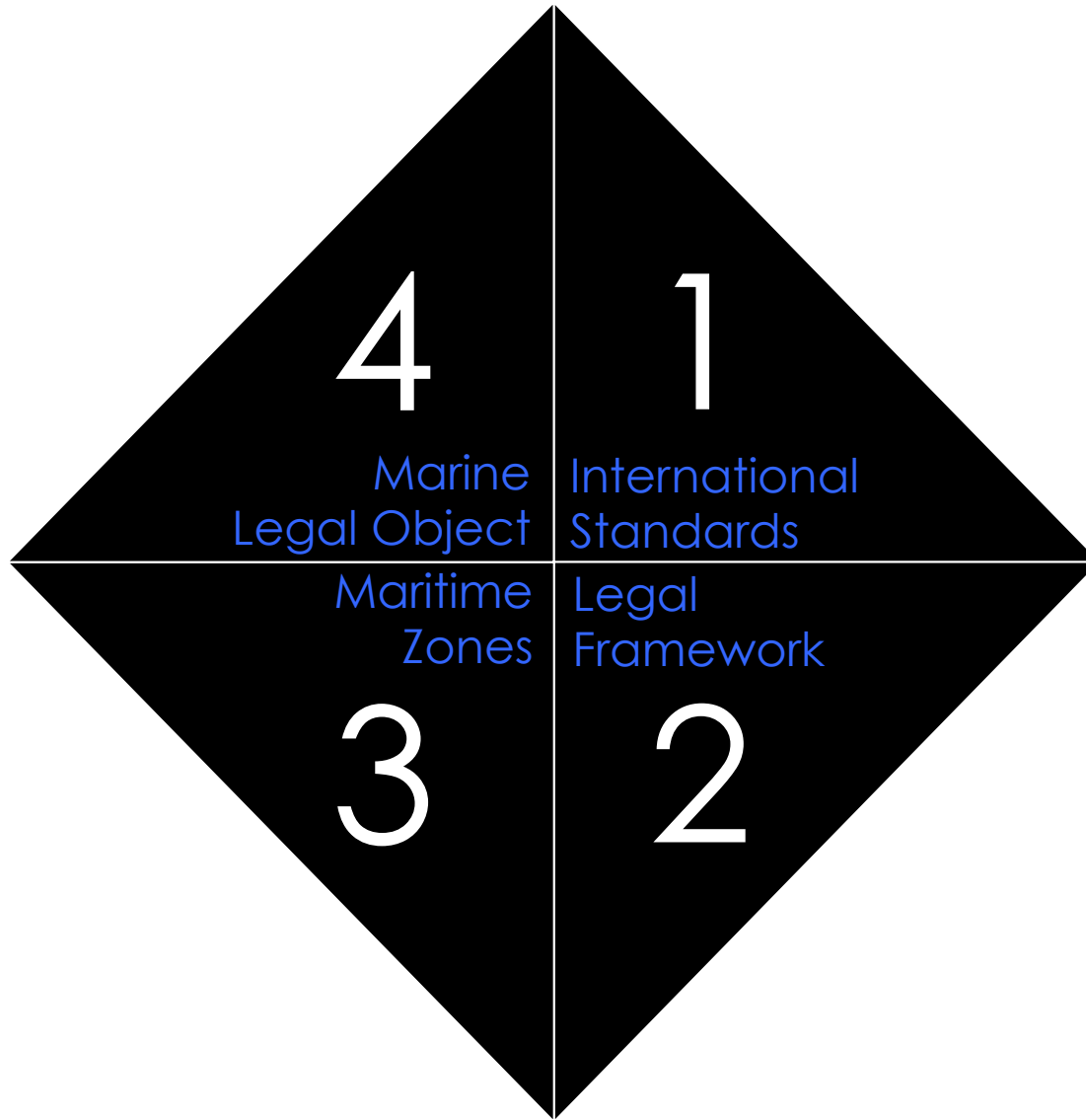




MANAGEMENT OF MARINE RIGHTS, RESTRICTIONS & RESPONSIBILITIES ACCORDING TO INTERNATIONAL STANDARDS



ATHANASIOU KATERINA
DIMOPOULOU EFI
KASTRISIOS CHRISTOS
TSOULOS LYSANDROS



Marine Cadastre

Records, Manages, Visualizes

- Descriptive Data

Stakeholders, RRRs,
Legislation

- Spatial Data

Boundaries, DTM, parcel,
Topography; Hydrography,
Bathymetry

- access and retrieve
spatial datasets in an easy
and secure way

- regulate the use of
the marine areas it covers

- component of an
SDI

Marine Spatial Data Infrastructure

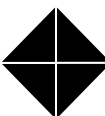
Marine Spatial Planning

planning frame for

- balancing the rival
human activities

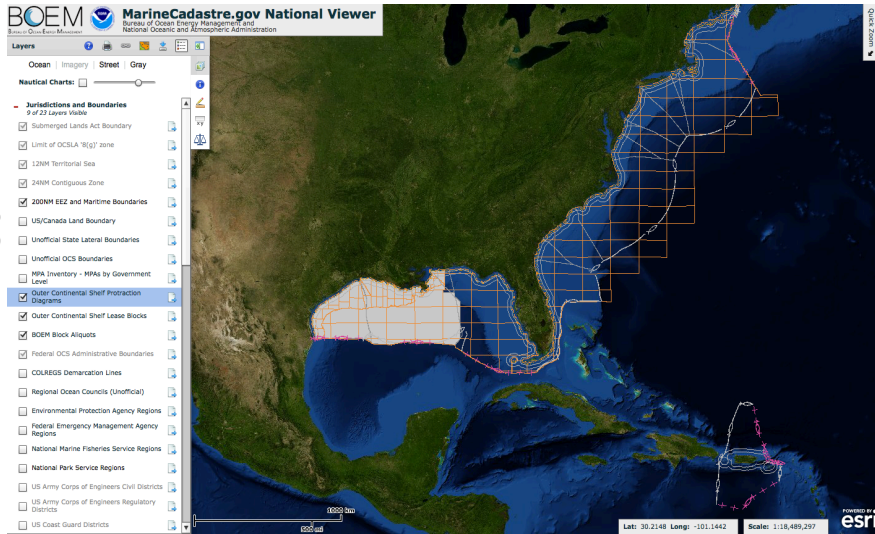
- managing their effects in
the marine environment

Multi purpose
Multi dimensional
management



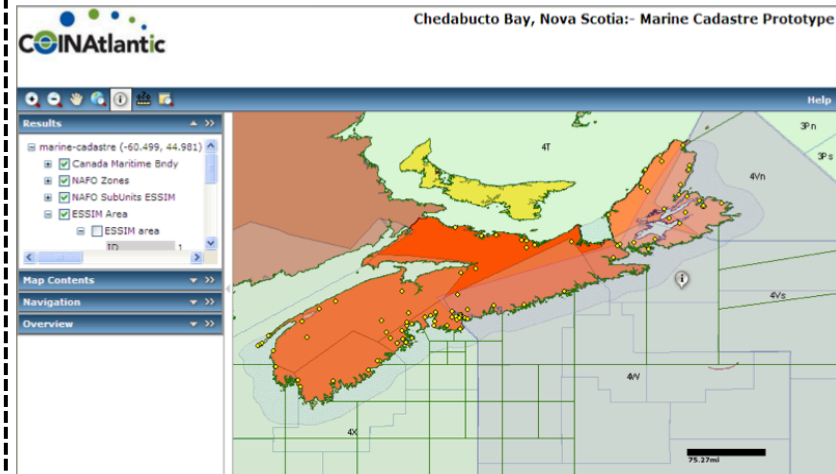
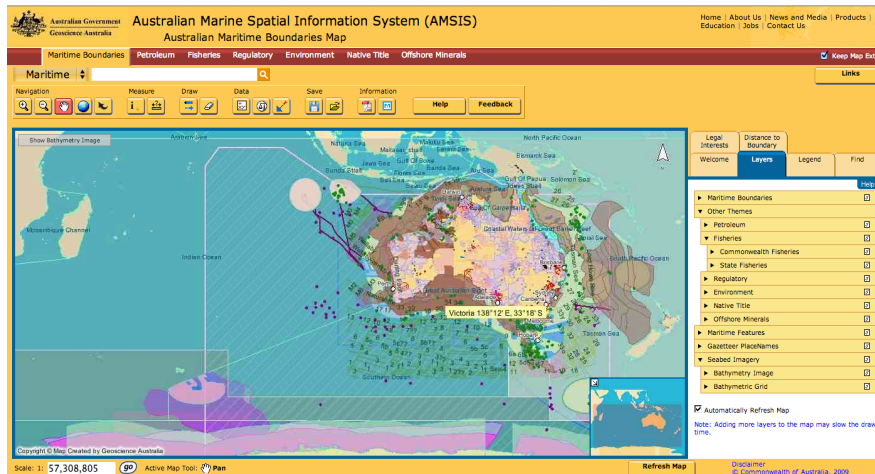
-- INTRODUCTION

USA

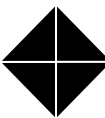


- The Netherlands
- Malaysia
- Israel
- ..

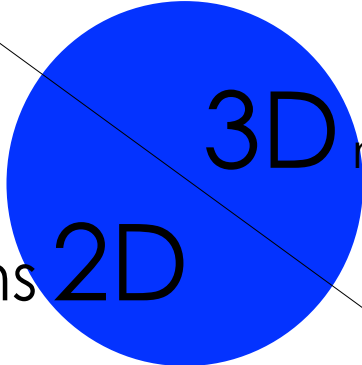
AUSTRALIA



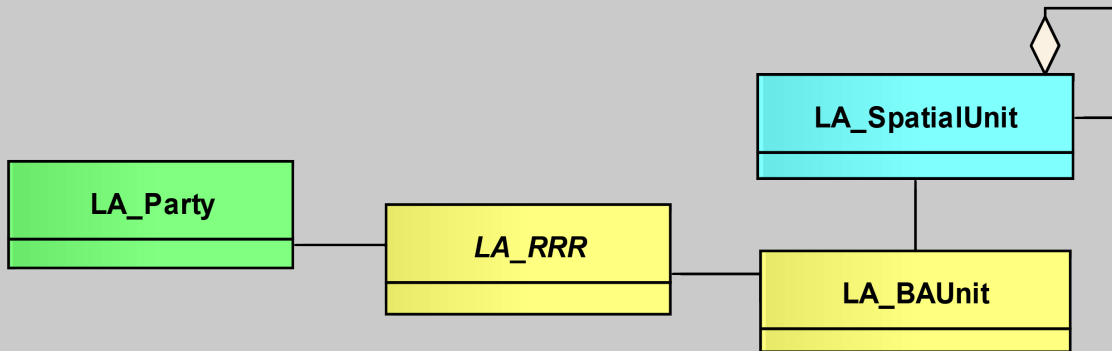
CANADA



3D representation of seafloor
visualization of RRRs remains 2D



-- Internationals Initiatives - **LADM**



LADM (ISO 19152)

- * standardization of the legal world content
- * abstract conceptual schema
- * basis for national profiles, expandable
- * supports 2D & 3D registration
- * 4D visualization

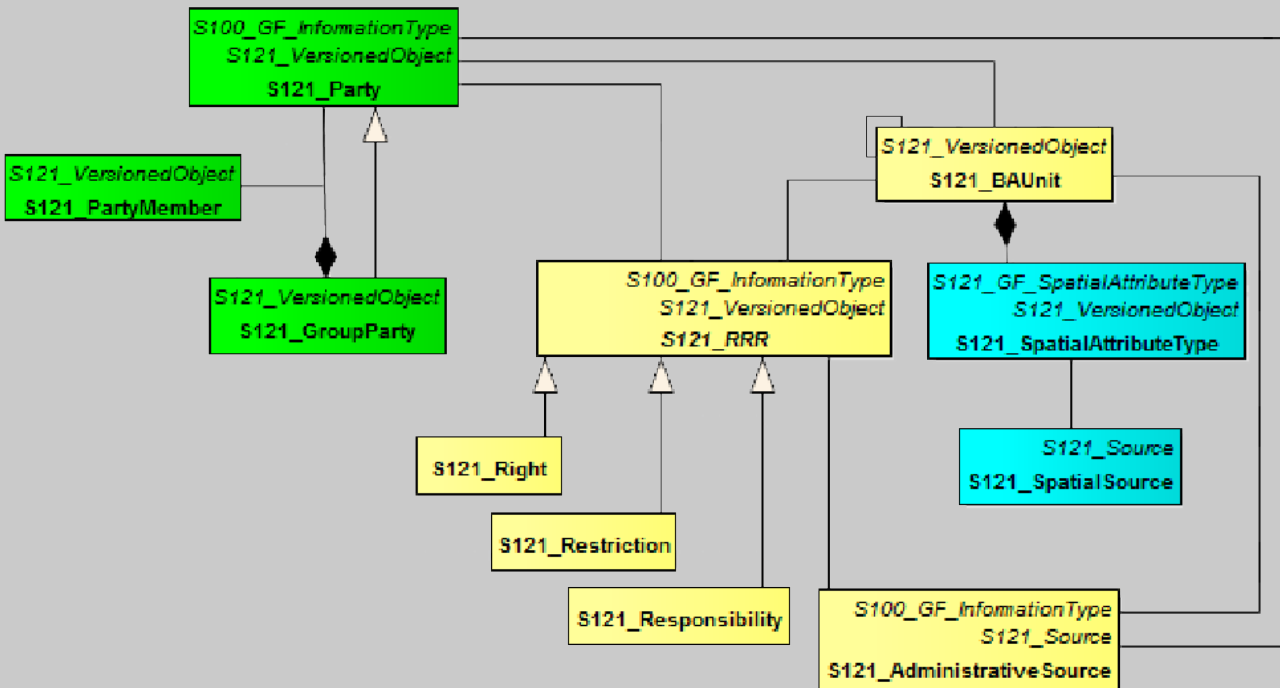


IHO S-121 (under development)

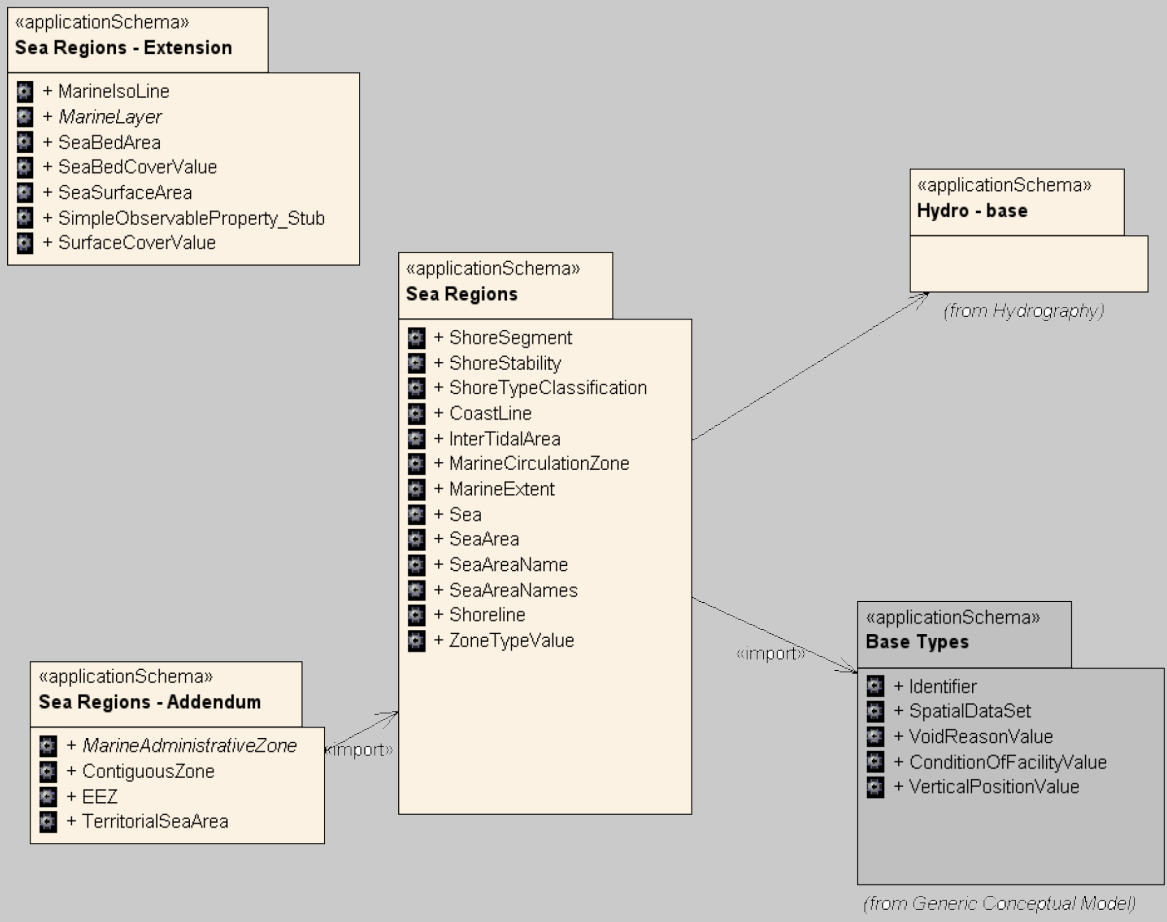
Purpose:

* to provide a suitable format for the exchange of digital vector data pertaining to maritime boundaries

* for lodging digital maritime boundary information with the United Nations for purposes related to UNCLOS



--Internationals Initiatives –INSPIRE



INSPIRE (Directive 2007/2/EC)

* focuses strongly on environmental issues

* does not include RRRs in the definition of cadastral parcels

* is not marine nor land centric

* from the spatial perspective, there is a compatibility between LADM and INSPIRE

(LA_SpatialUnit→Cadastral Parcel,
LA_BAUnit→BasicPropertyUnit,
LA_BoundaryFaceString→CadastralBoundary
LA_SpatialUnitGroup→CadastralZoning)

Given that IHO S-121 "Product Specification for Maritime Limits and Boundaries" is based on LADM, it is inferred that INSPIRE can cooperate as well with S-121 mainly in the spatial dimension.



All marine interests are based on the



INTERNATIONAL / UNCLOS

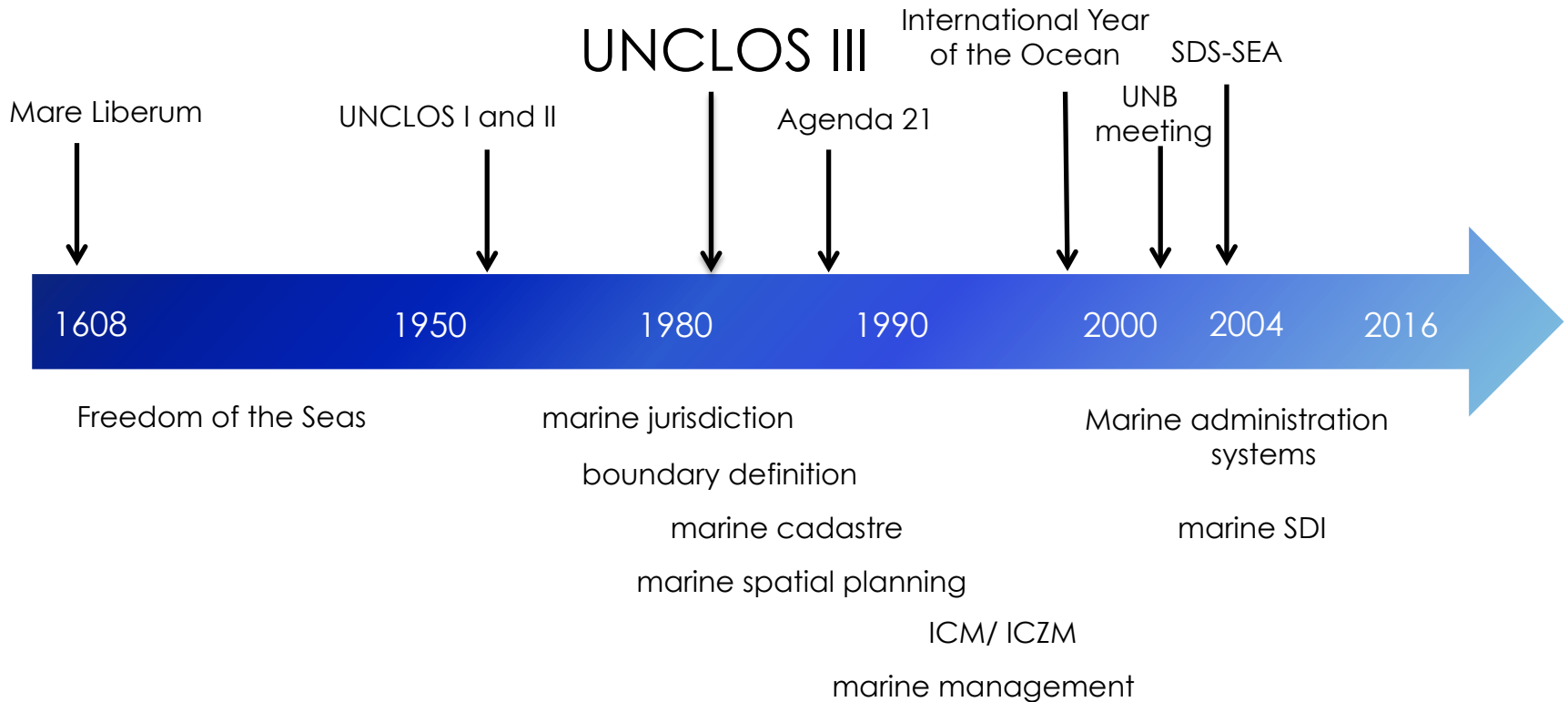
defines the RRRs of each State in its different maritime zones

EUROPEAN / Integrated Maritime Policies

NATIONAL / Implementation Laws



--Legislative Framework -INTERNATIONAL



--Legislative Framework -EUROPEAN

* Integrated Maritime Policy for the European Union (Blue Book) – 2007

* Directive 2008/56/EC Marine Strategy Framework Directive (MSFD)

* MARINE KNOWLEDGE 2020

* BLUE GROWTH / BLUE ECONOMY

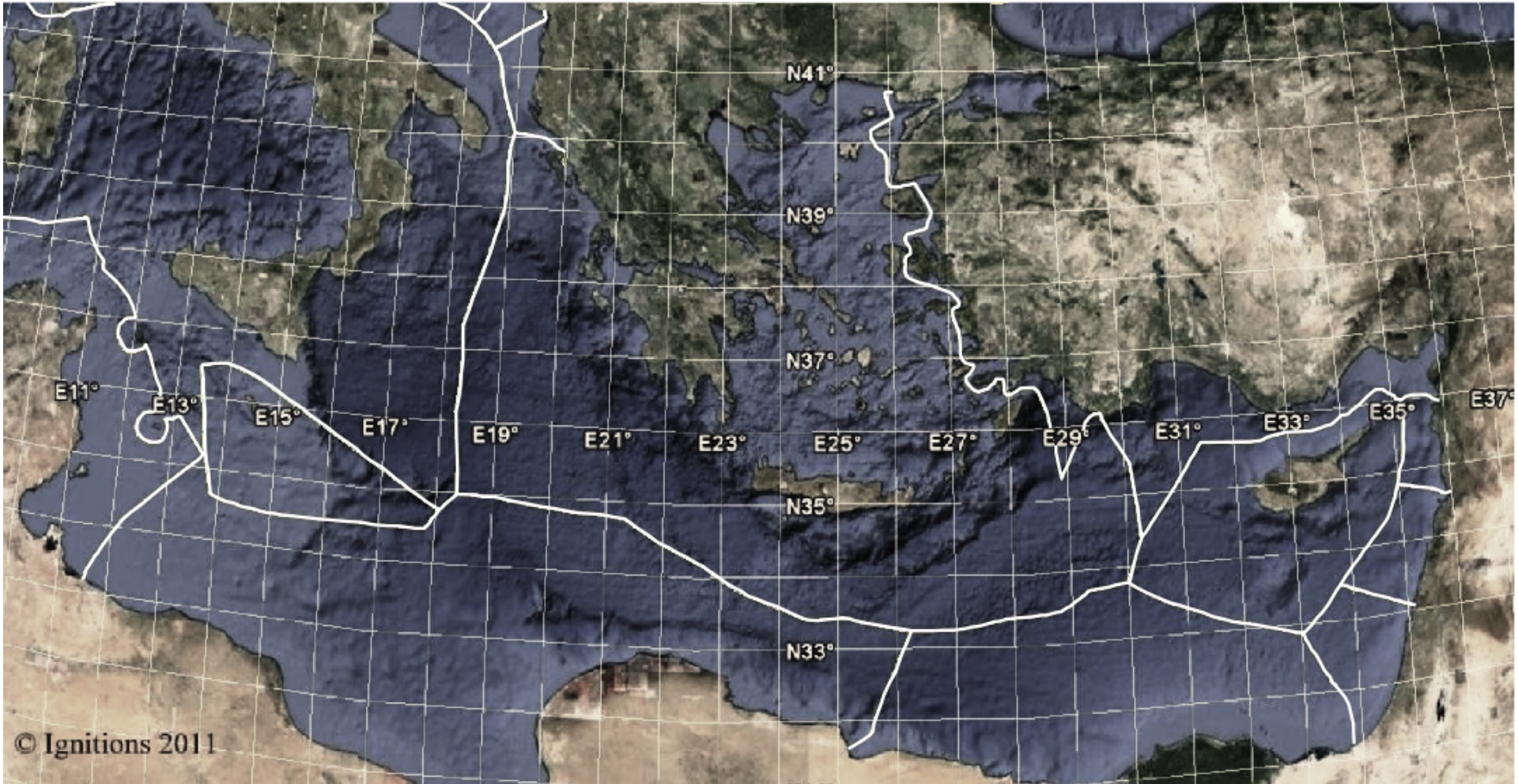
* Directive 2014/89/EU establishing a framework for Maritime Spatial Planning

* Directive 2007/2/EC INSPIRE

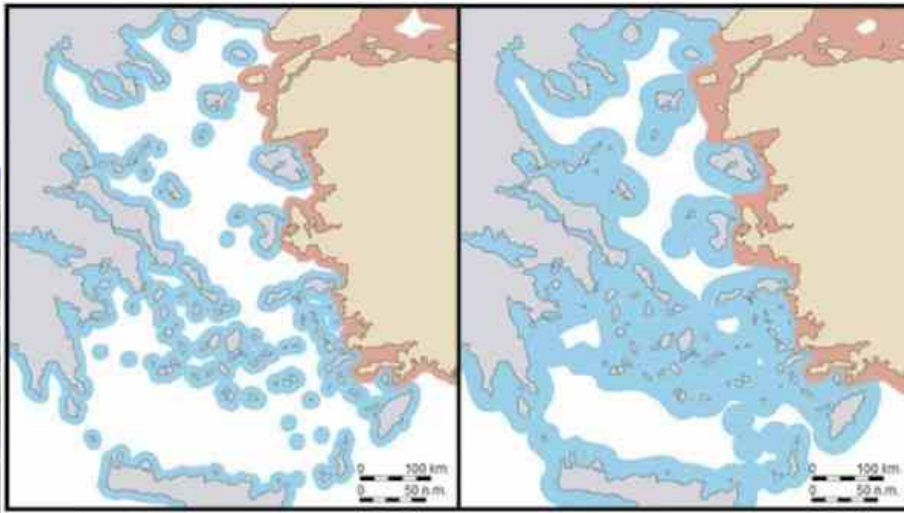
The European Maritime Policy is still under development. The most recent activity on the MC in European Union is the agreement on the need for a common study on the importance of MC to the European economy.



--Legislative Framework -NATIONAL

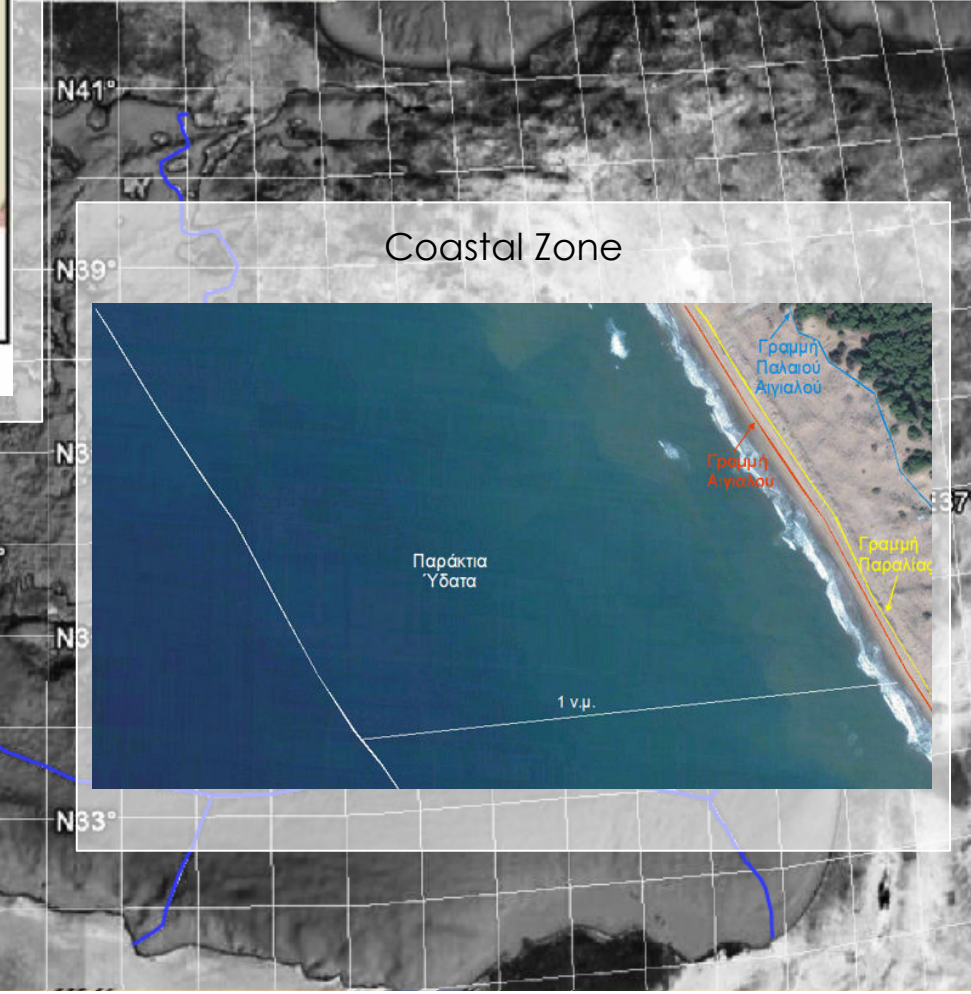


Territorial Sea- Legislative Framework - NATIONAL



Χάρτης: 6 ναυτικά μίλια

Χάρτης: 12 ναυτικά μίλια.



Coastal Zone

Παράκτια Ύδατα

1 v.μ.

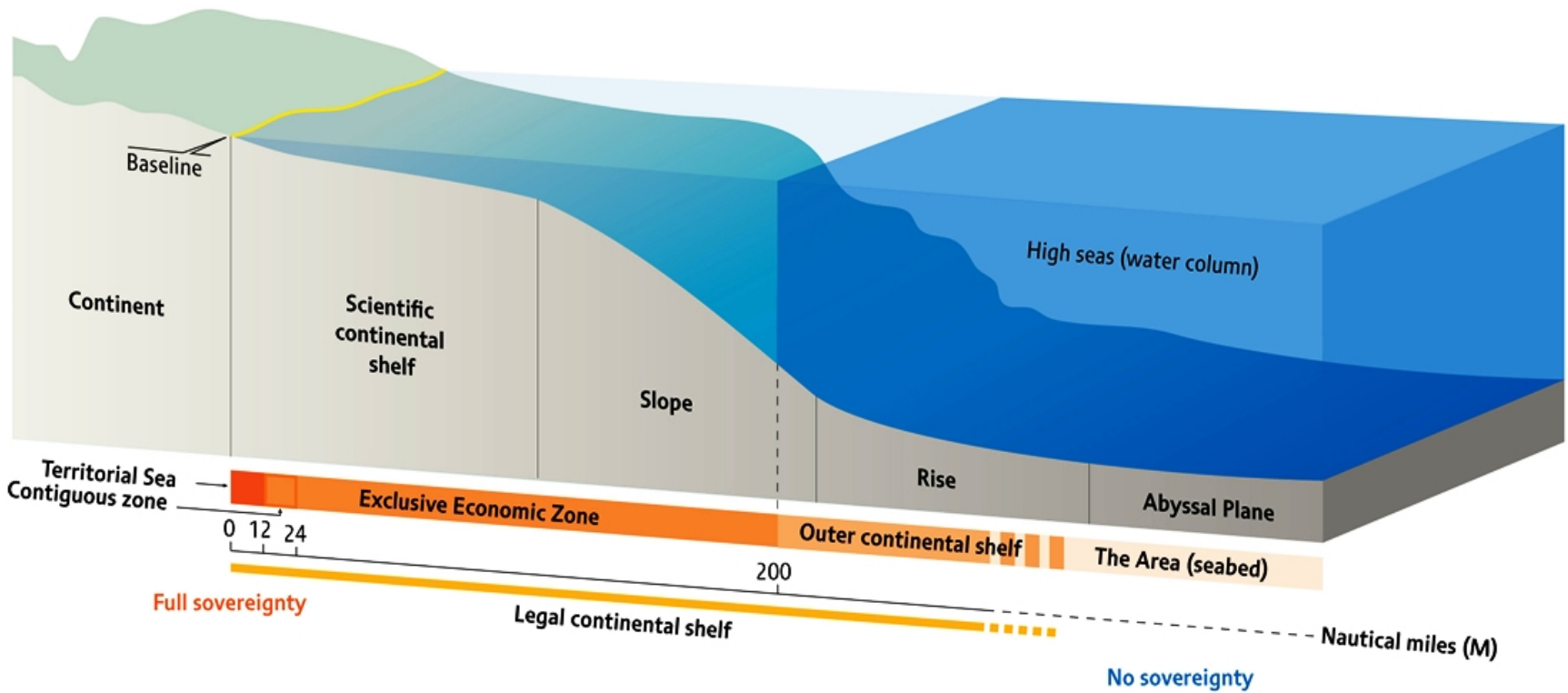
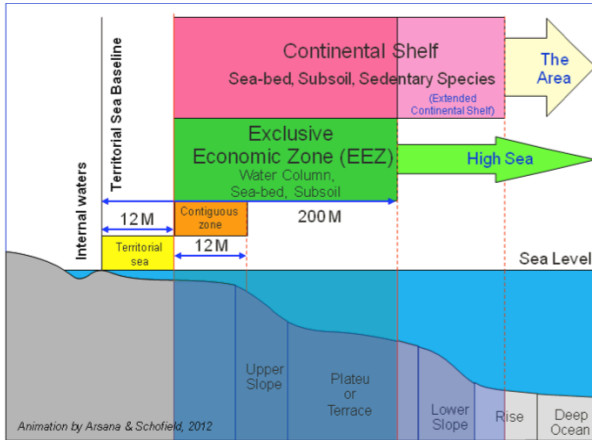
Γραμμή Παλαιού Αγιάλου
Γραμμή Αγιάλου
Γραμμή Παράλιας



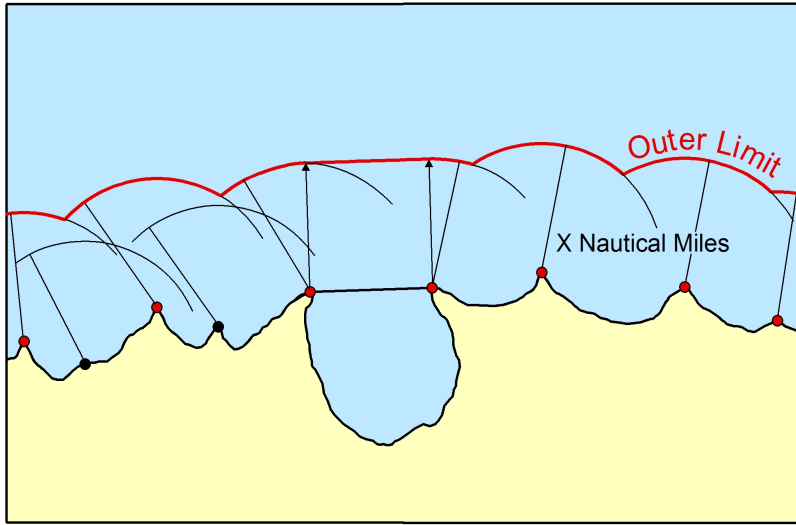
Continental Shelf



--Maritime Zones -LEGAL REGIME



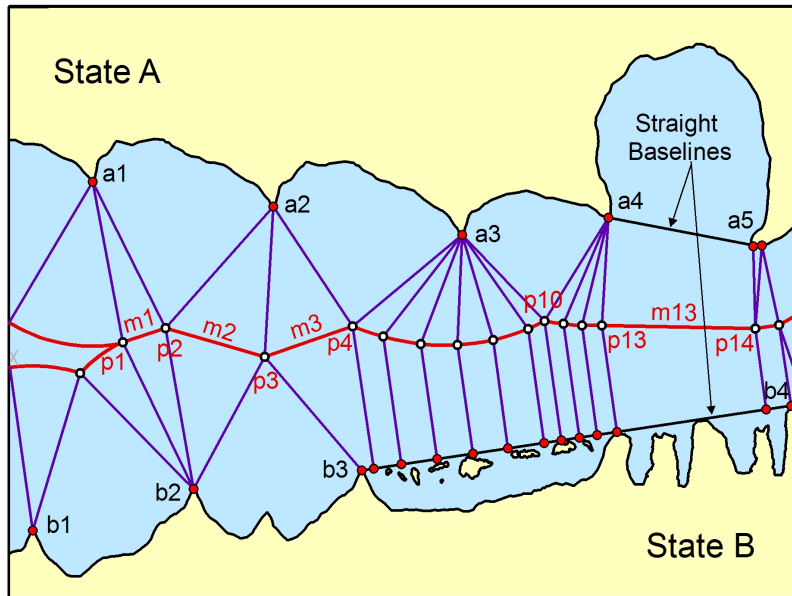
--Maritime Zones - DELIMITATION METHODS



U
N
I
L
A
T
E
R
A
L

Combination of:

- * Envelope of arcs for the natural coastline
- * Replica line for straight lines



B
I
L
A
T
E
R
A
L

* TS -> Median Line

* Beyond 12nm -> Equitable solution



--Marine Legal Object -Types of RRRs

RRR

rights restrictions

State

- * are defined through the international Treaties
- * exclusivity of jurisdiction
- * different state interests depending on the maritime zone
- * private entities (natural or legal persons) can exercise an activity or use part of the marine space only by means of transferring of a right from the State for a specific activity under contract or licensing.

Public

- * are not secured for an individual interest but for a public interest
- * protecting the public interest in the use and conservation of social resources

Environmental

- * relate to the protection and conservation of water resources, places of preserved areas and cultural heritage
- * pre-determined by law
- * mandatory

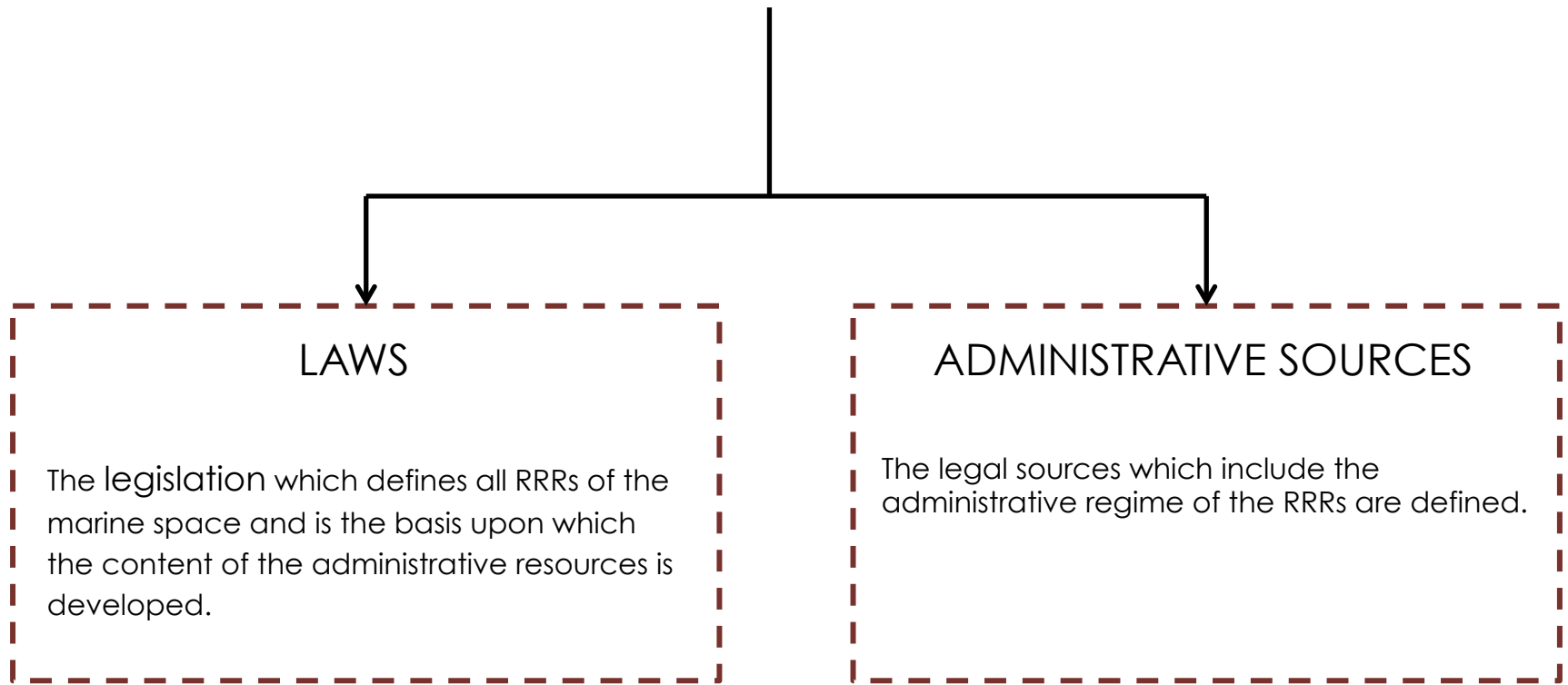
Usage
&
Exploitation

- * a private nature, associated with individual stakeholders that coexist with the state rights
- * the stakeholders are not owners but only beneficial "users"
- * Usage rights are associated only with space, and exploitation rights are associated with the resources

S-121 model maintains the class LA_RRR from LADM and the specializations. LA_Mortgage is not expressed in the model.



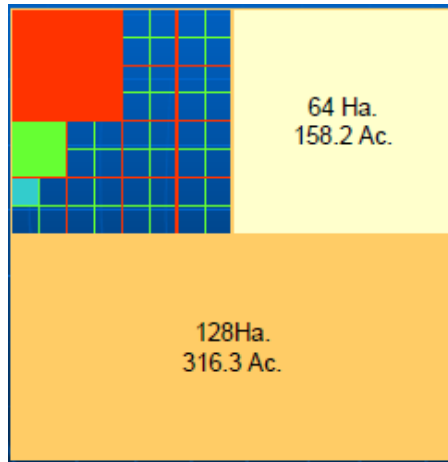
--Marine Legal Object --TYPE OF LEGAL DOCUMENTS



S-121 model keeps the class LA_AdministrativeSource in its structure. It is proposed the registration of administration sources and laws in different classes.



--Marine Legal Object –BASIC REFERENCE UNIT



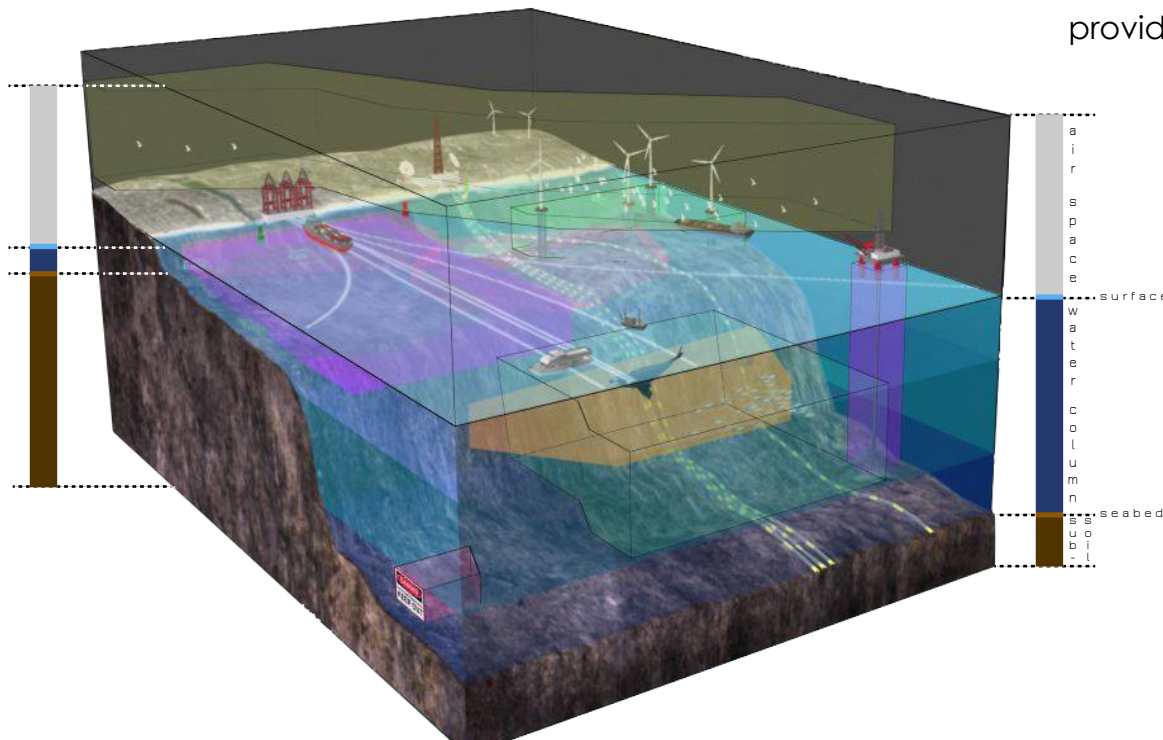
Definition

A

1. multidimensional marine parcel
2. a series of volumetric marine parcels
3. single piece of marine space using a grid of specific dimensions

B

“A confined space having common specifications for its internal, mainly used as reference to locate a phenomenon. A marine parcel facilitates the distinction between contiguous territories and provides information concerning this phenomenon through appropriate codification”.

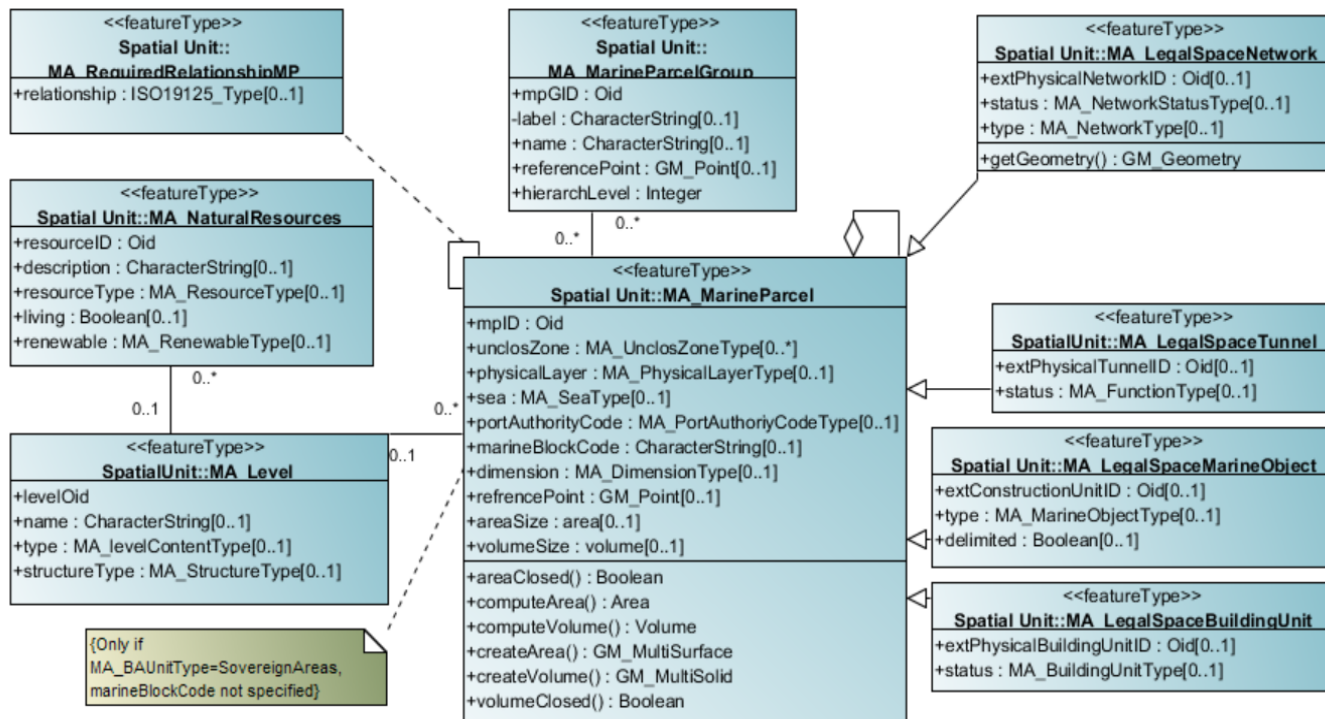


Characteristics

- * third dimension
- * fourth dimension
- * spatial Identifiers



--Marine Legal Object –SPATIAL IDENTIFIERS



Identifiers: linking data elements

Hellenic (Land) Cadastre: a 12 - digit code number is assigned, KAEK

Marine Environment: the unit code can be used

The unclosZone, with possible values - territorial sea and EEZ, the physicalLayer, the seaType and the port authority.

The marineBlockCode is added, which is defined as “N°WGS84, E°WGS84/codeOfSubdividedGrid”.



--Marine Legal Object - SPATIAL DIMENSION

ACCURACY issues emerge from:

Horizontal Datum

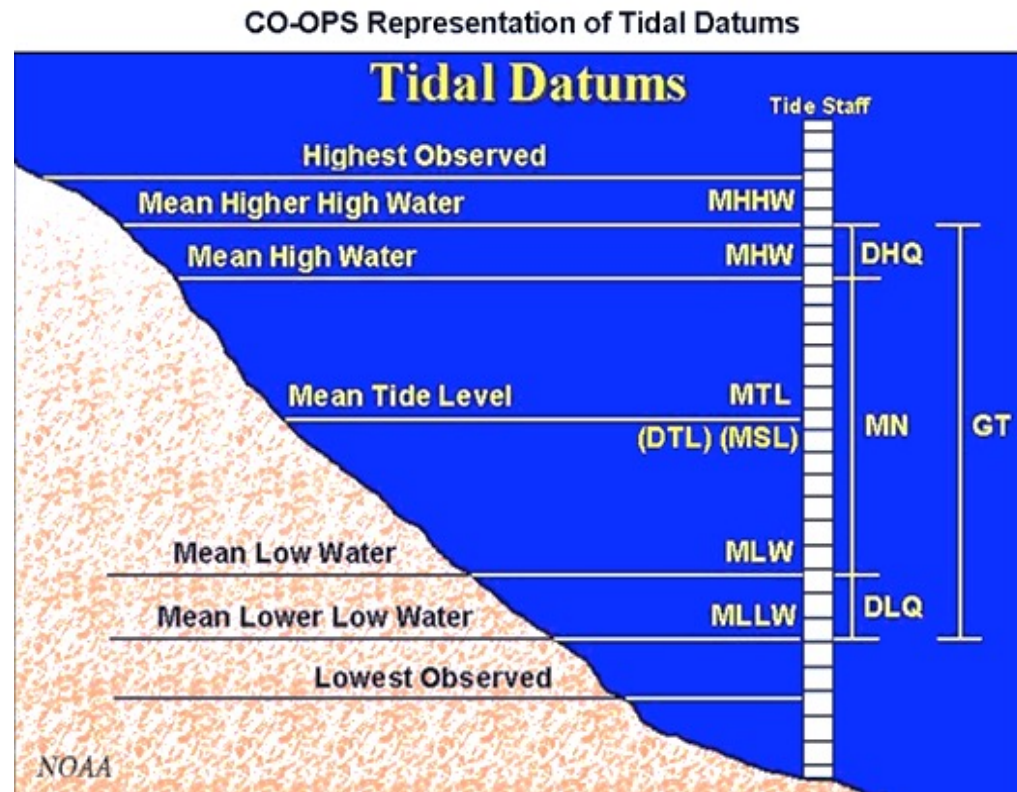
- * Coordinates from different HDs may differ hundreds of meters
- * Lengths on ellipsoid vs sphere differ -0.5% (X % for projected planes)

Vertical (Tidal) Datum

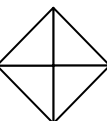
- * Different states use different TDs (e.g. MSL, LAT, LLW)
- * Different mapping authorities of the same state use different TDs

Baselines are affected by both HD & VD

- Horizontal displacement
- Reclassification of features



- Organize national legislation, taking into account EU orientations and directives. Furthermore, laws and regulations that promote conflict in marine space need to be identified with the resolution of spatial definitions within legislation.
- The use of a unique code of identification for each marine parcel is considered necessary for the establishment of a single management system.
- The selection of the geodetic datum and the definition the level of accuracy
- Greece → delimitation of maritime boundaries with its neighbors needs to be agreed upon, the creation of a national ocean's policy, a conclusive approach
- S-121 may serve as the bridge between the land and marine domains while the Maritime Limits and Boundaries following the S-100 standard may be used in the marine administration domain. Furthermore given that IHO S-121 is based on LADM, it is inferred that INSPIRE can cooperate as well with S-121 mainly in the spatial dimension



THANK YOU !

