



Commissioners of
IRISH LIGHTS

Navigation
and Maritime
Services

IPI MSP CPD Series

Role of Irish Lights in MSP

Ronan Boyle – Director of Navigation, Maritime & Consenting
Commissioners of Irish Lights

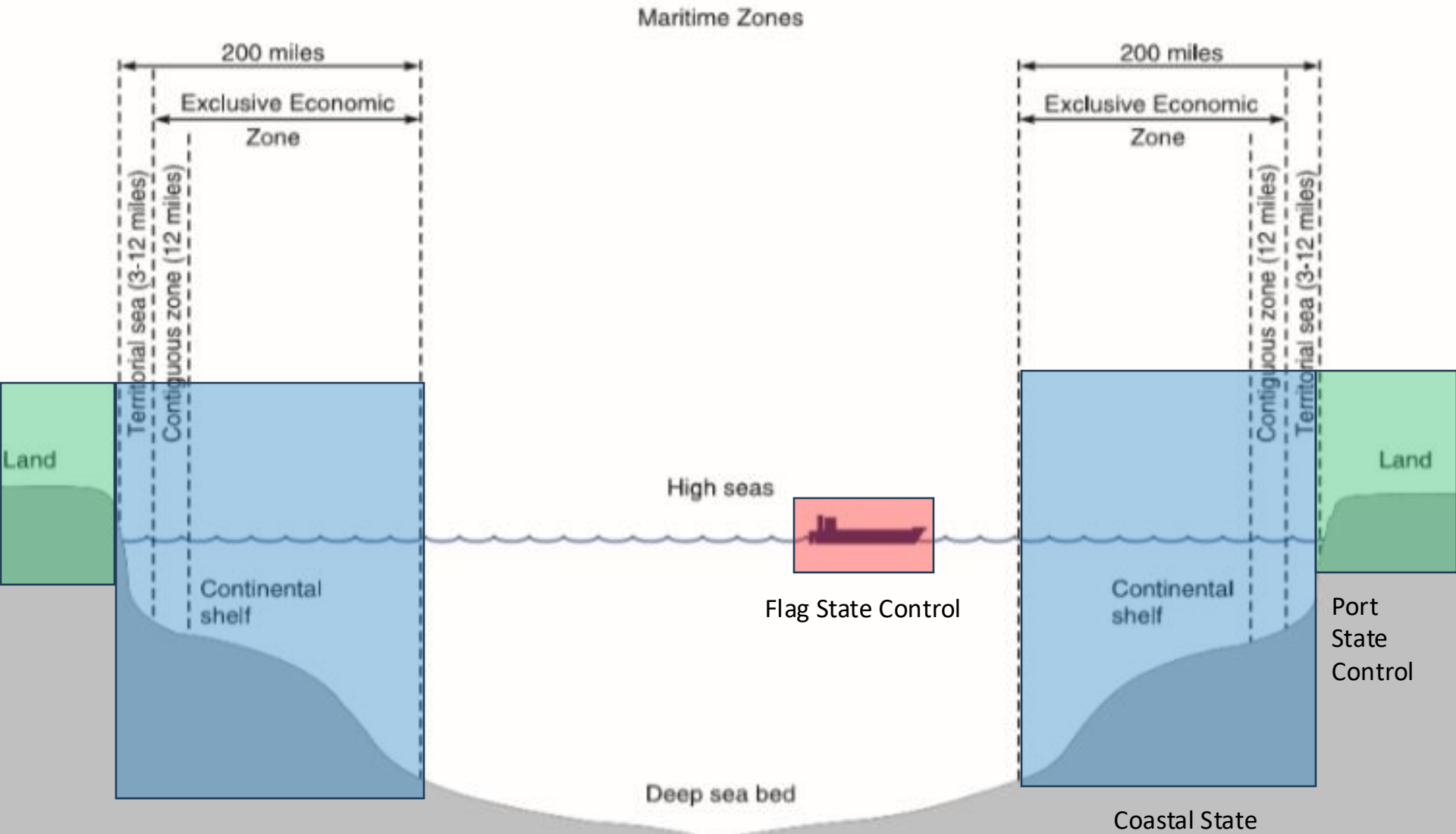
17th October 2025



How is International Shipping regulated?



Overview of UNCLOS





International Maritime Law

I

SOLAS

International Convention for the Safety of Life at Sea

II

STCW

International Convention on Standards of Training, Certification and Watchkeeping for Seafarers

III

MARPOL

International Convention for the Prevention of Pollution from Ships

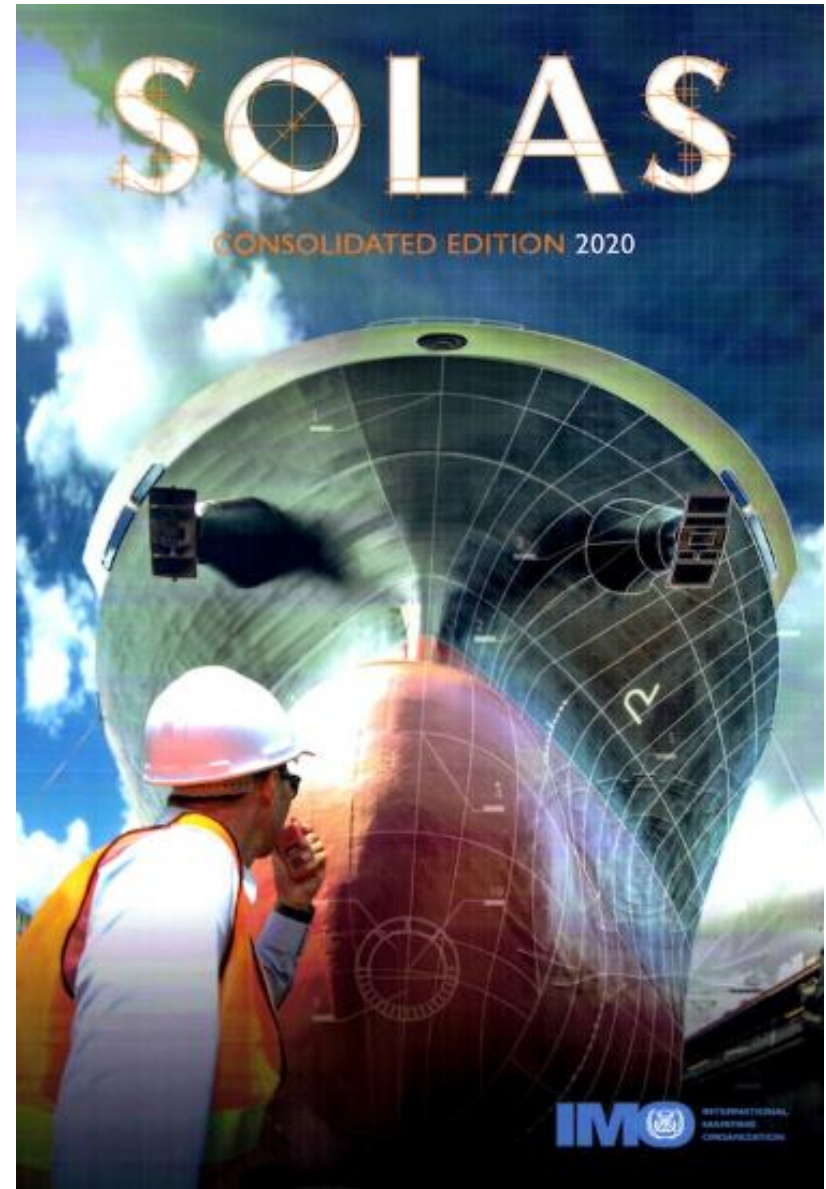
IV

MLC

Maritime Labour Convention

SOLAS Convention – Safety Of Life At Sea

- SOLAS Regulation 13 of Chapter V
 - Contracting governments are required to provide aids to navigation where the volume of traffic and the level of risk requires
- Coastal State responsibility
- Delegated to Competent Authority by Merchant Shipping Acts
- In the Act, the Competent Authority is termed the General Lighthouse Authority

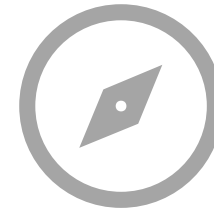


Some definitions



Aid to Navigation (AtoN)

A device, system or service, external to vessels, designed and operated to enhance safe and efficient navigation of individual vessels and/or vessel traffic
(Source: IALA)



Navigation Aid (Navaid)

Equipment carried on board ships for navigational purposes. These are referred to as navigational aids (Navaid) and include Radar, compasses or depth sounders.

AtoN – Hook Head Lighthouse



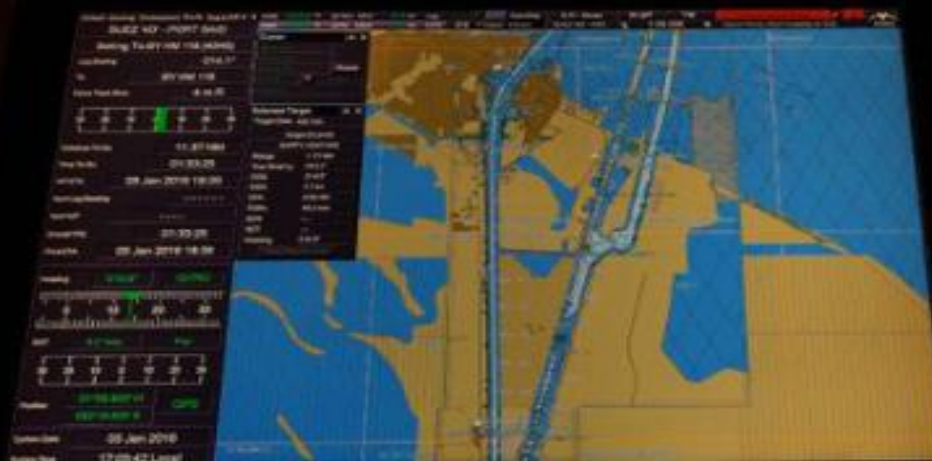
NavAid – Radar screen on a ship



AtoN – St. John's Point Lighthouse



NavAid – Electronic Chart Display & Information System



AtoN – Fastnet Lighthouse



NavAid – Echo Sounder (Depth below keel)



AtoN - Typical AtoN buoy design

Region A Lateral Marks

Port Hand



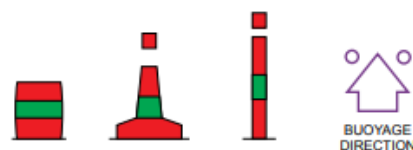
Starboard Hand



red	Color	green
cylindrical (can), pillar, spar	Buoy	conical (nun), pillar, spar
single red cylinder (can)	Topmark (if any)	single green cone, point upward

Lights (if any): may have any phase characteristic other than that used for preferred channels		
	Quick Flashing	
	Flashing	
	Long Flashing	
	Group Flashing	

Preferred Channel to Starboard



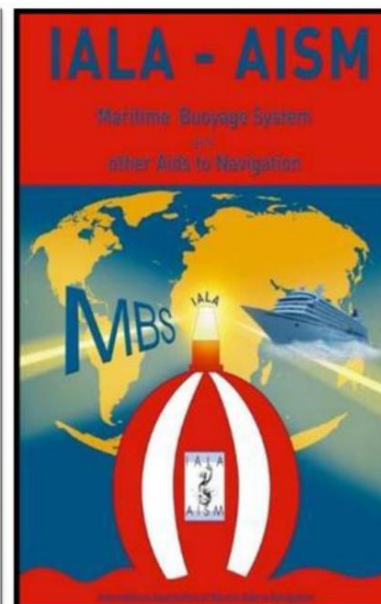
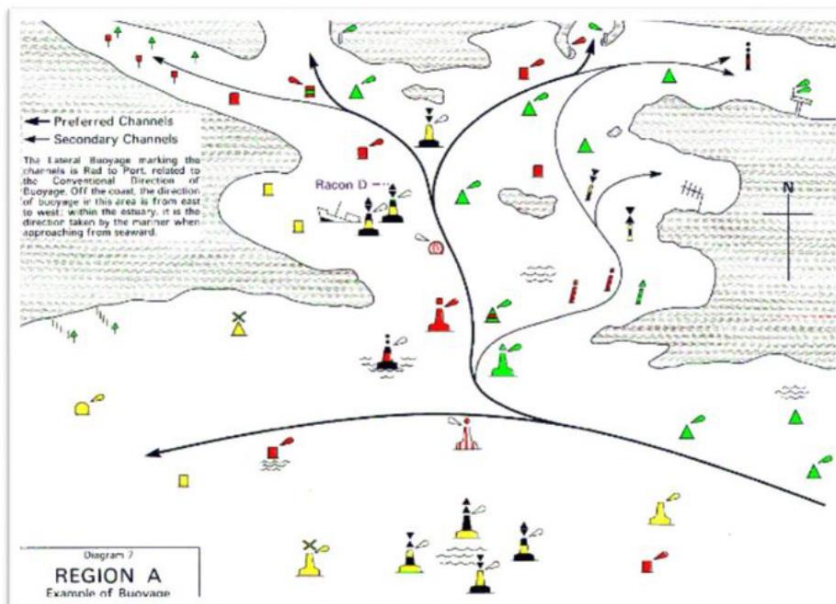
Preferred Channel to Port



red with one green horizontal band	Color	green with one red horizontal band
cylindrical (can), pillar, spar	Buoy	conical (nun), pillar, spar
single red cylinder (can)	Topmark (if any)	single green cone, point upward

Lights (if any) are composite group flashing		
	FI (2+1)	

IALA Maritime Buoyage System (MBS)



IALA RECOMMENDATION
(NORMATIVE)

R1001
THE IALA MARITIME BUOYAGE SYSTEM (MBS)

Edition 2.0

June 2023

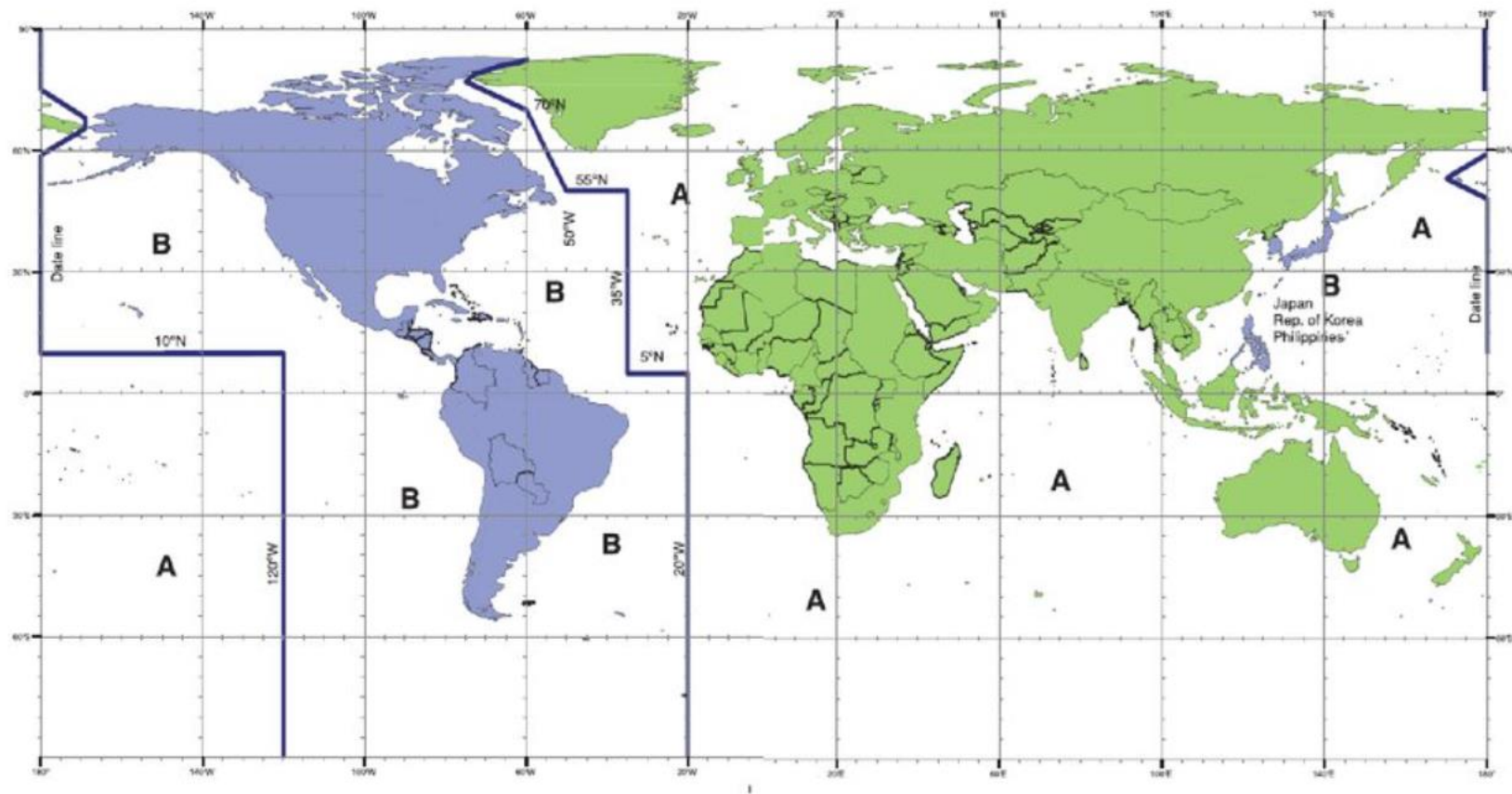
urn:mrn:iala:pub:r1001:ed2.0

10, rue des Gaudines – 78100 Saint Germain en Laye, France
Tél. +33 (0)1 34 51 70 01 – contact@iala-aism.org

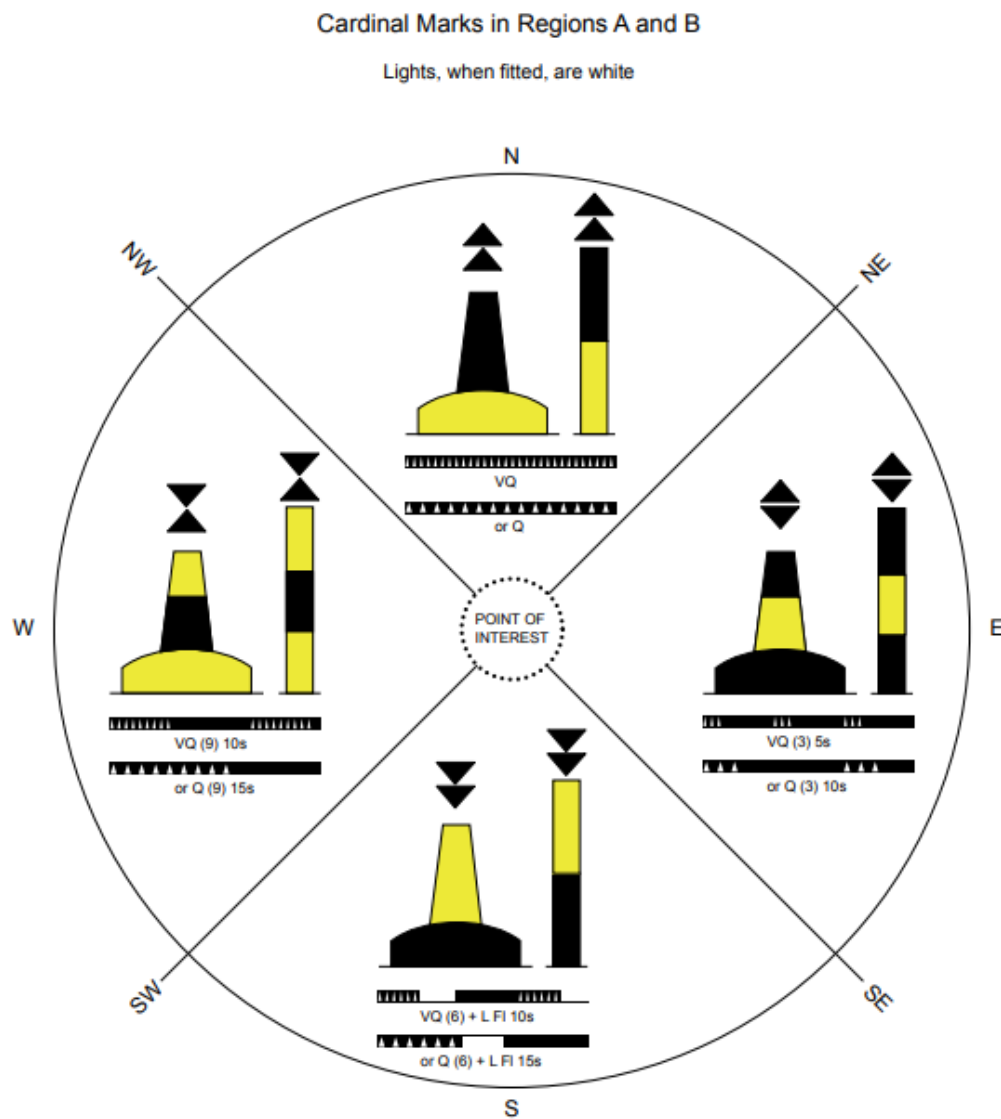
www.iala-aism.org

International Association of Marine Aids to Navigation and Lighthouse Authorities
Association Internationale de Signalisation Maritime

Global buoyage regions (A & B)



AtoN - Typical AtoN buoy design



AtoN - Typical AtoN buoy design

Regions A and B

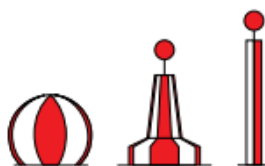
Isolated Danger Marks



Color	black with one or more red horizontal band(s)
Buoy	optional, but not conflicting with lateral marks; pillar or spar preferred
Topmark (if any)	always fitted with double spheres

Lights (if any)	
Color	white
Rhythm	group flashing

Safe Water Marks



Color	red and white vertical stripes
Buoy	spherical, pillar or spar
Topmark (if any)	single red sphere

Lights (if any)	
Color	white
ISO	
Oc	
L Fl 10s	
Morse "A"	

Special Marks



Color	yellow
Buoy	optional, but not conflicting with lateral marks
Topmark (if any)	single yellow "X" shape

Lights (if any)	
Color	yellow
Fl Y	
Fl (4) Y	
May have any rhythm other than those used for white lights on cardinal, isolated danger or safe water marks.	

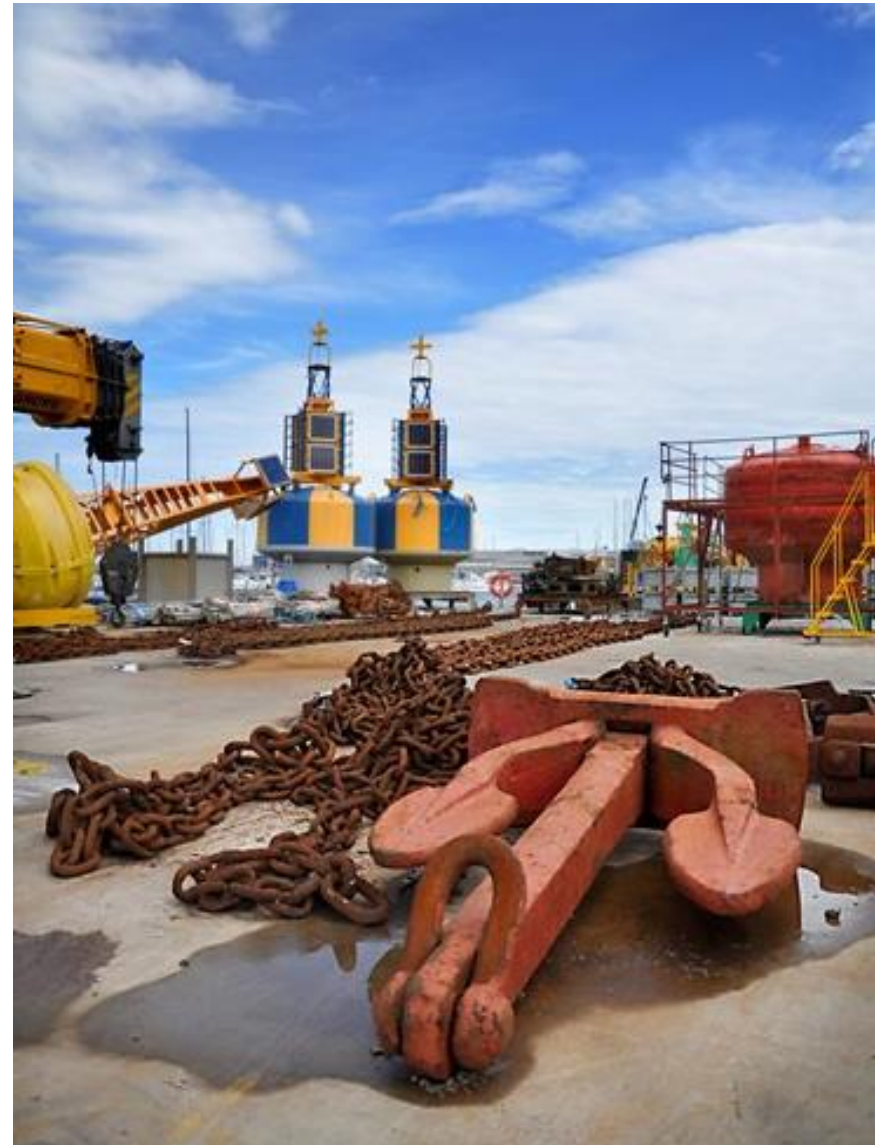
New Danger Marks



Color	blue and yellow vertical stripes
Buoy	pillar or spar
Topmark (if any)	vertical/perpendicular yellow cross

Lights (if any)	
Color	alternating blue and yellow
Al Oc Bu Y 3s	

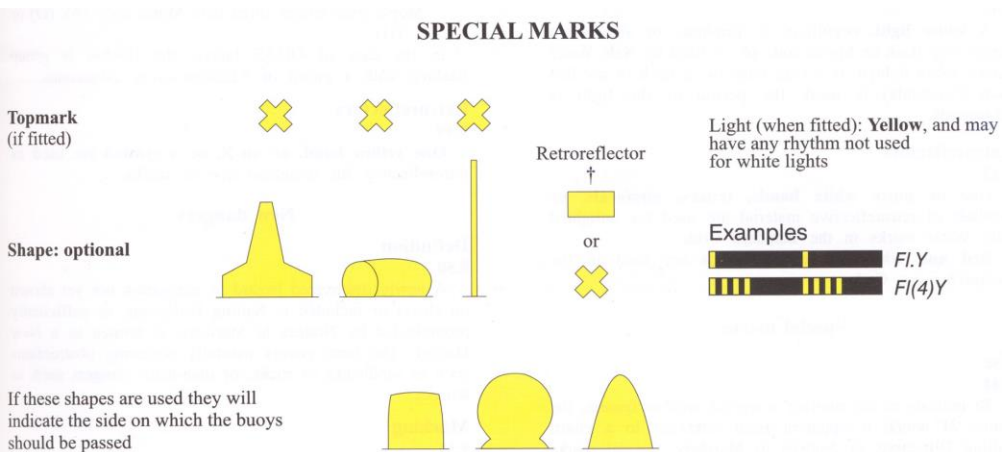
AtoN – Cardinal mark & Wreck Marking buoys



Special marks (data acquisition) are an AtoN



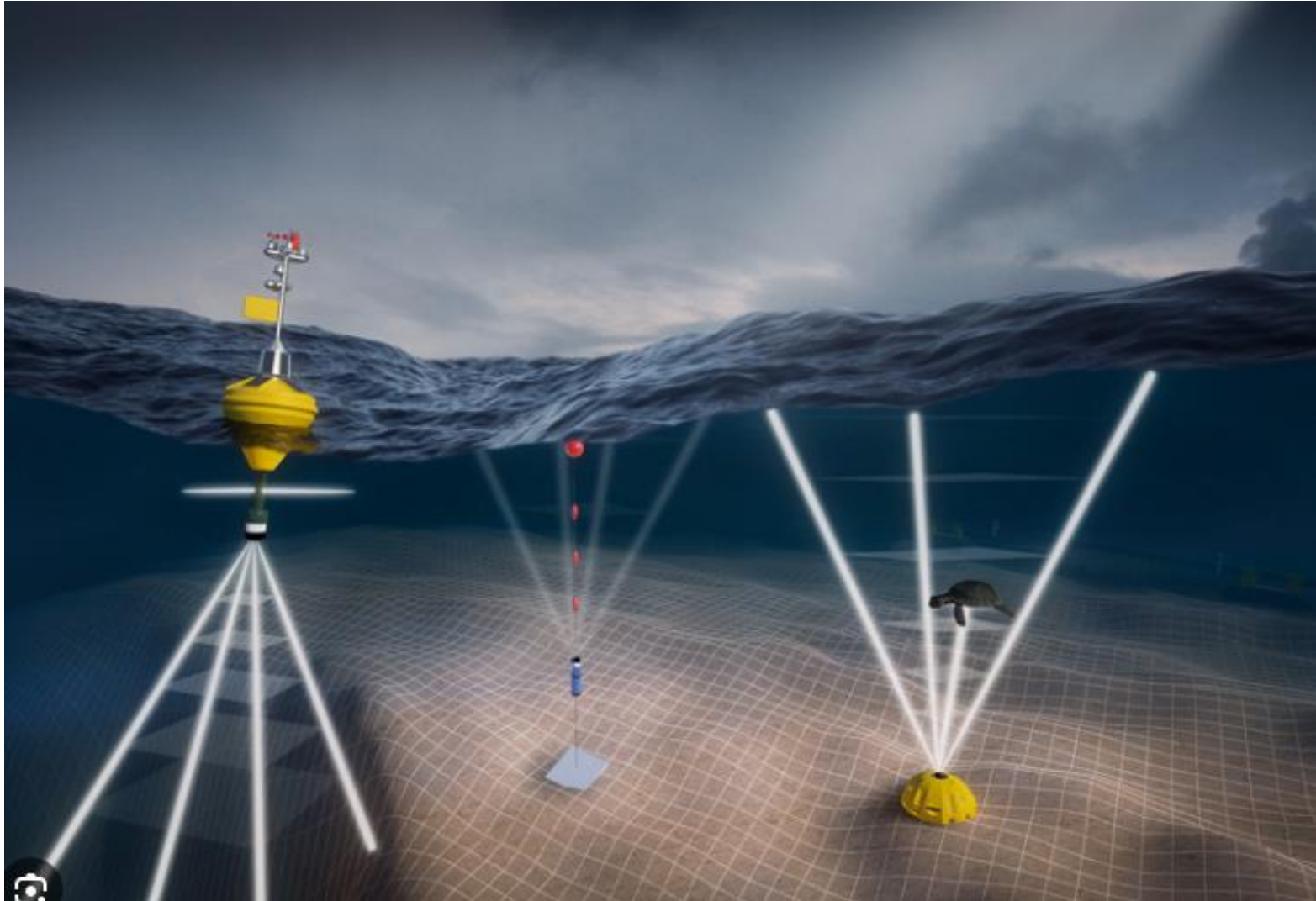
Outfall and pipeline markers (also an AtoN)



Cable markers ashore (also an AtoN)



Acoustic Doppler Current Profiler (possibly an AtoN)



Mooring Buoy (Usually not but also possibly an AtoN)



Irish Lights – An Overview

- 300 locations around the island of Ireland
- 64 lighthouses / 20 beacons / 116 buoys
- 155 electronic aids
- 12 Met Ocean Stations
- Inspect / audit 3500 local aids
- 80m multifunctional vessel (Granuaile)
- Contract Helicopter Service and 8 Heli bases
- Modern AtoN Engineering Facility (Dun Laoghaire)
- 126 Skilled Professional Staff



Overview of Irish Lights Strategy

Strategic Goals and Focus Areas 2025–2030

	1. Ensure Safe Navigation for All	Provide and regulate to international standards a network of marine aids to navigation around the island of Ireland, which is secure, resilient, and technically advanced and which protects lives, the economy, trade and the environment.
	2. Demonstrate Leadership, Collaboration and Alignment at National and International Level	Act as trusted experts working in co-operation with our national, GLA, and international partners, to align the development of safe navigation services to evolving policy, regulatory and industry needs, using innovative technology and promoting the shared and safe use of the maritime domain.
	3. Commit to Sustainable Operations, Climate Action, Protection of the Environment and Biodiversity	Make a difference by managing climate risks, reducing our impact on the environment, promoting biodiversity and capturing the opportunities that sustainability can bring.
	4. Serve Coastal Communities, Safeguarding and Sharing Our Maritime Heritage	Build relationships at a local level, by promoting the use of maritime heritage assets and by growing and harnessing our all-island Great Lighthouses of Ireland tourism partnership to maximise local benefits.
	5. Deliver Excellence and Stay True to Our Values	Combine the skills and expertise of our employees with new technologies to drive quality, reliability and continuous improvement, maintaining excellence and staying true to our values of Professionalism, Quality, Respect, Innovation, Trust and Collaboration

General Aids to Navigation

- IMO SOLAS Convention V/13
- IALA Convention
- Merchant Shipping Acts 1894, 1993, 1997
 - The superintendence and management of all lighthouses, buoys and beacons throughout Ireland and the adjacent seas and islands.
 - To erect, place, add to, alter, or remove any lighthouse, buoy, or beacon or to vary the character of any lighthouse.
 - Authority for the marking and removal of wrecks
 - Superintend and manage all maritime radio navigation systems





ILV Granuaile

80m

DP1

20T crane

40T Bollard pull

Crew 16

Passengers 12

300 sq m deck

Helipad

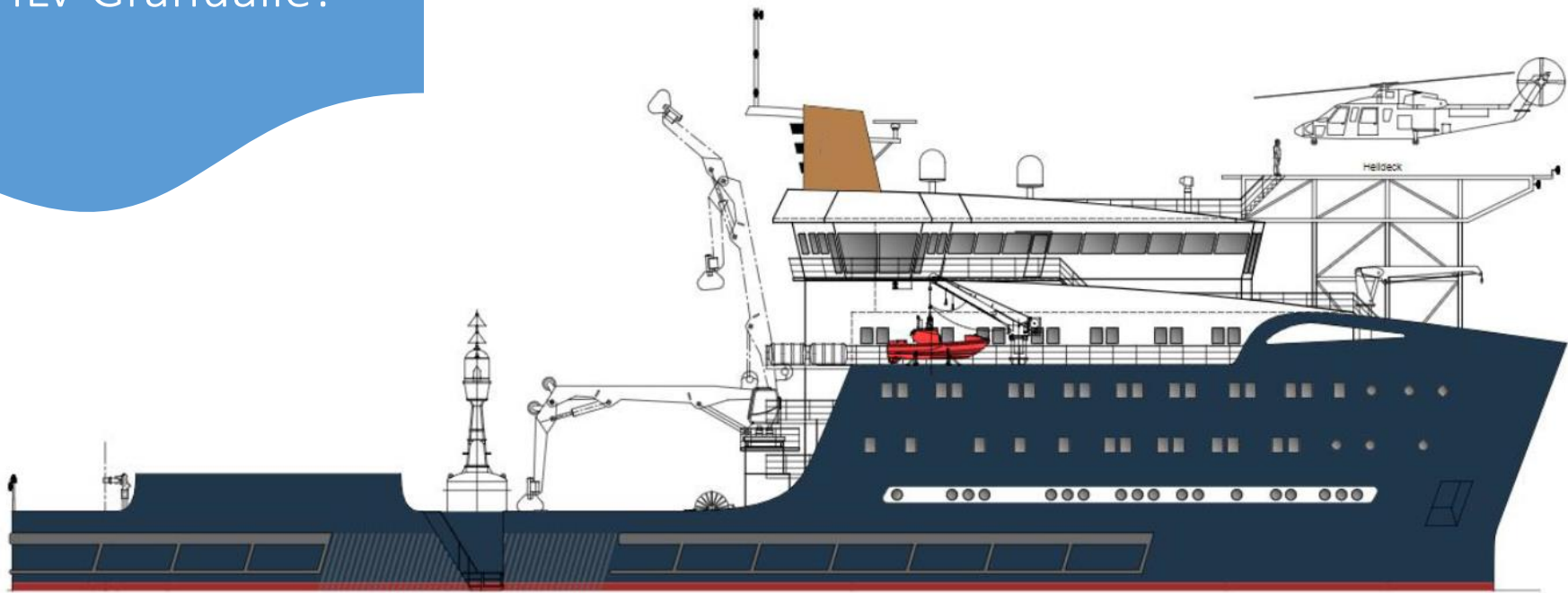
Diving LARS/ROV



GLA Mutual Support



What
capabilities
does the State
require for
the next
ILV Granuaile?



Local Aids to Navigation

- Merchant Shipping Acts 1894
- Quality Assurance of AtoN service provided by Local Lighthouse Authorities
 - “any person or body of persons having by law or usage authority over local lighthouses, buoys, or beacons, (in this Act referred to as “local lighthouse authorities)
- Irish Lights provides a consent for changes to AtoN
 - A local lighthouse authority shall not erect or place any lighthouse, buoy, or beacon, or remove or discontinue any lighthouse, buoy, or beacon, or vary the character of any lighthouse, buoy, or beacon, or the mode of exhibiting lights in any lighthouse, buoy, or beacon, without the sanction of the general lighthouse authority.
- Irish Lights provides an inspection service
 - “...inspect all lighthouses, buoys, and beacons situate within their area, but belonging to or under the management of any local lighthouse authority
- Irish Lights conducts audits of LLA policies & procedures
 - All local lighthouse authorities and their officers shall at all times give to the general lighthouse authority all such returns, explanations, or information concerning the lighthouses, buoys, and beacons under their management and the management thereof, as the general lighthouse authority require.
- Irish Lights submits a report annually to the Minister



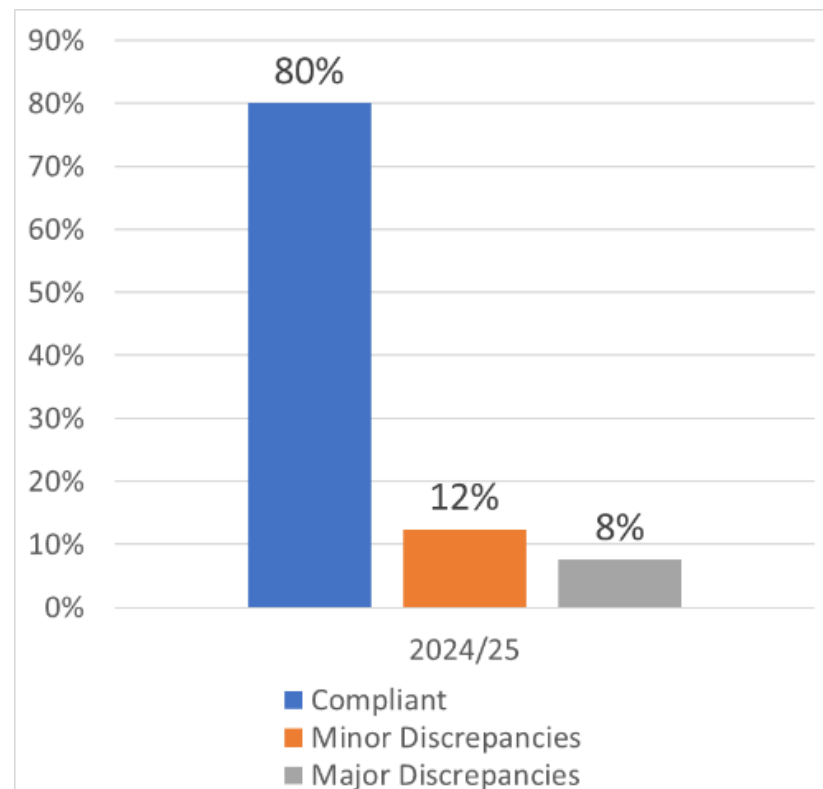
Local AtoN Management Portal



List of AtoN						
Name	Number	Latitude (WGS84)	Longitude (WGS84)	Outage	Type	Actions
Yellow Rocks, No. 6	LA0391.4000	55°03.600'N	008°18.900'W	OPEN OUTAGE	Beacon (Lighted)	Edit Report Failure
Yellow Rock Ruthland	LA0397.4000	54°58.499'N	008°26.560'W		Beacon (Lighted)	Edit Report Failure
Wyon Point	LA0397.9000	54°56.514'N	008°27.536'W		Beacon (Lighted)	Edit Report Failure
West Town Pier Head	LA0385.1000	55°15.784'N	008°13.552'W		Beacon (Lighted)	Edit Report Failure
West Town Leading Light Rear	LA0385.0100	55°15.906'N	008°13.521'W		Beacon (Lighted)	Edit Report Failure
West Town Leading Light Front	LA0385.0000	55°15.887'N	008°13.521'W		Beacon (Lighted)	Edit Report Failure
Wednesday No.3		55°17.999'N	007°18.811'W		Buoy (Lighted)	Edit Report Failure
Wednesday No.2		55°17.999'N	004°53.758'W		Buoy (Lighted)	Edit Report Failure
Turk Rocks	LA0397.8000	54°57.300'N	008°28.200'W		Beacon (Lighted)	Edit Report Failure
Torban Buoy	LA0401.3500	54°59.361'N	008°28.482'W		Buoy (Lighted)	Edit Report Failure
Third Narrows Beacon	LA0376.9000	55°10.242'N	007°42.907'W		Beacon (Unlighted)	Edit Report Failure
The Clutch	LA0397.7000	54°57.740'N	008°28.560'W		Buoy (Lighted)	Edit Report Failure
Teige's Rock	LA0396.6000	54°58.600'N	008°26.800'W		Beacon (Lighted)	Edit Report Failure
Teelin Point	LA0399.5000	54°37.325'N	008°37.718'W		Beacon (Lighted)	Edit Report Failure
Teelin Pier	LA0399.6000	54°37.485'N	008°37.881'W		Beacon (Lighted)	Edit Report Failure
Tallyowen Star	LA0401.0349	54°36.476'N	008°08.062'W		Buoy (Lighted)	Edit Report Failure
T12/498 Loughras Bay 4	LA0399.1604	54°46.056'N	008°29.407'W		Beacon (Lighted)	Edit Report Failure
T12/460A Loughras Bay 10	LA0399.1610	54°45.408'N	008°28.057'W		Beacon (Lighted)	Edit Report Failure

18 of 456 items

Local Aids to Navigation (Consents, Audits and Inspections)





Commissioners of
IRISH LIGHTS

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How does Irish Lights intersect with Marine Spatial Planning

Marine Planning Policy Hierarchy

1. Marine Planning Policy Statement (MPPS)



**2. National Marine Planning Framework (NMPF)
National Marine Spatial Plan**



3. Designated Maritime Area Plans (DMAPs)

MPPS Principles of Marine Planning

support safety at sea, particularly in relation to safety of human life at sea and aids to navigation, by promoting a culture of vigilance with an emphasis on implementation of best practice.

National Marine Planning Framework



The NMPF – Our view:

The Commissioners of Irish Lights

The Commissioners of Irish Lights is a statutory body providing a network of visual and electronic aids to navigation around the island of Ireland, which act as a critical infrastructure for safe navigation. We provide navigation advisory and information services, and we authorise, via our Statutory Consent Process, the marking / lighting of approaches to ports and harbours and all other offshore infrastructure. The NMPF will provide a new platform for engagement and dialogue with the marine industry, developers and local communities to ensure that safe navigation is a key consideration in any future proposals for the development of our marine space.

Ports, Harbours and Shipping Policy 4

Proposals within ports limits, beside or in the vicinity of ports, and / or that impact upon the main routes of significance to a port, must demonstrate within applications that they have:

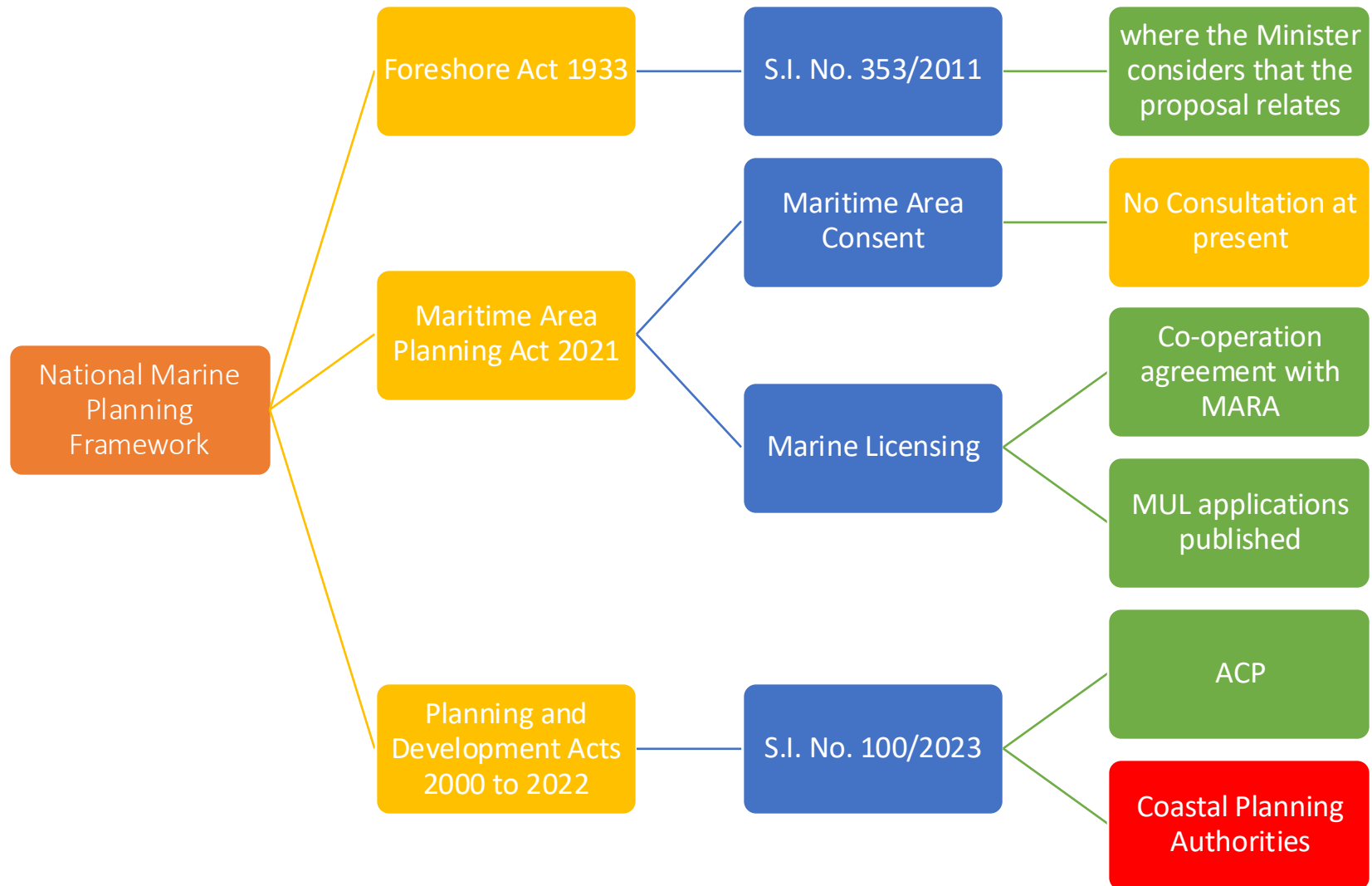
- been informed by consultation at pre-application stage or earlier with the relevant port authority;
- have carried out a navigational risk assessment including an analysis of maritime traffic in the area; and
- have consulted Department of Transport, MSO and Commissioners of Irish Lights.

Applicants must continue to engage parties identified in pre-application processes as appropriate during the decision-making process.

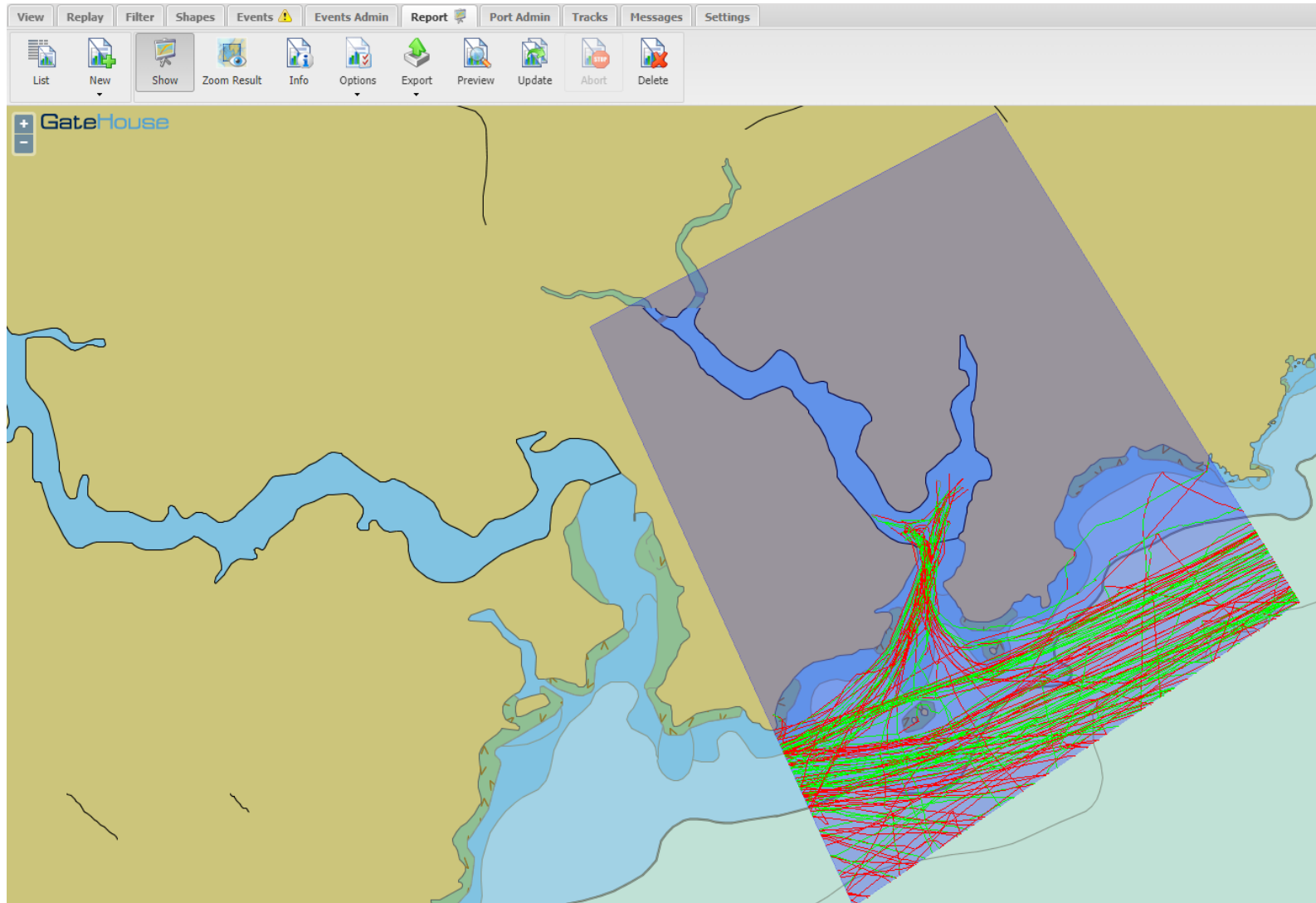
Safety at Sea Policy 4

Establishing, changing or disestablishing Aids to Navigation (AtoN) must be sanctioned, in advance of works, by the Commissioners of Irish Lights.

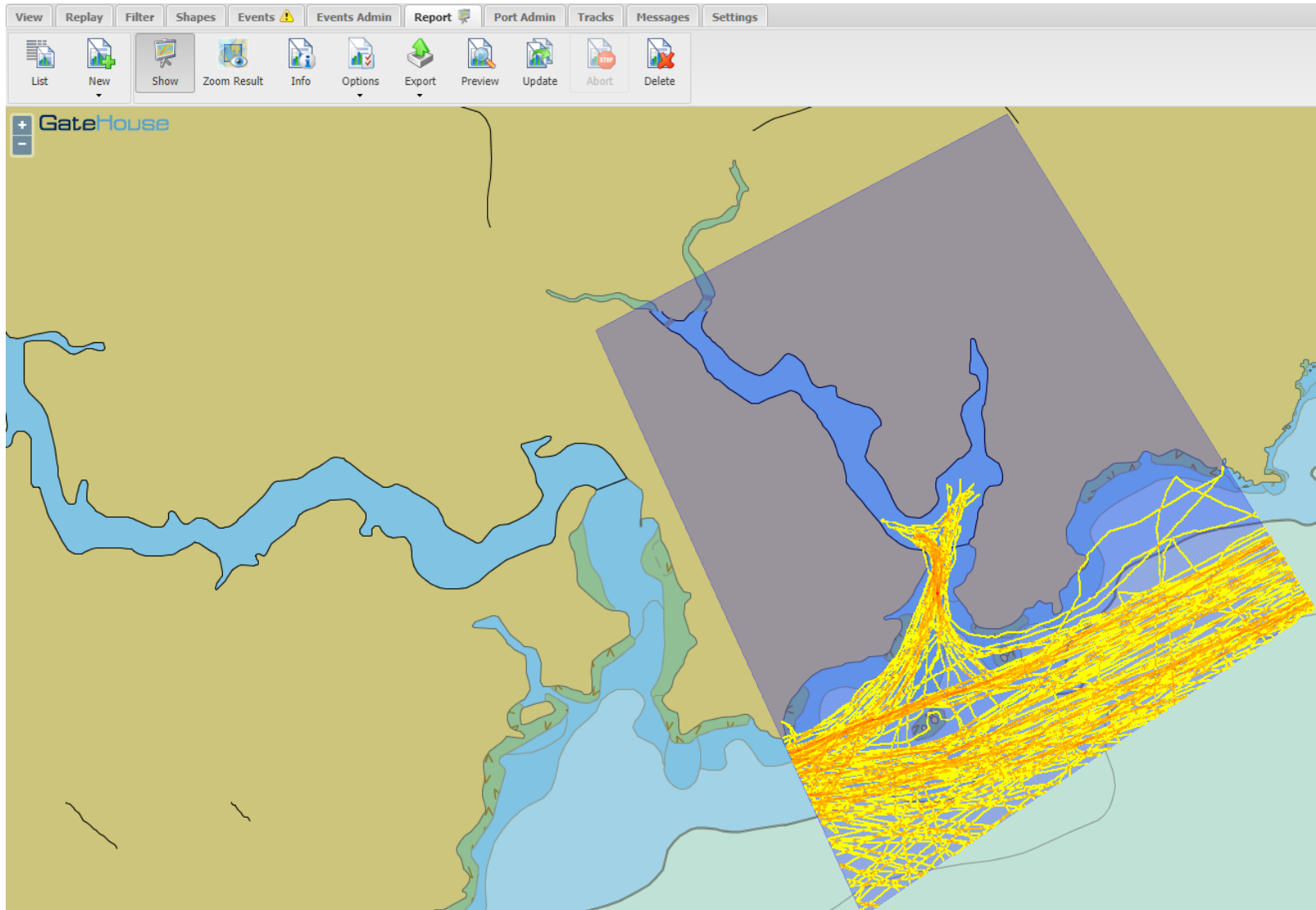
Irish Lights as a Statutory Consultee/ Prescribed Person/Body



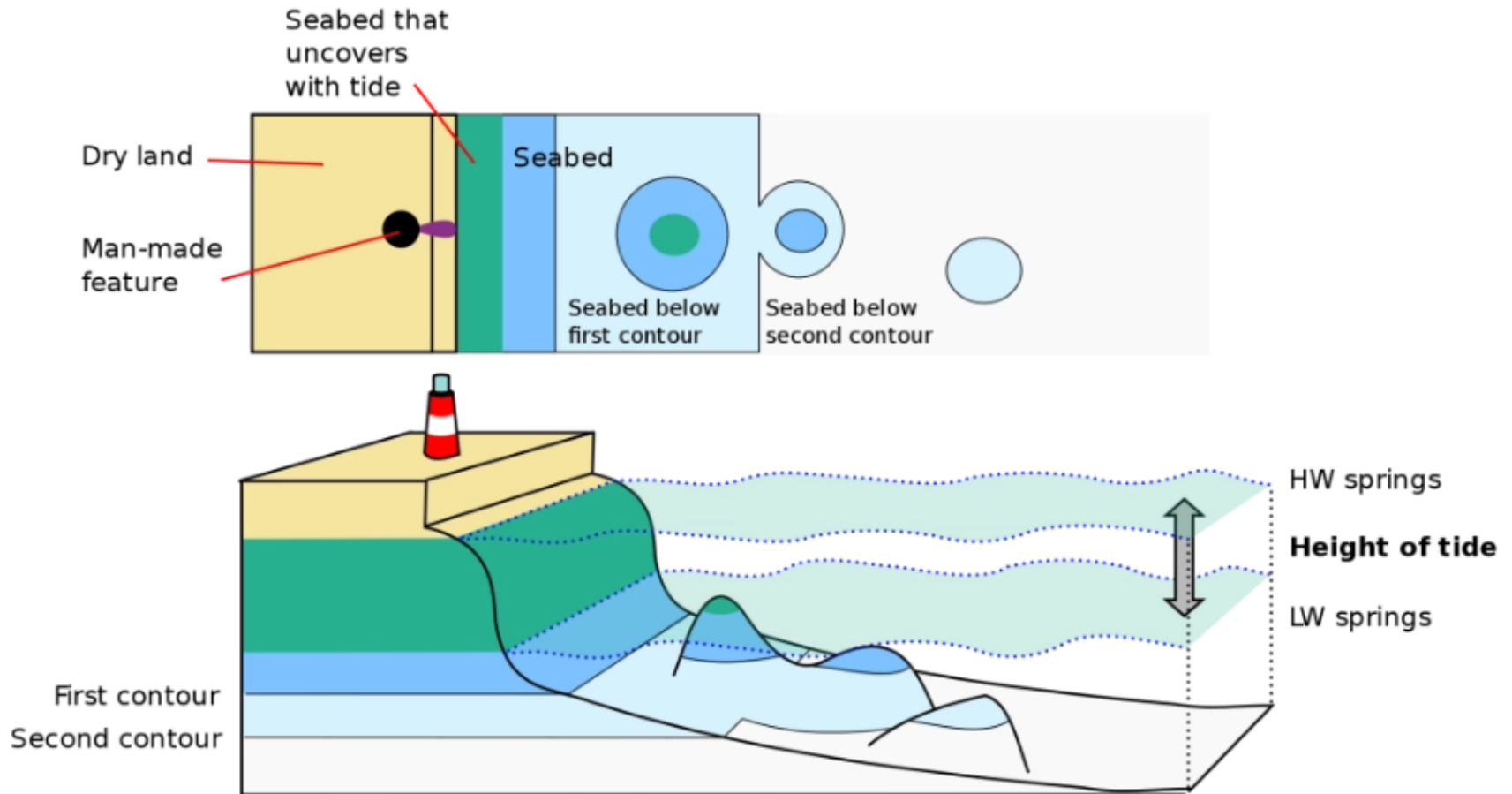
Traffic Density/ Historical track/ Navigation Risk Assessment



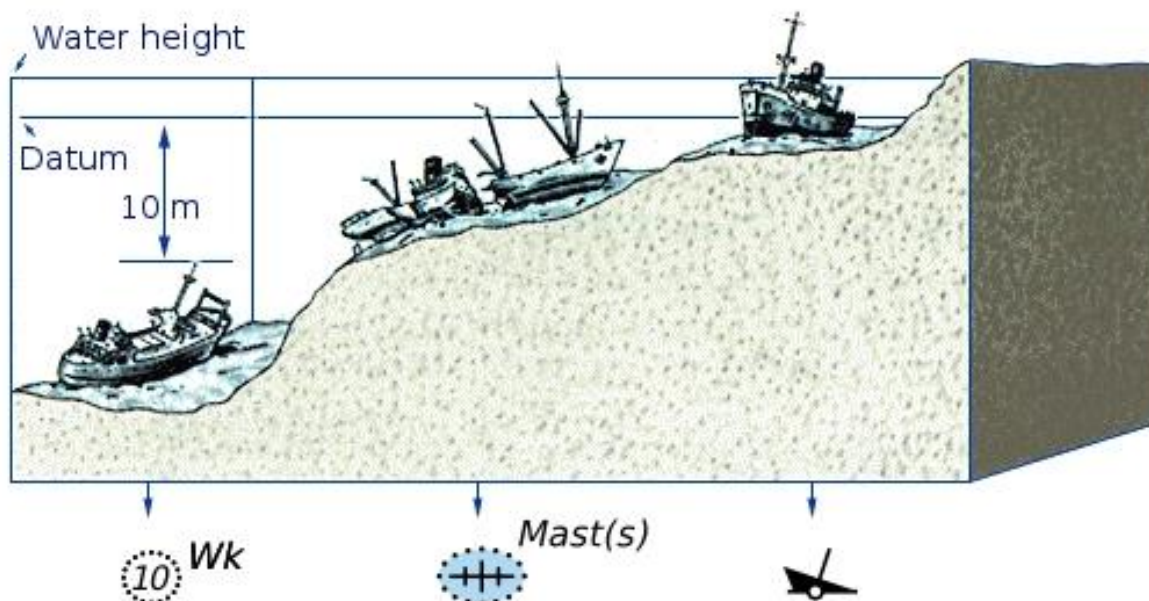
Traffic Density/ Historical track/ Navigation Risk Assessment



Advice on Safety of Navigation including correct charting



Advice on Safety of Navigation including correct charting



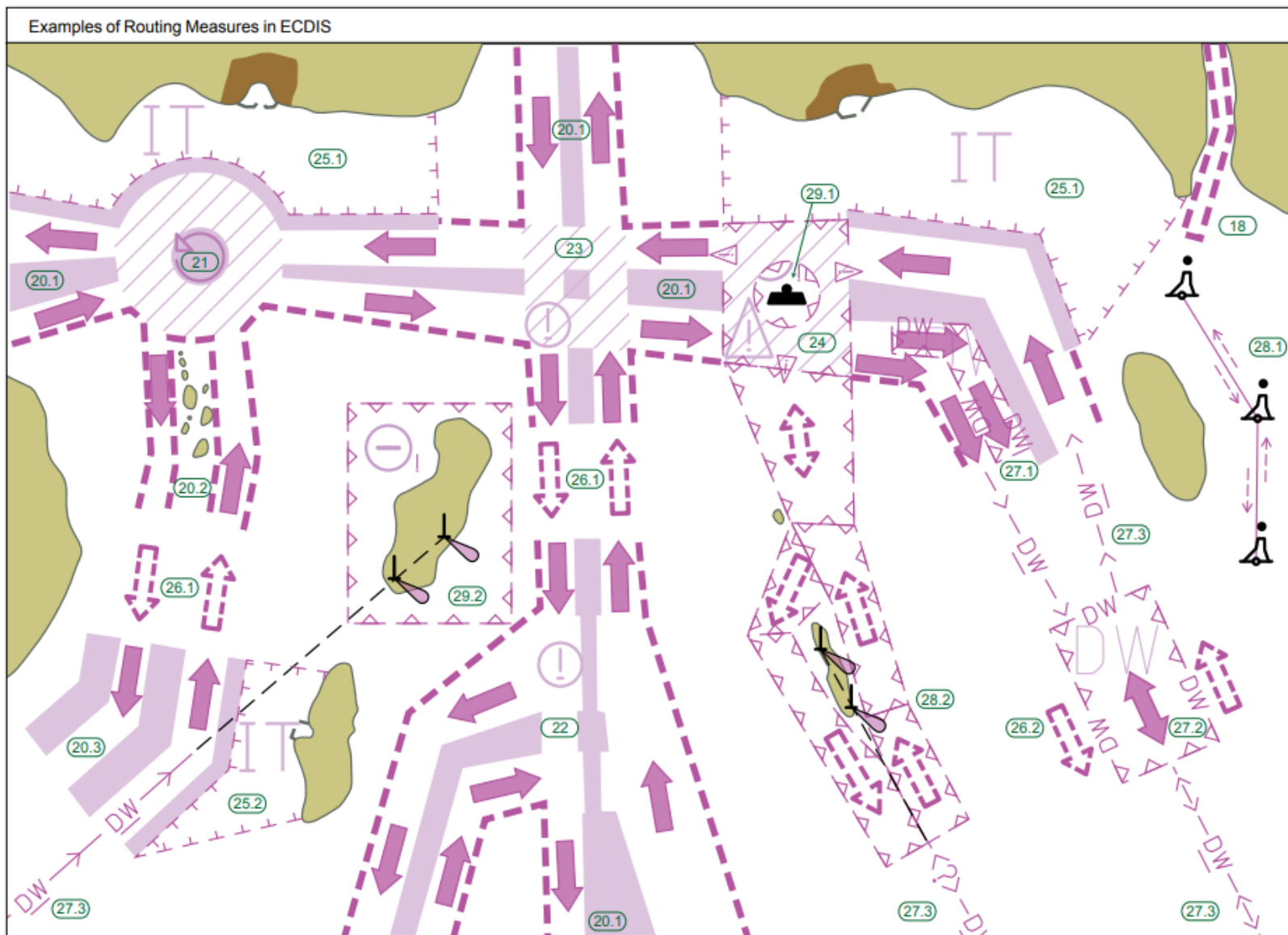
Submarine Cables						
30.1		Submarine cable				Submarine cable
30.2		Submarine cable area				Submarine cable area
31.1		Submarine power cable				Submarine cable area
31.2		Submarine power cable area				
32		Disused submarine cable				Status of disused is obtained by cursor pick
Submarine Pipelines						
40.1		Supply pipeline: unspecified, oil, gas, chemicals, water				Oil, gas pipeline, submerged or on land
40.2		Supply pipeline area: unspecified, oil, gas, chemicals, water				Submarine pipeline area with potentially dangerous contents

Advice on Safety of Navigation including correct charting

Section Key

A	INT 500 412	Chart Number, Title and Marginal Notes	INT 500 412	Mercator Projection Scale 1:100,000 at Lat. 59°30'	53rd Ed., Feb. 2019	DEPTHS IN METERS
B		Positions, Distances, Directions and Compass			Magnetic Variation 4°30'W 2011 (8°E)	LOCAL MAGNETIC ANOMALY (see note)
C		Natural Features				
D		Cultural Features				
E		Landmarks				
F		Ports				
H		Tides and Currents				
I		Depths				
J		Nature of the Seabed				
K		Rocks, Wrecks and Obstructions				
L		Offshore Installations				
M		Tracks and Routes				
N		Areas and Limits				
P		Lights				
Q		Buoys and Beacons				
R		Fog Signals				
S		Radar, Radio and Satellite Navigation Systems				
T		Services				
U		Small Craft (Leisure) Facilities				

Advice on Safety of Navigation including correct charting





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Data collection & sharing



MET éireann

Irish Meteorological Service





Swagger.

Supported by SMARTBEAR

Irish Lights MetOcean API v1 OAS3

A real time weather API, delivered via AIS from our MetOcean buoys.

NOTES

Date and Time are all UTC

Insights [HOUR]:00 - can be queried to 2015

Real Time Actual AIS message (may contain invalid data spikes and sensor freezes.)

[Terms of service](#)

[Irish Lights - Website](#)

[Send email to Irish Lights](#)

[Data Protection](#)



ERDDAP

Easier access to scientific data

ERDDAP

ERDDAP is a data server that gives you a simple, consistent way to download subsets of scientific datasets in common file formats and make graphs and maps. This particular ERDDAP installation has oceanographic data (for example, data from satellites and buoys).

Easier Access to Scientific Data

Our focus is on making it easier for you to get scientific data.

Different scientific communities have developed different types of data servers.

For example, OPeNDAP, WCS, SOS, OBIS, and countless custom web pages with forms. Each is great on its own. But without ERDDAP, it is difficult to get data from different types of servers:

- Different data servers make you format your data request in different ways.
- Different data servers return data in different formats, usually not the common file format that you want.
- Different datasets use different formats for time data, so the results are hard to compare.

ERDDAP unifies the different types of data servers so you have a consistent way to get the data you want, in the format you want.

- ERDDAP acts as a middleman between you and various remote data servers. When you request data from ERDDAP, ERDDAP reformats the request into the format required by the remote server, sends the request to the remote server, gets the data, reformats the data into the format that you requested, and sends the data to you. You no longer have to go to different data servers to get data from different datasets.
- ERDDAP offers an easy-to-use, consistent way to request data: via the OPeNDAP standard. Many datasets can also be accessed via ERDDAP's Web Map Service (WMS).
- ERDDAP returns data in the common file format of your choice. ERDDAP offers all data as .html table, ESRI .asc and .csv, Google Earth .kml, OPeNDAP binary, .mat, .nc, ODV .txt, .csv, .tsv, .json, and .xhtml. So you no longer have to waste time and effort reformatting data

Start Using ERDDAP:

Search for Interesting Datasets

- **Do a Full Text Search for Datasets**

- **View a List of All 3 Datasets**

- **Search for Datasets by Category**

Datasets can be categorized in different ways by the values of various metadata attributes. Click on an attribute ([cdm_data_type](#), [institution](#), [ioos_category](#), [keywords](#), [long_name](#), [standard_name](#), [variableName](#)) to see a list of categories (values) for that attribute. Then, you can click on a category to see a list of relevant datasets.

- **Search for Datasets with [Advanced Search](#)**

- **Search for Datasets by Protocol**

Protocols are the standards which specify how to request data. Different protocols are appropriate for different types of data and for different client applications.

Protocol	Description
griddap datasets	Griddap lets you use the OPeNDAP hyperslab protocol to request data subsets, graphs, and maps from gridded datasets

Commissioners of Irish Lights Aids to Navigation

[Dataset Actions](#)

Published by: [Commissioners of Irish Lights](#)

Licensed under: [Creative Commons Attribution 4.0](#)

Category: [Transport](#)

Views: 204

Openness rating: ★★☆☆☆

The Commissioners of Irish Lights maintain a network of operational Aids to Navigation around Ireland. An aid to navigation (AtoN) is a device or system external to a vessel that is designed to enhance the safe and efficient navigation of the vessel - such as lighthouses, buoys, beacons, lights, leading marks and radio position fixing systems. An aid to navigation station may be defined as a point on the earth's surface defined by geographic coordinates.

Public Dashboards

No dashboard exists for this dataset.

Data Resources (3)



GML

available in GML



GEO+JSON

available in GeoJSON



CSV / ZIP

available in CSV

[Preview !\[\]\(bcb10d152f88a904b5a1c5572e0b0918_img.jpg\)](#)[Download !\[\]\(43f5facbb1b80279789b86f6e3b336e8_img.jpg\)](#)[Details !\[\]\(8f8fa0bce4a16e9adcfa4b7565ed2889_img.jpg\)](#)[Download !\[\]\(629323684b3c0206a42668e6e133bb48_img.jpg\)](#)[Details !\[\]\(67ad3e9e9ee46913be608930c8bf4b62_img.jpg\)](#)[Download !\[\]\(afff7447ce0db44f3f114a81bc59f954_img.jpg\)](#)

[Commissioners of Irish Lights Aids to Navigation - Dataset - data.gov.ie](#)

Conclusions

- Irish Lights fulfils the SOLAS V/13 obligations for Ireland and Northern Ireland.
- Irish Lights provides General aids to navigation and provides quality assurance for Local aids to navigation.
- Wreck, new dangers, outage response.
- Expert advice to applicants and agencies
- Data collection and sharing
- Desired outcome – safe change management of the maritime space, resulting on zero accidents and/or pollution.



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Questions

ronan.boyle@irishlights.ie