

A large cruise ship is seen from a side profile, moving from left to right across the water. The ship has a white hull with a blue and yellow stripe along the upper decks. In the background, a tall, grey cable-stayed bridge with two main towers is visible. The sky is overcast with grey clouds. The water is dark and slightly choppy.

# **“National Approach in Data Exchange - Danish Maritime Spatial Data Infrastructure”**

Jens Peter Hartmann  
Danish Geodata Agency

# The Danish Maritime Spatial Data Infrastructure (MSDI)

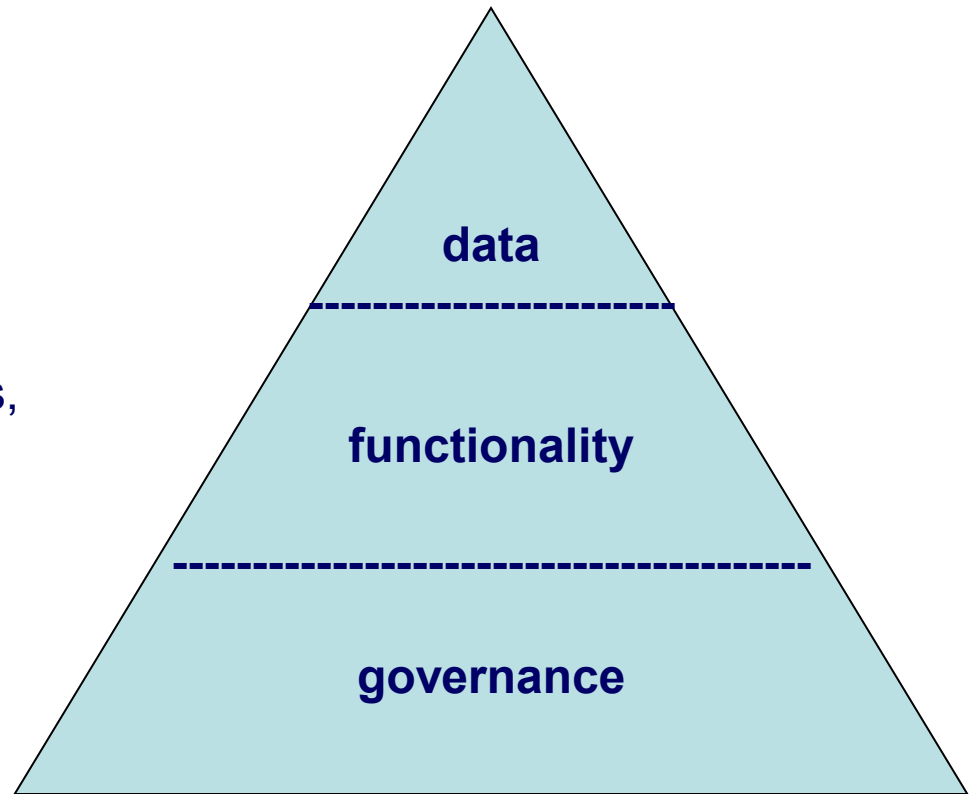
## Geo Data of the Sea

### Components of an infrastructure:

**DATA** - metadata, datasets

**FUNCTIONALITY** - spatial data services, web services and other technology

**GOVERNANCE** - Agreements and Organisation – rights and access

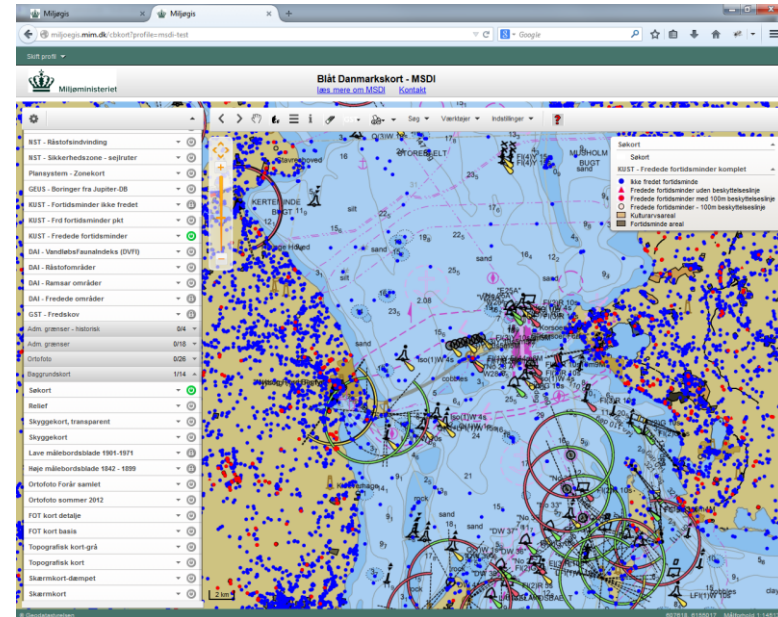


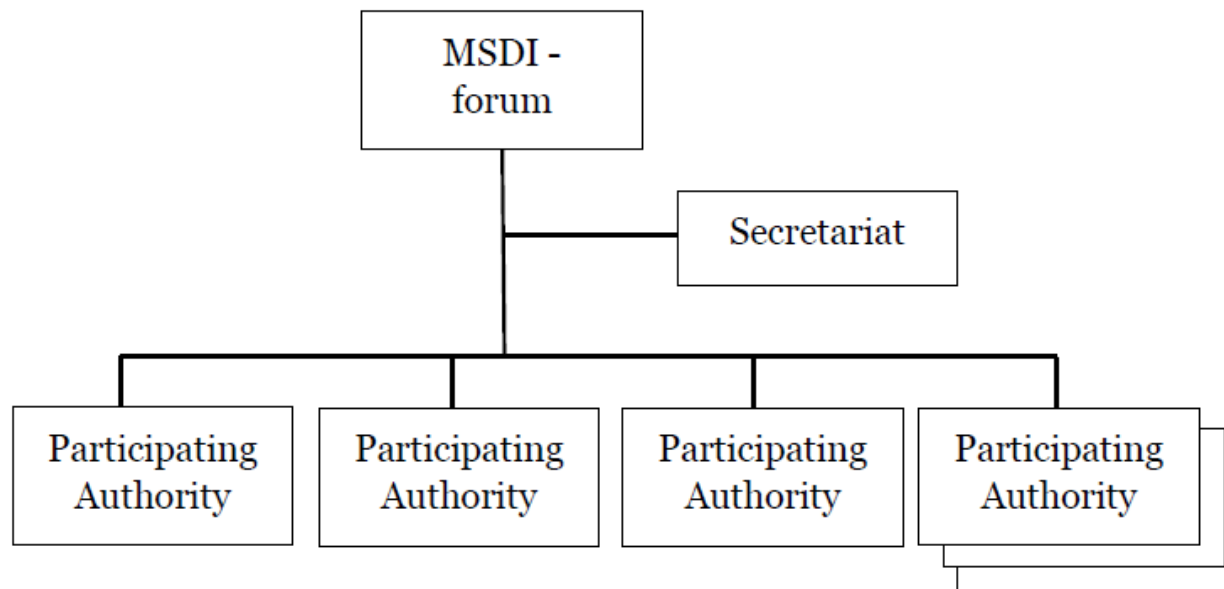
# The Danish Components of an infrastructure:

## Appendix:

1. **GOVERNANCE model** - Agreements and Organisation – rights and access
2. **Financial model**
3. **Technical description** – Functionality - spatial data services, web services and other technology, metadata
4. **Description of DATA** – datasets
5. **Implementation plan**

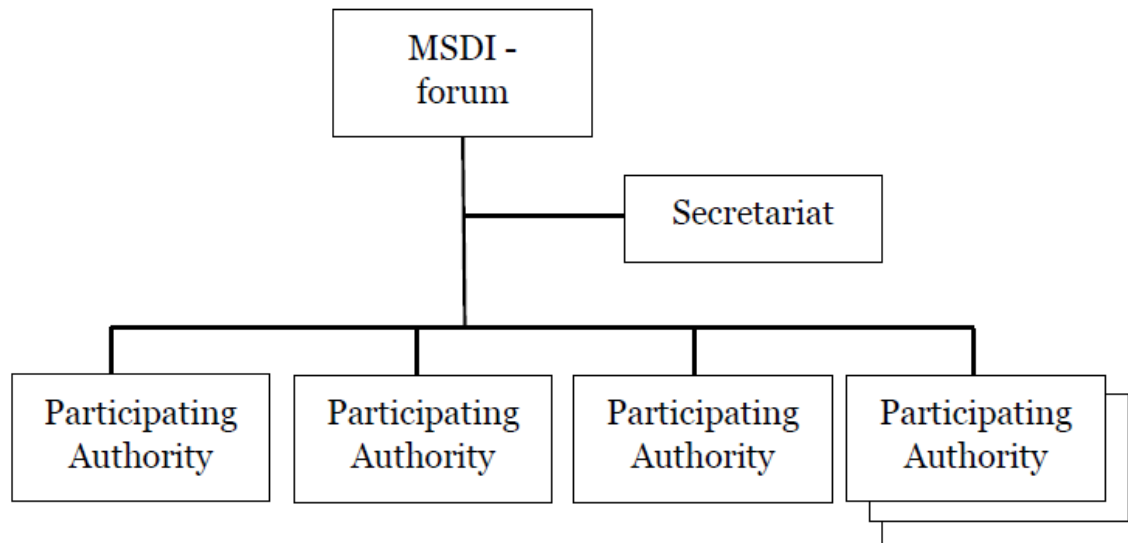
**WEB GIS solution** – “The Blue Danish sea map”





The MSDI-forum has amongst other tasks to:

- Approve cooperation agreements
- Approve the upcoming yearly budget
- Put forth new proposals to and initiate new developments for within the MSDI area, including to finance small analytical and developmental activities
- Hold meetings in the MSDI-forum based on demand, but at least once a year



The MSDI-secretariat has amongst other tasks to:

- Ensure that standards, services, etc. fulfil the requirements that are described in the technical solution for the MSDI
- Ensure that updates for data and data quality are described and implemented as agreed upon
- Be primary point of contact for technical support for the users of the MSDI
- Propose new initiatives to further develop the MSDI area
- Responsible for the administrative part of the cooperation, hereby, produce cooperation agreements and conduct and prepare documents and draft decisions for meetings in the MSDI-forum
- Offer assistance and training of colleagues to the participating authorities

# Obligations for participating authorities

The participating authorities that contribute their data commit to:

- Provide information on metadata and services as agreed upon within the technical description of the MSDI
- Identify a "single point of contact", which the MSDI secretariat can refer to in case of technical problems for an authority
- Participate in the MSDI-forum

## Financing

Authorities that want services within the MSDI, pay an annual fee in accordance to the financial model in Annex 2. This applies regardless if a participant provides data or not. Other institutions, such as universities, which, based on agreement with the MSDI-forum, contributes with relevant data to the MSDI, but do not use services from the MSDI, can do this outside of the financial agreement.

## Priced data

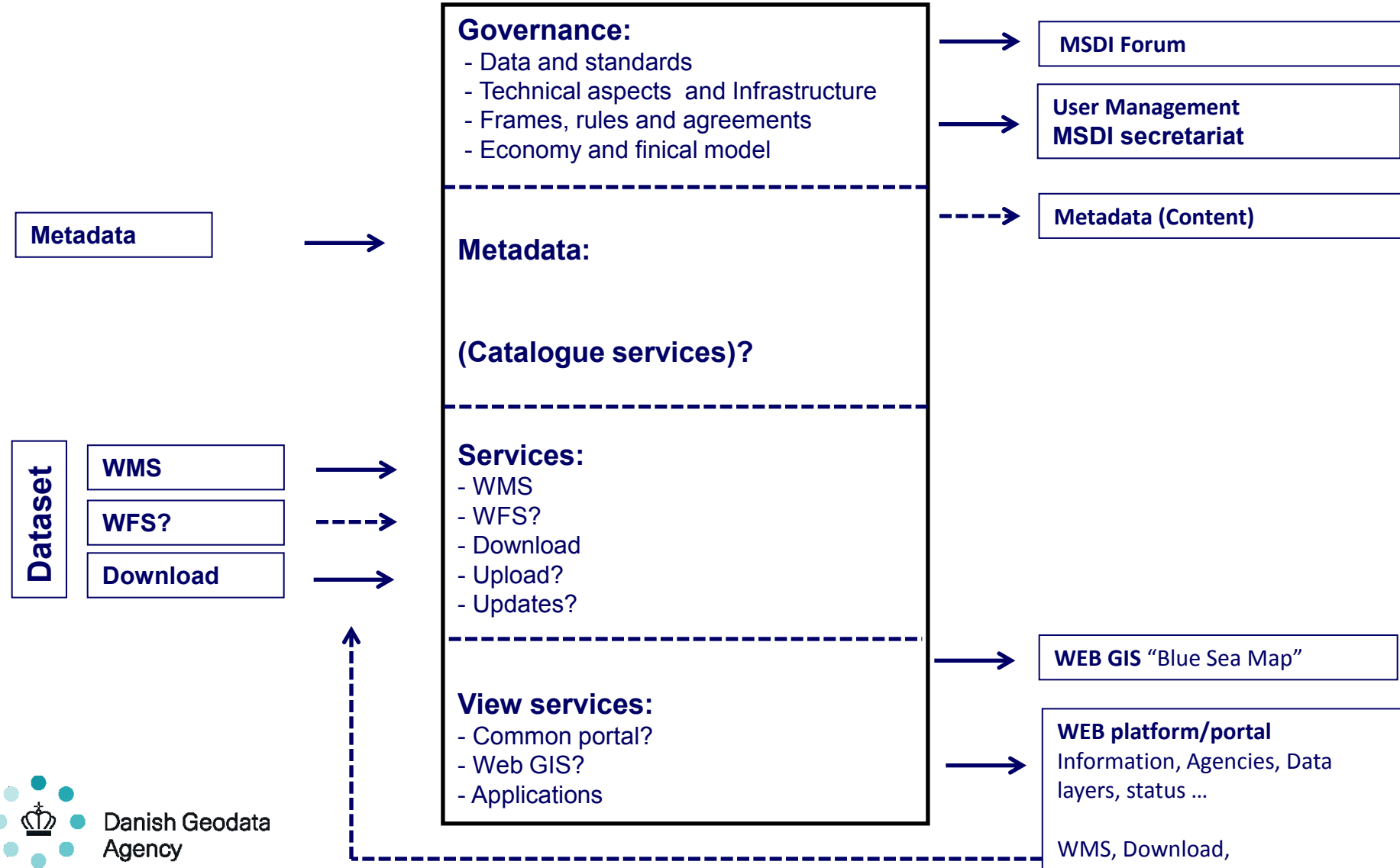
For some dataset, which will be included in the MSDI, applies that they are priced, such as nautical chart data. It is the individual data owners that set the guidelines for use of their data including access criteria, payment models and international exchange.

# Draft responsibility in the Danish MSDI:

## Agency responsibility:

## Basis MSDI:

## Output from MSDI:



# Presentations of data sets associated with MSDI and MSP

- Gives an overview of dataset needed for MSP
- Almost 80 datasets identified

ID	Oplæg vedr. datasæt i forbindelse med MSDI og MSP	P = planlægning K = kortlægning	Type af data (Punkt/Linje/Polygon/Tekst) - (Beskrivelse)	Datatej	Brugere af Data (begrundelse)	Mulighed for træk fra databaser	Metadata	Ajourføring s hyppighed	Ajourføring g årsag
6	<b>Akvakultur (nr. 6) (Havbrug inkl. muslingebrug og tanganlæg)</b>								
7	17 Havbrug	P	Polygon (information)	Naturerhverv	Bruges af FD m.fl.	Nej	Ja		
8	18 Muslingebrug	P	Polygon (information)	Naturerhverv	Bruges af FD m.fl.	Nej	Ja		
9	NY Tanganlæg	P							
10	<b>Anlæg på havet</b>								
11	Ny Anlæg etableret på søterritoriet med Kystdirektoratets tilladelser herunder (tangnanlæg, Søfly-pladser, ledninger, vrage, bygninger, lystbådehavn, fortøjningsanlæg etc.)	K	Polygoner	KDI					
12	Ny Kystbeskyttelsesanlæg	K	Polygoner	KDI					
13	Ny (Kystbeskyttelseskonstruktioner herunder høfder, stenkastning, skråningsbeskyttelse, Kystfodningsstrækninger	K	Linjer/polygoner	KDI					
14	<b>Anlæg til udvinding af energi og produktion af vedvarende energi (nr. 1)</b>								
15	15 Havvindmøller (anlægs og produktionsoplysninger) (indtegnet i søkort)	P	Linjer (information)	ENS	GST Skibsfart m.m.	DB internet			
16	Ny Havvindmøller (anlægs og produktionsoplysninger) i ENS GIS	P	Polygon (information)	ENS	GST Skibsfart m.m.	Energistyrelsens hjemmeside.			
17	Ny Tilladelser - forunder-søgelse, etablering og tilslutning.	P	Tekst (information)	ENS	GST Skibsfart m.m.	DB internet			
18	<b>Fiskeri (nr. 5)</b>								
19	Ny VMS data for fiskerifartøjer over 12 m.	K		Naturerhverv					
20	16 Bundgarn	P	Linjer (information)	Naturerhverv	Bruges af FD m.fl.	Nej	Ja		
21	22 Fiskerigrænse bundgarn indtegnet i søkort	P	Linjer	Naturerhverv	GST, SFS, Skibsfart m.m.	Nej			
22	<b>Friluftsliv (nr. 11)</b>								
23	Ny Lokale ordensreglementer og politivedtægter kan regulere forholdene i et område	P		Politi					
24	<b>Fælles forvaltnings data</b>								
25	14 DTM	K	Punkter, linjer	GST	SFS, GST Skibsfart m.m.	Kortforsyningen WMS, WFS	Ja		
26	Ny DSM	K	Punkter, linjer	GST		Kortforsyningen WMS, WFS	Ja		
27	20 Nationale grænser (Normale rette basislinjer)	K	Linjer, polygoner	GST	Bruges af andre	Kortforsyningen WMS, WFS	Ja		
28	21 3, 12 og 24 sømilgrænse	K	Linjer, polygoner	GST	Bruges af andre	Kortforsyningen WMS, WFS	Ja		
29	25 KDRT10	K	Punkter, linjer, polygoner, tekst, (informati	GST	Bruges af andre	Kortforsyningen WMS, WFS	Ja		
30	<b>Havne (nr. 12)</b>								
31	Ny Havnenes placering (fiskerihavn, erhvervshavn, lystbådehavn inden for samme havneområde)	K	Polygoner	KDI?					
32	Ny Havnegrænserne på søterritoriet	K	Polygoner	KDI?					
33	Ny Døbder i havnebassinene	K		KDI?					
34	Ny	K	Polygoner						





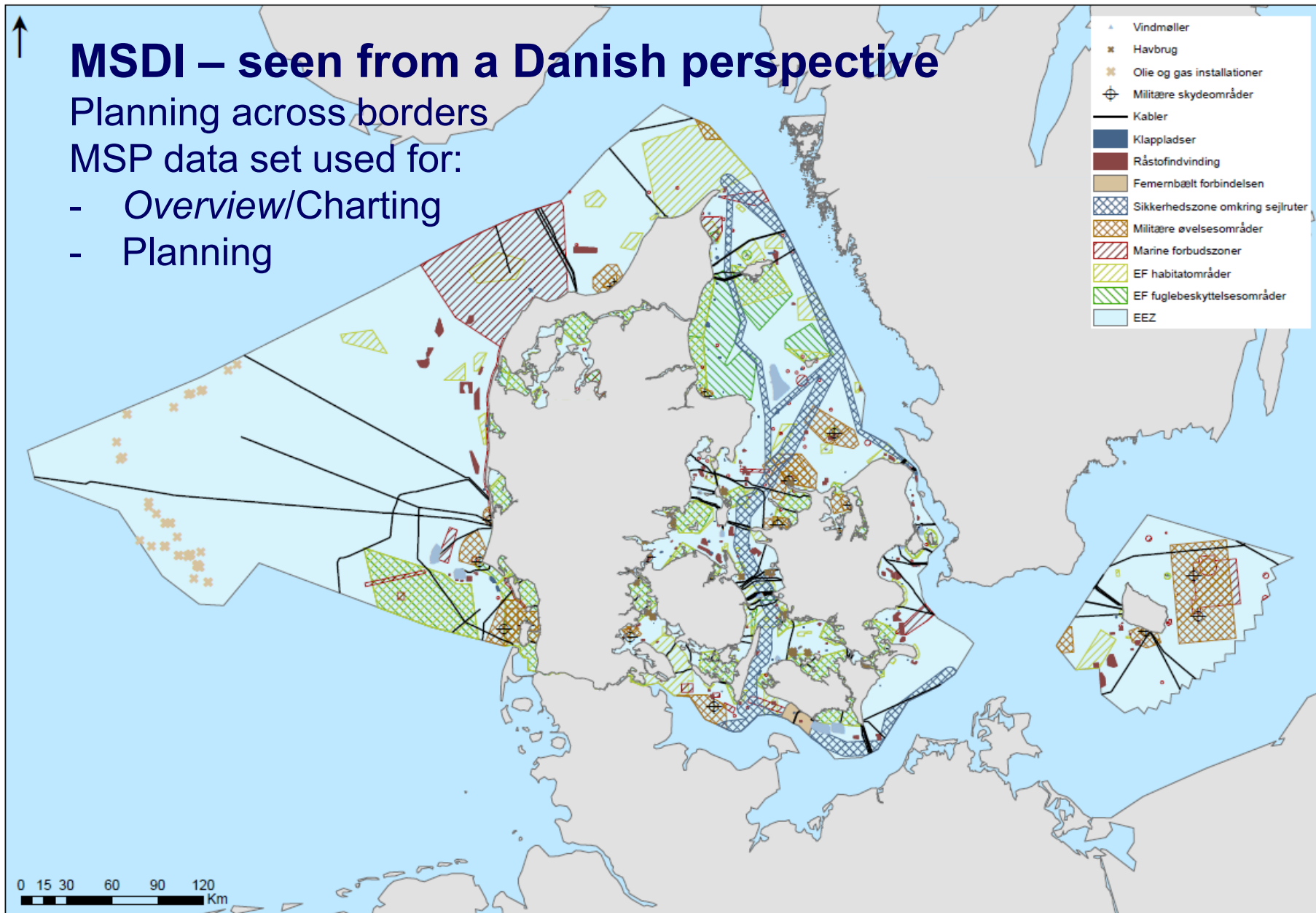


# MSDI – seen from a Danish perspective

Planning across borders

MSP data set used for:


- Overview/Charting
- Planning





# DET BLÅ DANMARKSKORT


MSDI er Danmarks blå danmarkskort. Her kan du finde alt.


[Gå til kortet >](#)

#dkipol 

 **Elisabeth A. Hølund** @MShølund  
Thorning: "Den person, FN har valgt, har en markant anderledes profil, end jeg kommer med." #dkipol  
is Retweeted by Zeb Meier Watt  
Expand 10m

 **Niels Chr. Bastholm** @nicbas  
Thorning: Nu koncentrerer jeg mig om Folketinget  
jp.dk/id=8206459 #dkipol  
@Show Summary 54s

 **drunksigningdeals** @drunksign  
Er de tyske flygbringer i sidste ende et resultat af klimaforandringer? #dkipol #dkmedier 1m

 **JP Politik** @jppolitik  
Thorning takker regeringen for støtte og er stadig kandidet for  
@JSPolitik på Østerbro #dkipol pic.twitter.com/7VQmLzNHA 1m



## Login for MSDI-medlemmer

Integer posuere erat a ante venenatis dapibus posuere velit aliquet. Morbi leo risus, porta ac consectetur ac, vestibulum at eros. Cras justo odio, dapibus ac facilisis in, egestas eget quam. Sed posuere consectetur est at lobortis.

[Gå til login](#)



Du er her: [Forside](#) / [Kort](#)



### Det Blå Danmarkskort

Curabitur blandit tempus porttitor. Maecenas faucibus mollis interdum. Morbi leo risus, porta ac consectetur ac, vestibulum at eros. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Vestibulum id ligula porta felis euismod semper.

[Gå til kort >](#)



### Det Blå Danmarkskort (inkl. søkort)

Etiam porta sem malesuada magna mollis euismod. Morbi leo risus, porta ac consectetur ac, vestibulum at eros. Praesent commodo cursus magna, vel scelerisque nisl consectetur et. Maecenas faucibus mollis interdum. Nullam id dolor id nibh ultricies vehicula ut id elit. Duis mollis, est non commodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit.

[Gå til kort inkl. søkortdata](#)



### Det marine Danmarkskort - MSDI

[læs mere om MSDI](#) [Kontakt](#)

Map interface showing the Baltic Sea region with various layers and tools.

**Layers List:**

- Søfartsstyrelsen 1/7
- Ankerpladser
- AIS Density Fiskeskibe 2014
- AIS Density Passagerskibe 2014
- AIS Density Tankskibe 2014
- AIS Density Alle skibe 2014
- Skibsruiter
- Kapsejadsbaner
- Kystdirektoratet 0/2
- Miljøportalen 0/3
- Kulturstyrelsen 0/2
- GEUS 0/1
- Geodatastyrelsen 0/1
- Havstigning
- Adm. grænser 0/15
- Ortofoto 0/12
- Baggrundskort 1/14
- Baltic Sea Bathymetry grid model 500m
- Søkort
- Skærmkort
- Skærmkort dæmpet
- Skærmkort grå
- Topografisk kort

**Map Tools:** Navigation (back, forward, pan, zoom), Search (Søg...), Skitsetegning, Værktøjer, Indstillinger.

**Map Legend:** Skibsruiter, Sejlrute, TSS

**Scale:** 20 km



» Simple søgning » Avanceret søgning

Geodata-info.dk gør det muligt at søge og finde relevante geografiske data og tjenester med udgangspunkt i korte, beskrivende oplysninger - metadata.

Søg efter geografiske data



Genvej/Browse

Emnekategori	Dataansvarlig
Landbrug	Agency for Data Supply and Efficiency
Biota	Arealdrift, friluftsliv og partnerskaber
Grænser	Banedanmark
Klimatologi/Meteorologi/Atmosfære	COWI A/S
Økonomi	DCE - Nationalt Center for Miljø og Energi
Højde	DCE AU
Miljø	DCE Aarhus Universitet
Geovidenskabelig information	DCE - Nationalt center for miljø og energi, Aarhus
Sundhed	DCE-AU
Billeder grundkort/Jorddække	Danish Geodata Agency
Efterretninger/Militær	Danmarks Meteorologiske Institut



### Nyheder

Vejledning om oprettelse af metadata for datasæt er blevet opdateret og suppleret med en videovejledning. Begge findes under menupunktet Hjælp.



### Sidst opdateret

- [WFS for INSPIRE/ELF Land Cover Vector](#)
- [WFS for INSPIRE/ELF Administrative Units](#)
- [WFS for INSPIRE/ELF Geographical Names](#)
- [Natura2000 planer](#)
- [Vandplaner](#)



# MSDI and MSP – seen from a Regional perspective

[Agriculture](#)

[Fisheries](#)

[Industrial releases](#)

[Marine protected areas](#)

**[Maritime spatial planning](#)**

[Monitoring and assessment](#)

[Response to spills](#)

[Species and habitats](#)

[Shipping](#)

[Waste water & litter](#)

[HELCOM-VASAB Maritime Spatial Planning Working Group](#)

[Horizontal Action Spatial Planning](#)

[Country fact sheets](#)

[MSP Roadmap](#)

[MSP Principles](#)

[MSP Data](#)

[MSP and fisheries](#)

[Plan Bothnia](#)

[Other MSP initiatives](#)

[Publications](#)

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## MARITIME SPATIAL PLANNING



Photo: EWEA, European Wind Energy Association 1982-2007

CO-LEADER WITH VASAB



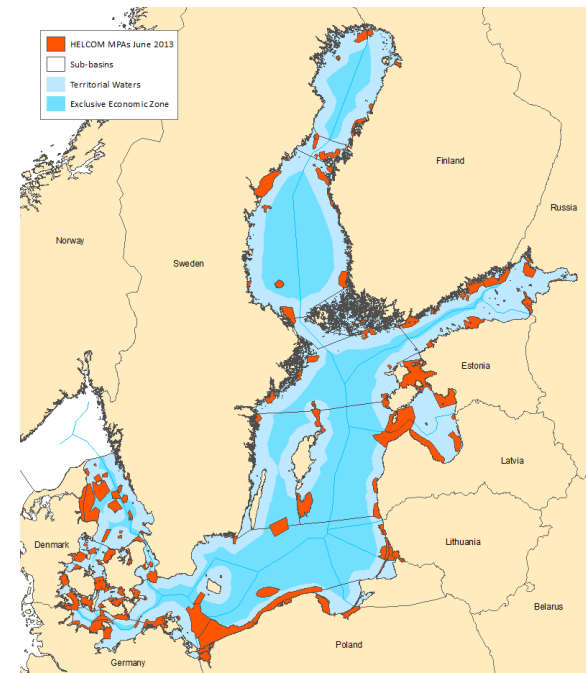
### HIGHLIGHTS

[HELCOM statement in 2014 VASAB Ministerial Conference, 26 September 2014](#)

The key to governing the fragile Baltic Sea - Maritime Spatial Planning in the Baltic Sea Region and the way forward, by Jacek Zaucha

## The Baltic Sea MSDI Working Group should:

- **Identify and analyse** the current status of individual MS MSDI implementation
- **Consider MSDI policies** within the related international project
- **Analyse how maritime authorities can contribute** their spatial information and the necessary updates, so information can easily be collated with other information to a current overall picture for the region.
- Focus on **how BSHC in the future can benefit from a regional approach**
- Monitoring MSDI and marine- related initiatives, as well as more general geospatial developments with relevance for the Baltic Sea.





# Maritime spatial planning

## Article 6

### Minimum requirements for maritime spatial planning

Member States shall establish procedural steps to contribute to the objectives listed in Article 5, taking into account relevant activities and uses in marine waters:

- (e) **Organise the use of the best available data** in accordance with **Article 10**.
- (f) **Ensure trans-boundary cooperation** between Member States in accordance with **Article 12**.
- (g) **Promote cooperation with third countries** in accordance with **Article 13**.

28.8.2014 EN Official Journal of the European Union L 257/135

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DIRECTIVES

**DIRECTIVE 2014/89/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**  
of 23 July 2014  
establishing a framework for maritime spatial planning

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Articles 43(2), 100(2), 192(1), and 194(2) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee <sup>(1)</sup>,

Having regard to the opinion of the Committee of the Regions <sup>(2)</sup>,

Acting in accordance with the ordinary legislative procedure <sup>(3)</sup>,

Whereas:

(1) The high and rapidly increasing demand for maritime space for different purposes, such as installations for the production of energy from renewable sources, oil and gas exploration and exploitation, maritime shipping and fishing activities, ecosystem and biodiversity conservation, the extraction of raw materials, tourism, aquaculture installations and underwater cultural heritage, as well as the multiple pressures on coastal resources, require an integrated planning and management approach.

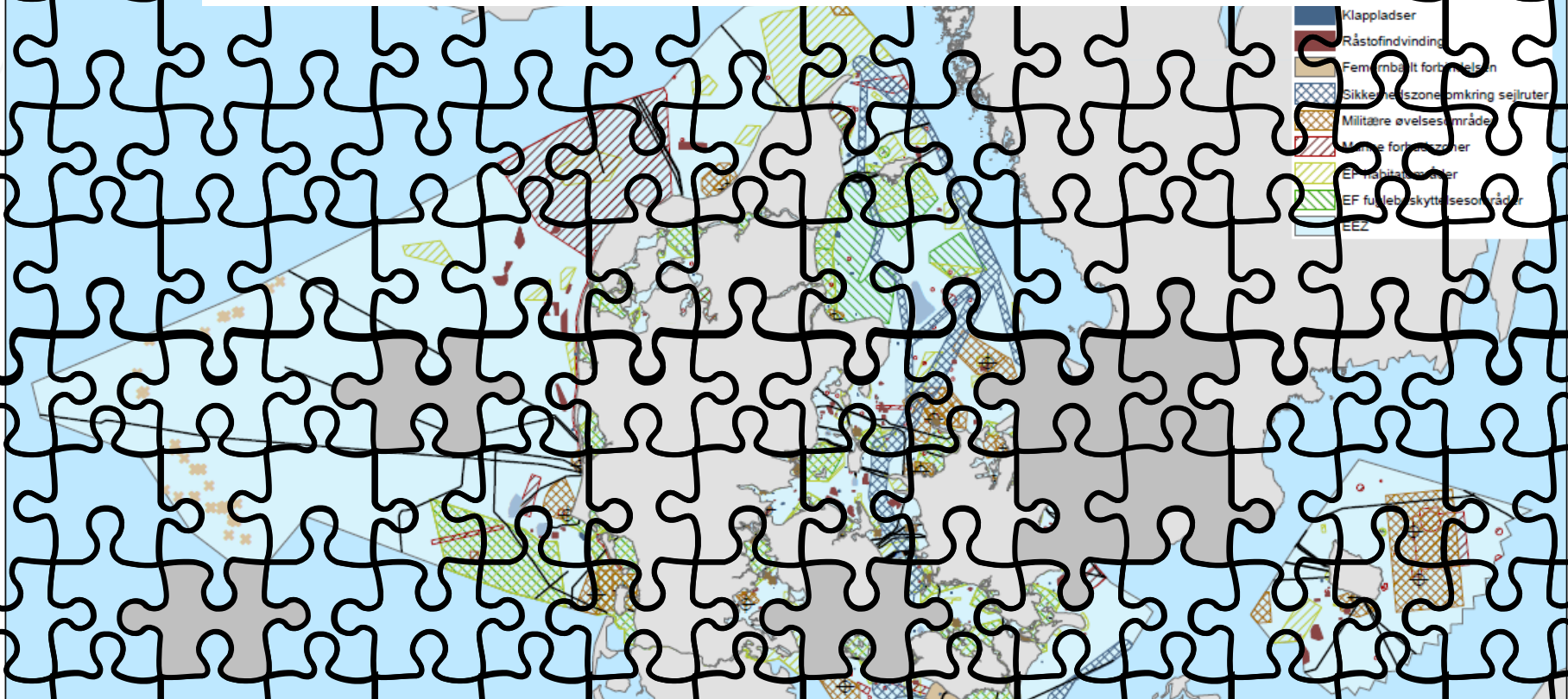
(2) Such an approach to ocean management and maritime governance has been developed in the Integrated Maritime Policy for the European Union (IMP), including, as its environmental pillar, Directive 2008/56/EC of the European Parliament and of the Council <sup>(4)</sup>. The objective of the IMP is to support the sustainable development of seas and oceans and to develop coordinated, coherent and transparent decision-making in relation to the Union's sectoral policies affecting the oceans, seas, islands, coastal and outermost regions and maritime sectors, including through sea-basin strategies or macro-regional strategies, whilst achieving good environmental status as set out in Directive 2008/56/EC.

(3) The IMP identifies maritime spatial planning as a cross-cutting policy tool enabling public authorities and stakeholders to apply a coordinated, integrated and trans-boundary approach. The application of an ecosystem-based approach will contribute to promoting the sustainable development and growth of the maritime and coastal economies and the sustainable use of marine and coastal resources.

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<sup>(1)</sup> OJ C 341, 21.11.2013, p. 67.  
<sup>(2)</sup> OJ C 356, 5.12.2013, p. 124.  
<sup>(3)</sup> Position of the European Parliament of 17 April 2014 (not yet published in the Official Journal) and decision of the Council of 23 July 2014.  
<sup>(4)</sup> Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for Community action in the field of marine environmental policy (Marine Strategy Framework Directive) (OJ L 161, 25.6.2008, p. 19).

# “Putting parts of the Marine data puzzle together ...”



## The challenges:

### Governance:

- Agree on the data-sets that should be exchanged, quality and standards
- Agree on the technical aspects, enabling the exchange of data-sets
- The organisation of regional MSDI, e.g. rules, and agreements
- Ensure coordination between, different regions and initiatives
- Economy and financial model
- Establishing Metadata



# MSDI = accessible data picture that supports activity in the sea and coastal hinterland

- Land Use
- Tourism
- Oil & Gas
- Mariculture
- Coastal Defence
- Ports & Navigation
- Military Activities
- Culture
- Conservation
- Dredging & Disposal
- Submarine Cables



Source: Defra Irish Sea Planning Pilot - 2006

▪ Fishing

▪ Renewable Energy

▪ Marine Recreation

▪ Mineral Extraction