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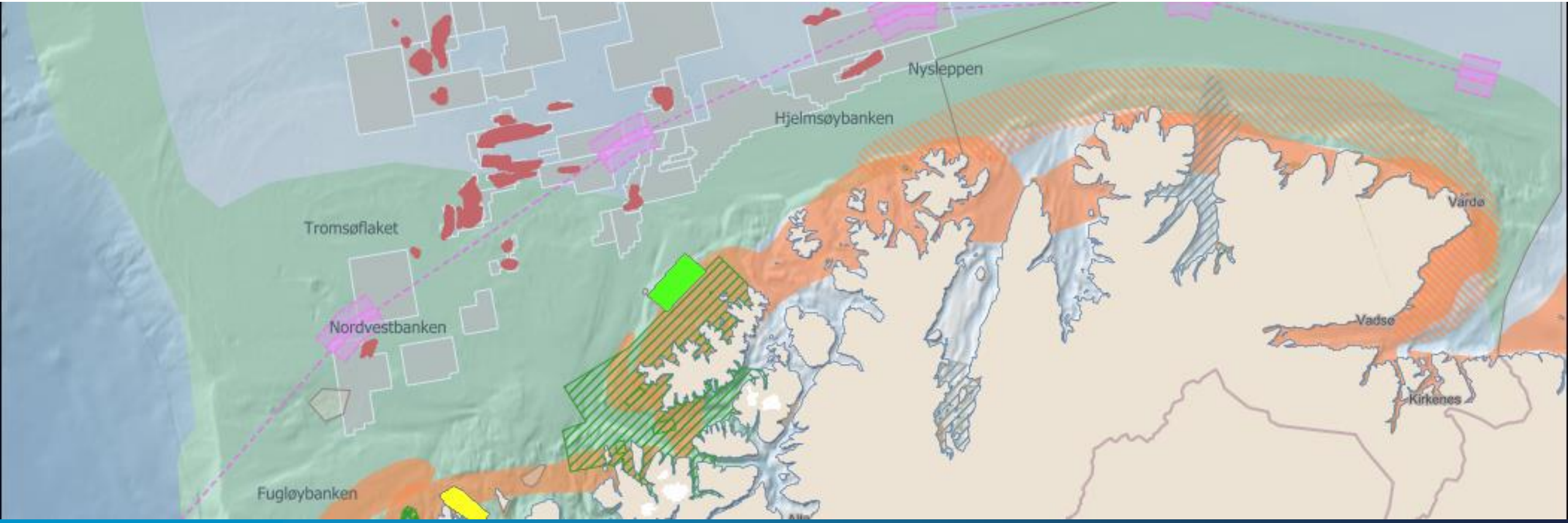
Best Practise: The Norwegian Marine Spatial Management Tool



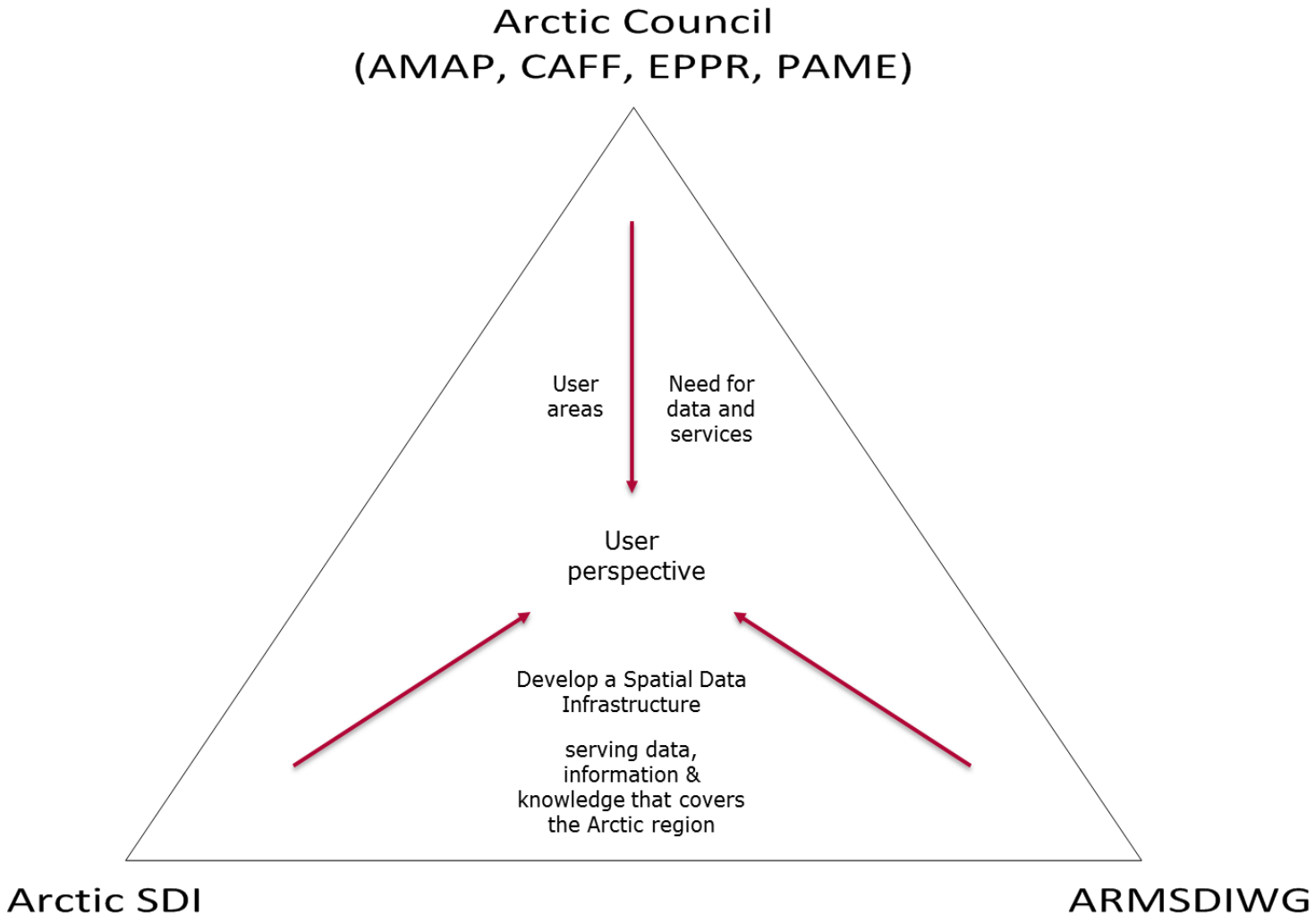
Arctic SDI

GEOSPATIAL DATA AND SERVICES - A TOOL FOR BETTER INFORMED DECISIONS AND MORE EFFICIENT ADMINISTRATION IN THE ARTIC

https://arctic-sdi.org/

Improving access to marine geospatial information in the Arctic:

Developing the cooperation



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Improve the user orientation

The user needs are the foundation of how we approach this project

Development of geospatial content and geospatial services based upon user dialogues, e.g. through user surveys, user stories, and/or product specifications, enhances the possibilities of meeting the user needs

The user communities within the Arctic Council play a vital role this development. *The project will seek participation on these arenas to ensure common matureness and understanding of the user needs*

User survey Arctic Council WG's

- Accomplished a user and data survey, winter 2017/2018
- Feedback representing user inputs from Arctic Council working groups
- An initial approach, to be continued through supplemental project activities

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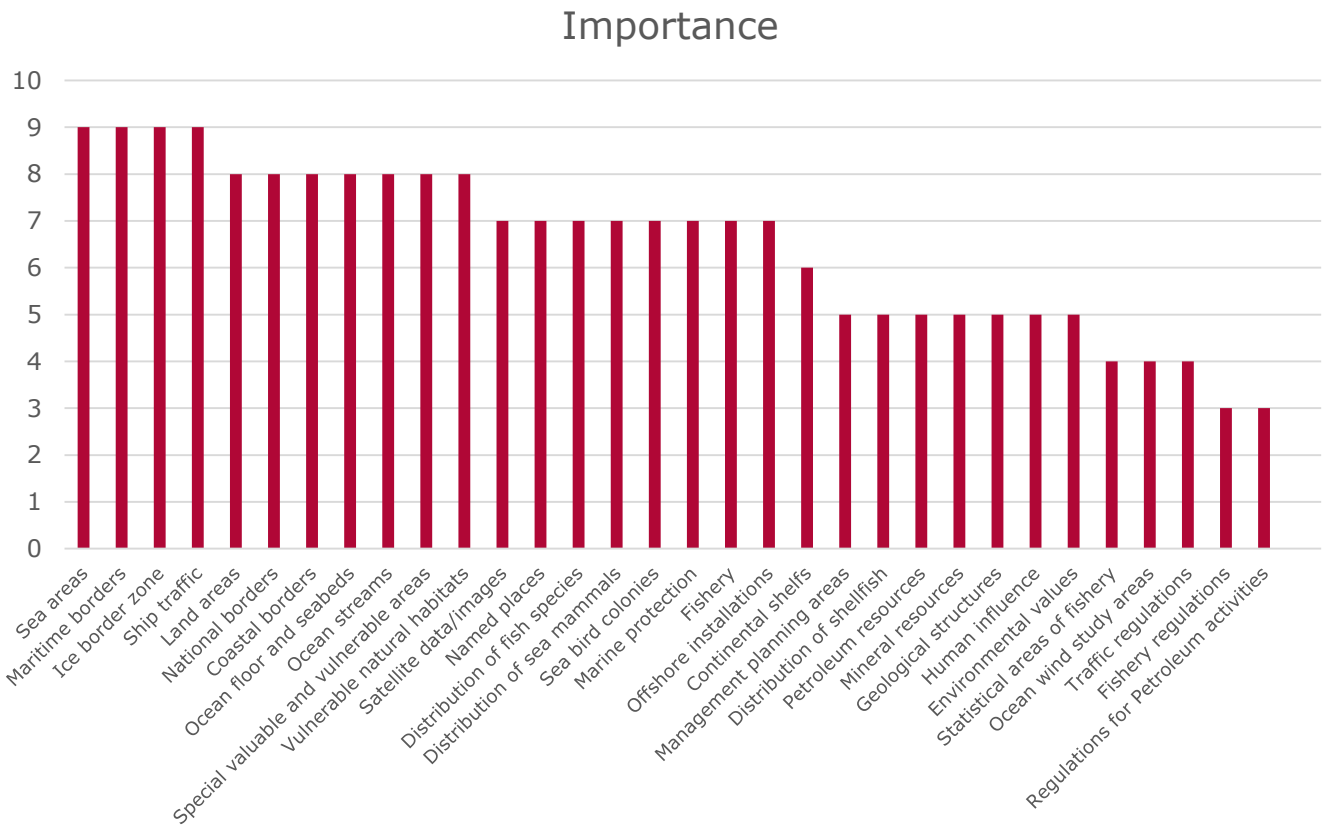
Preliminary finds

- Several prioritized datasets identified
- Quality over quantity
- Need for harmonized, integrated services
- Recommendation of using automated, web-based data harvesting and distribution technologies



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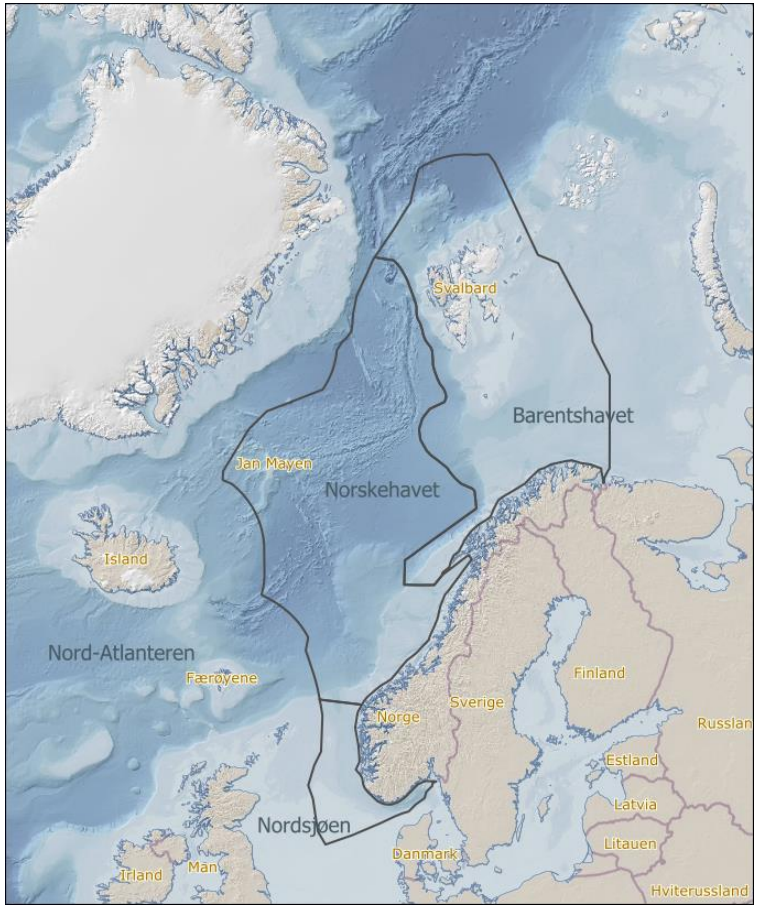
Utilizing the national SDI to support MSP

Marine management is important to Norway. We have extensive ocean areas – six times greater than our land area. These areas are very rich in resources. We also have many activities that affect the marine life.

The purpose of the management plans is to facilitate value creation while maintaining natural diversity. Sustainability.

The Ministry of Climate and Environment is responsible for the work with the management plans, and lead an intergovernmental Steering Committee that has representation from all the ministries that work with issues relating to the marine area.

The foundation is an extensive collaboration, both between expert groups and between ministries



The Norwegian Government has developed integrated marine management plans for all Norwegian sea areas

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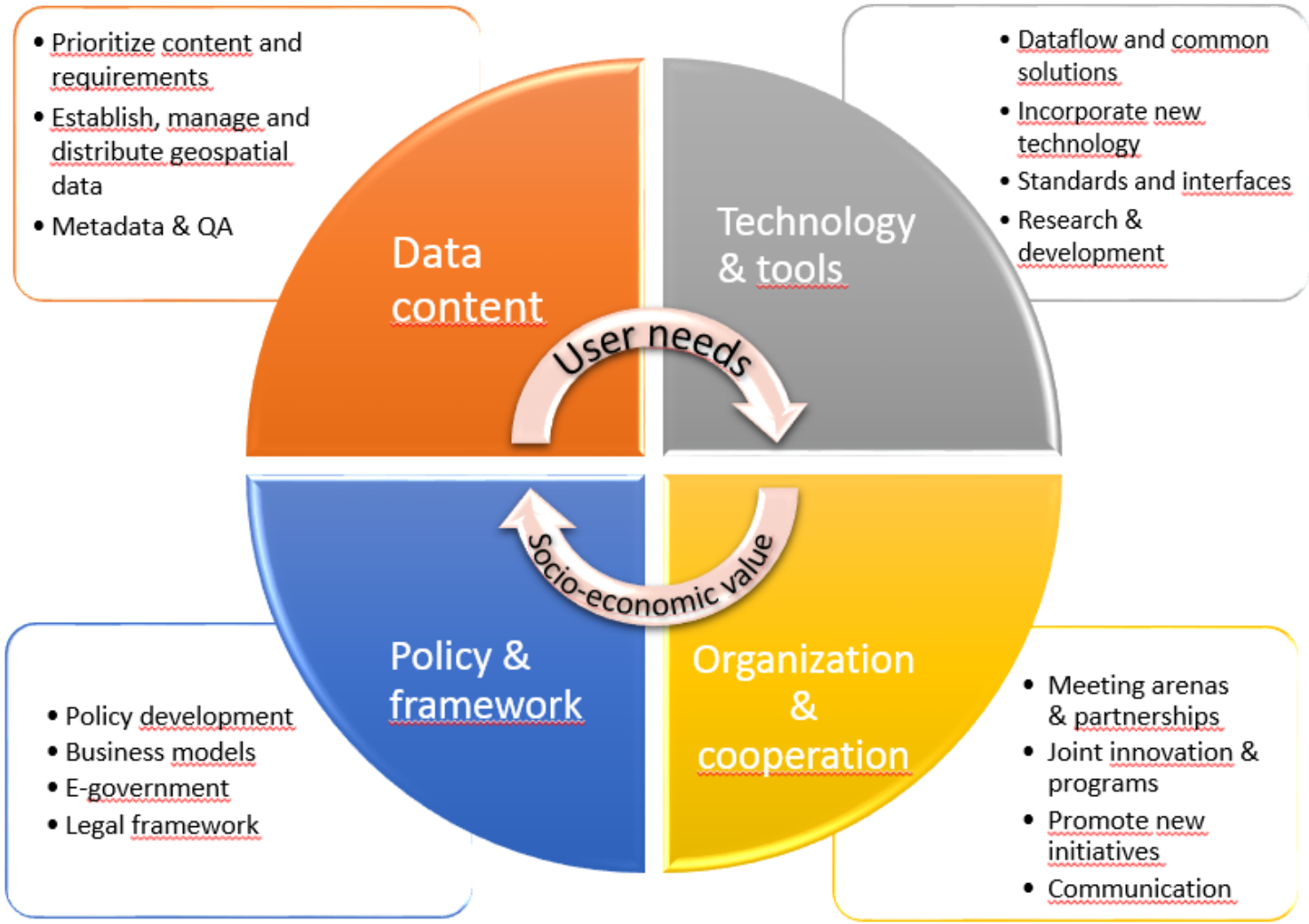
National Spatial Data Infrastructure



Marine knowledge platform

Marine geospatial information services will underpin knowledge about environmental status of the marine areas and provide a description of changes and trends for:

- environmental condition and overall load
- particularly valuable and vulnerable areas
- industry activity, current and future land use and needs, and impact on the environment and other industries
- value creation of the sea-based industries and the foundation for value creation (ecosystem services)
- risk and emergency response to acute pollution
- knowledge requirements
- implementation of measures in previous management plans that have been added to participating institutions in the Professional Forum, and assess the impact of these measures.

Marine Spatial Management Tool

Cross-sectoral project

Governmental initiative based on the need for a more coherent and uniform geographic information content, suitable for underpinning tasks attached to marine spatial planning and marine management

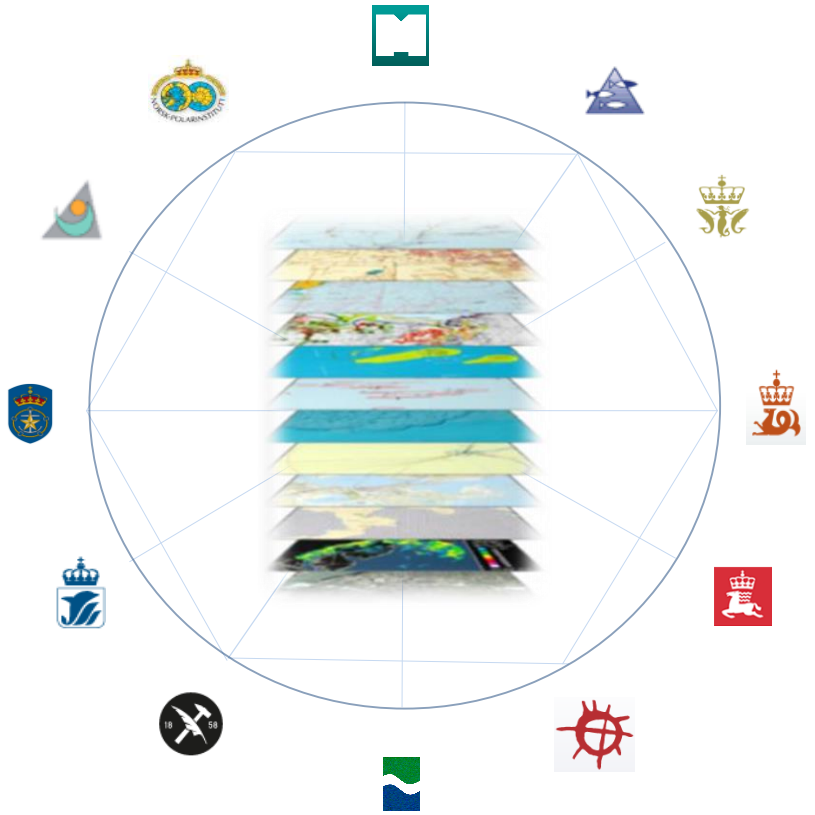
- More effective updates of the management plans
- Better overview over political decisions and actions related to marine management
- Contribute to more transparancy, openness and increased involvment from the stakeholders

Marine Spatial Management Tool

Intergovernmental cooperation

Main stakeholders

- Norwegian Environment Agency
- Norwegian Mapping Authority
- BarentsWatch
- Directorate of Fisheries
- Institute of Marine Research
- Norwegian Coastal Administration
- Norwegian Maritime Authority
- Norwegian Petroleum Directorate
- Petroleum Safety Authority
- Norwegian Radiation Protection Authority
- National Institute of Nutrition and Seafood Research
- Norwegian Polar Institute
- Norwegian Mapping Authority



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Marine Spatial Management Tool

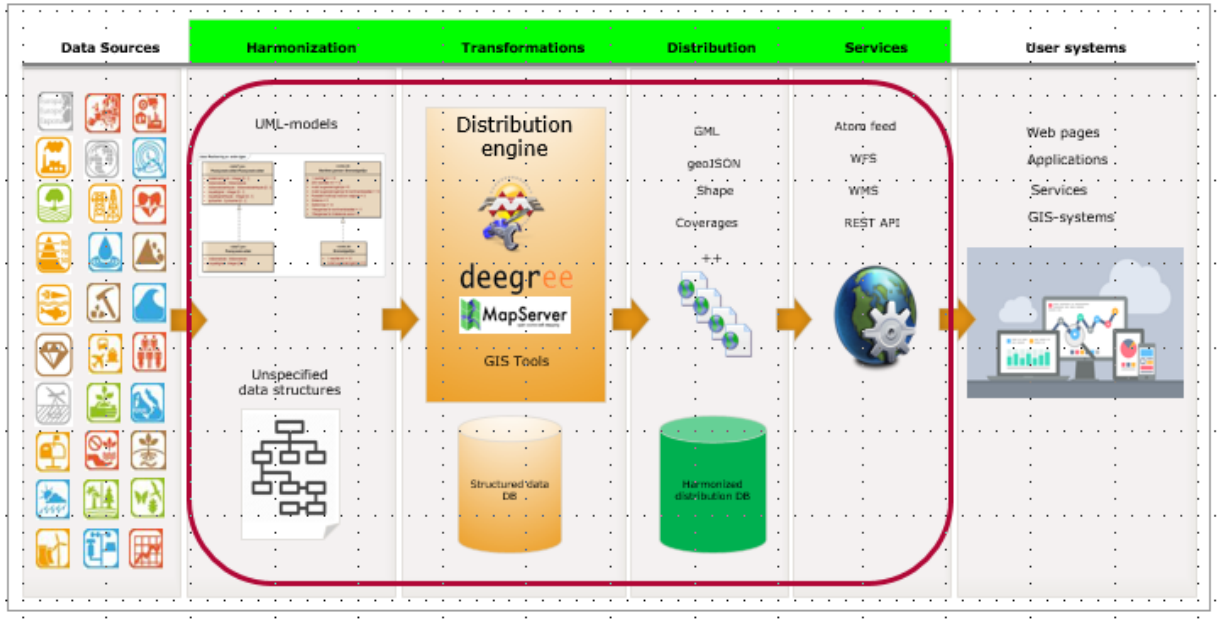
Key elements

Authoritative data: Thematic datasets provided by the corresponding sectoral authority (data owners)

Interoperability: Data available through standardized geospatial services by each individual data owner. (Mainly OGCs WMS, WMS-T, and WFS at the moment).

Documentation: Datasets and services documented by the data owner through metadata registrations in the national SDI (official announcement / productifiction of a datasets / services)

Harmonization: Terminology and cartography harmonized for good interaction and effective use of information



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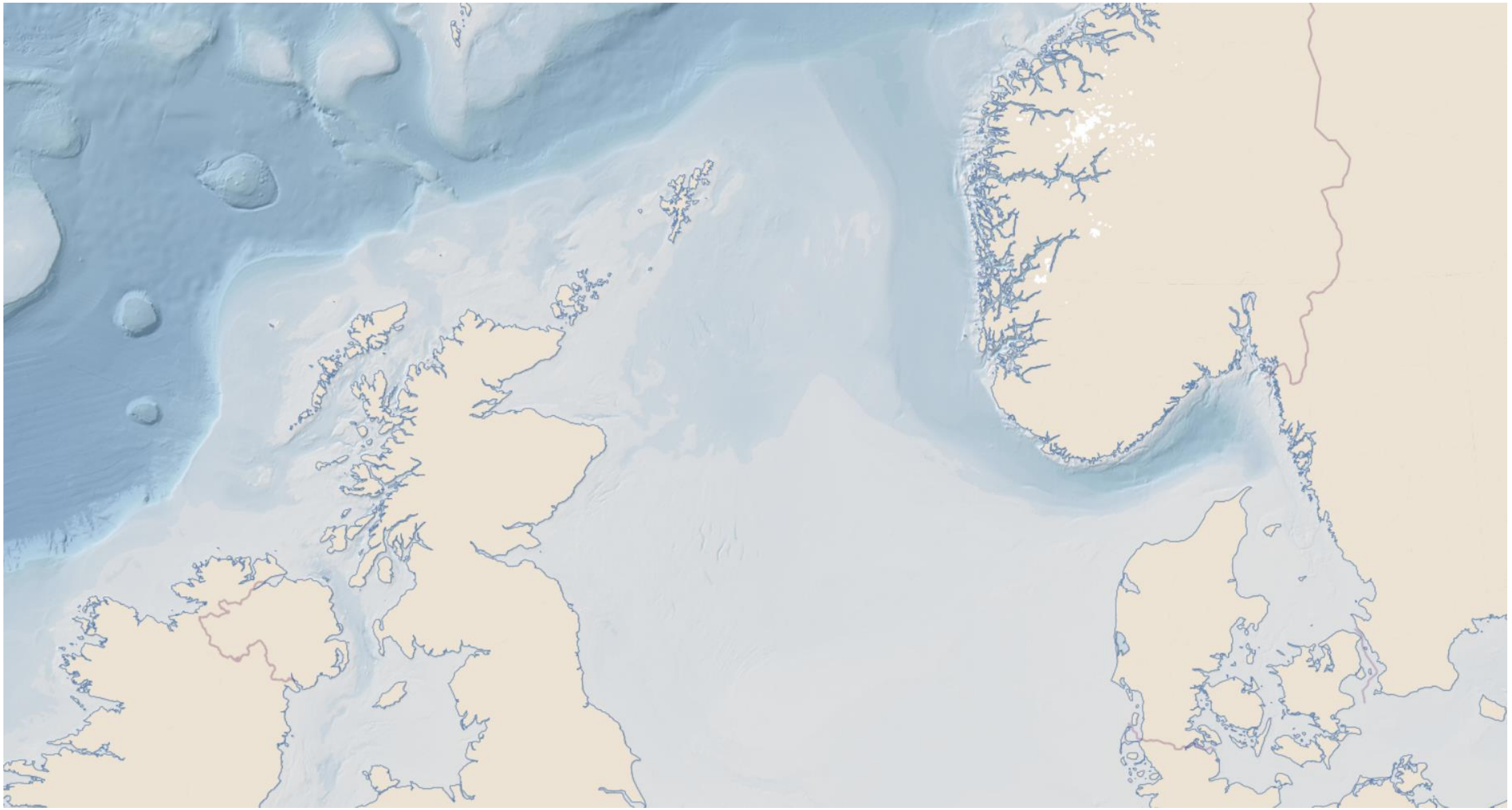
Marine Spatial Management Tool

Examples of building thematic maps

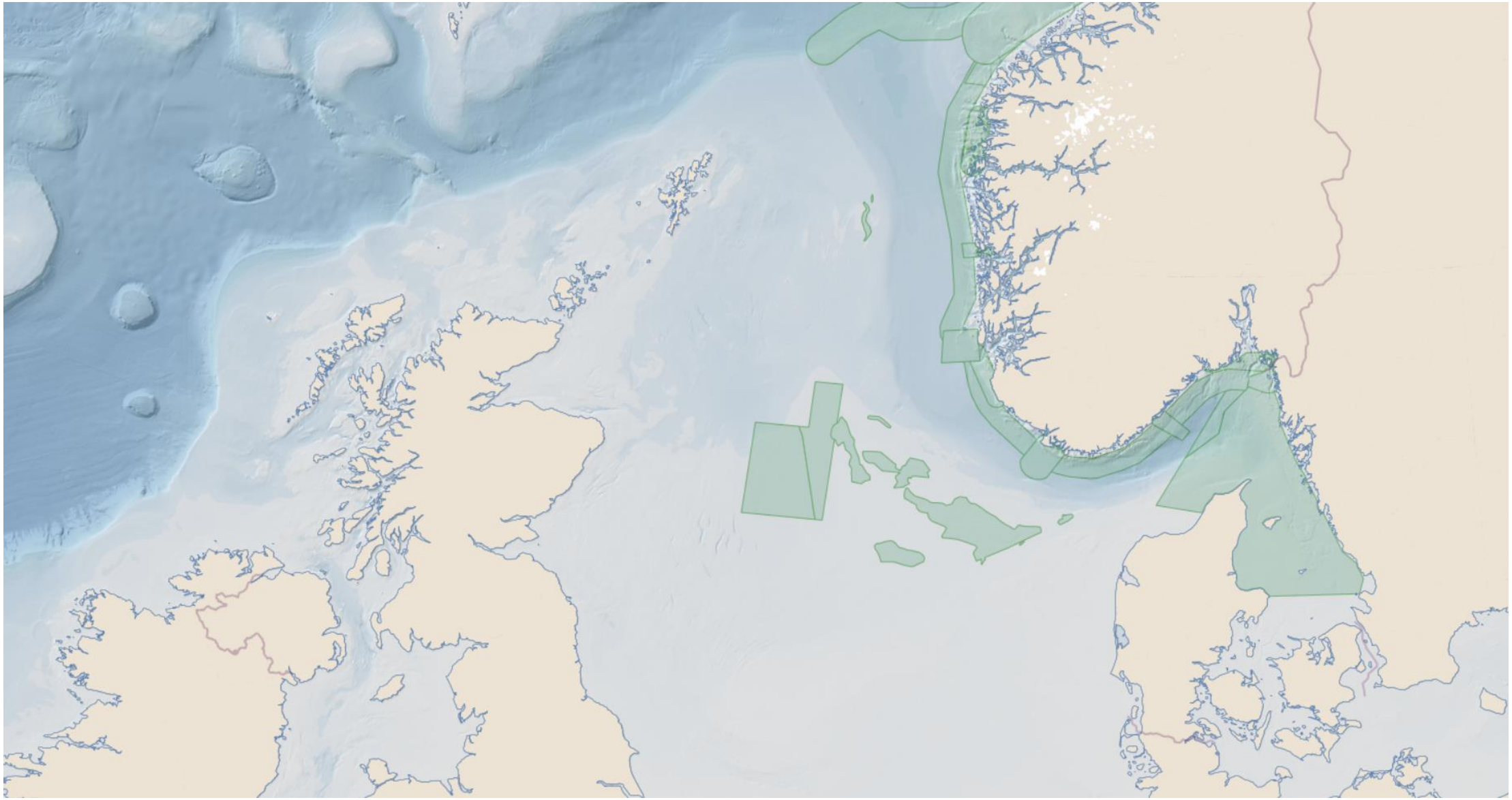
Status at the moment:

- 30 main categories of thematic data available through corresponding geospatial services
- Served by 11 governmental agencies

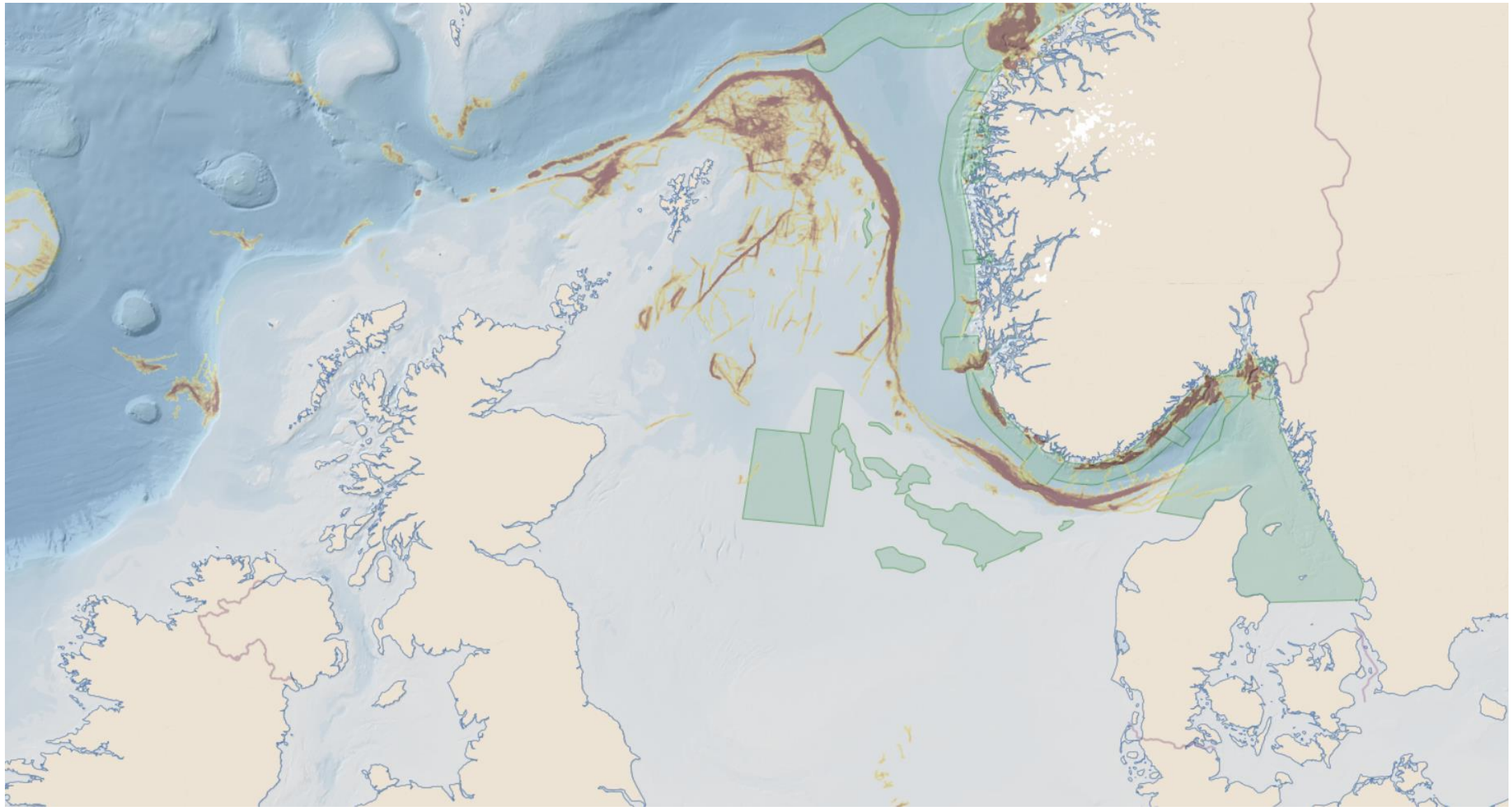
Base map (+ bathymetry)



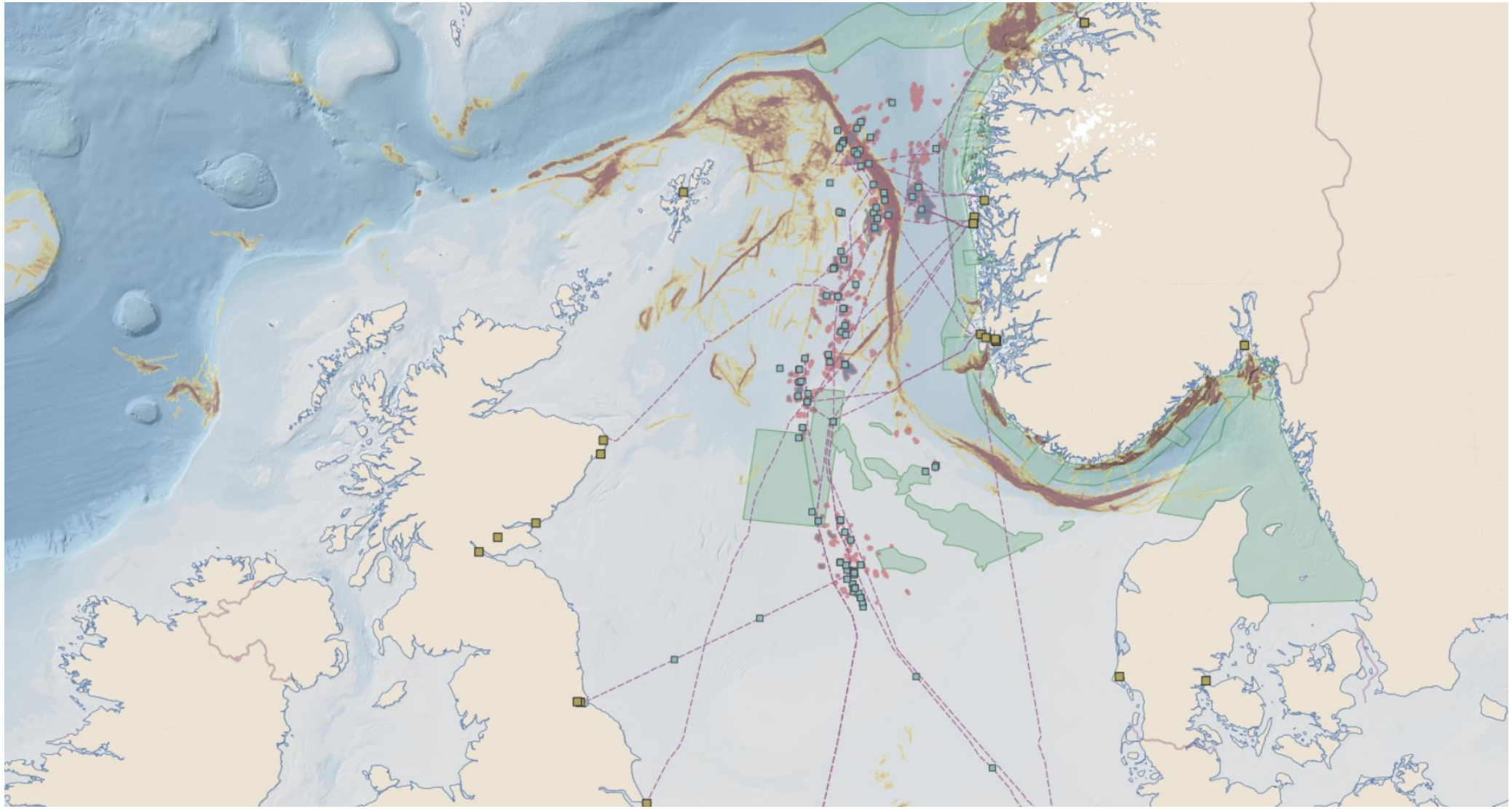
Particularly valuable marine areas + Base map



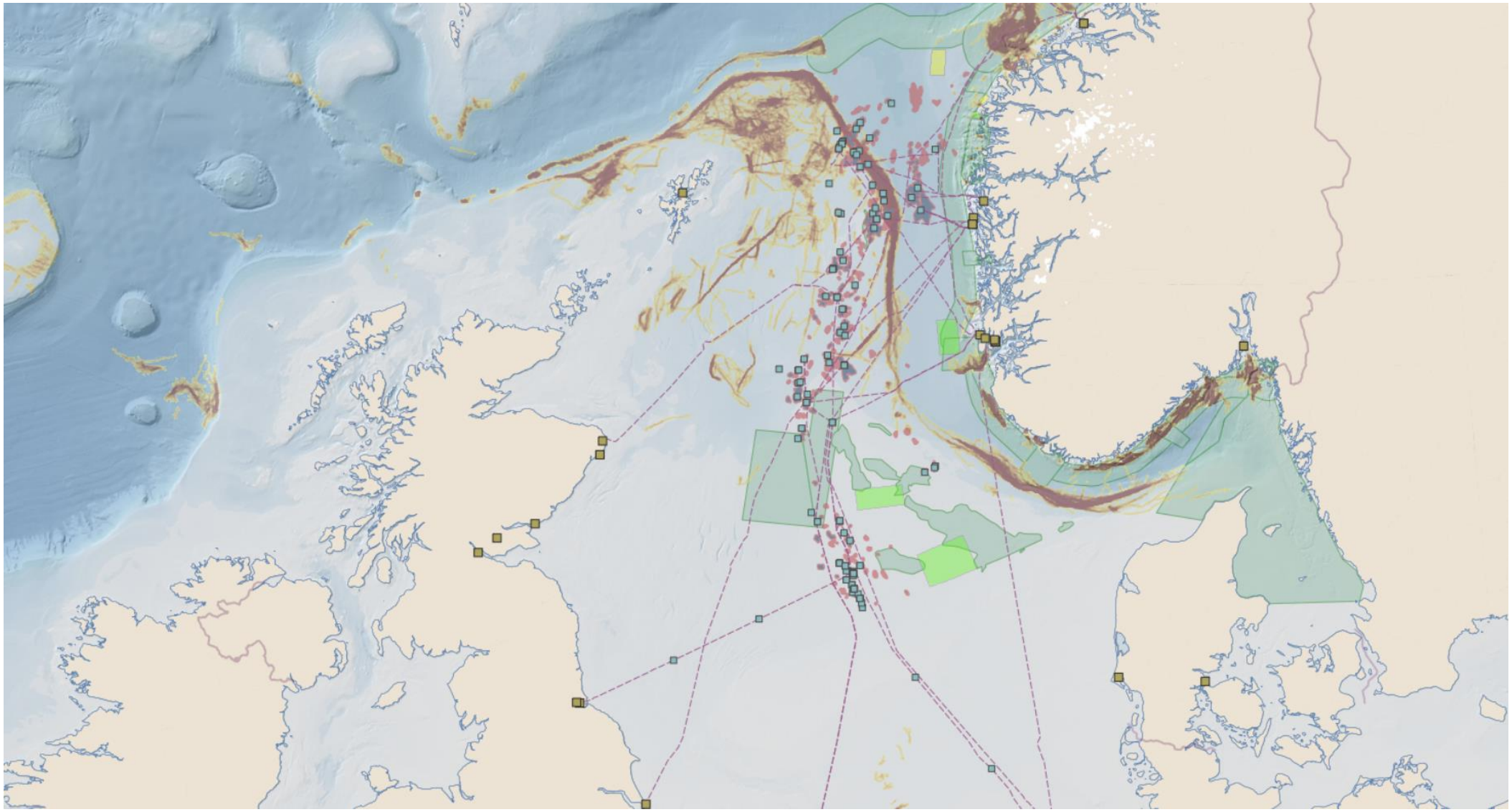
Commercial fishing + Valuable marine areas + Base map



Petroleum activity + Commercial fishing + Valuable marine areas + Base map



Offshore wind farm assessments + Petroleum activities + Commercial fishing + Valuable marine areas + Base map



Marine Spatial Management Tool

Examples of making use of other countries geospatial services

It’s relatively easy to make use of other countries geospatial services if the services are discoverable, well documented (metadata), and some effort has been made in standardization and harmonization

Still there remain some challenges/work to be done within supported attributes, associated data, cartographic rules for unified presentations, etc.

Re-use of national geospatial services in an international setting

Standard OGC services ensures easy access and re-use of geospatial information

On-line (direct) use of geospatial data and services from each countries governmental agencies, ensures utilization of authoritative data

Cartographic challenges for further improvements to achieve unified presentations within common thematics, seamless across borders

Example: Ice frequencies

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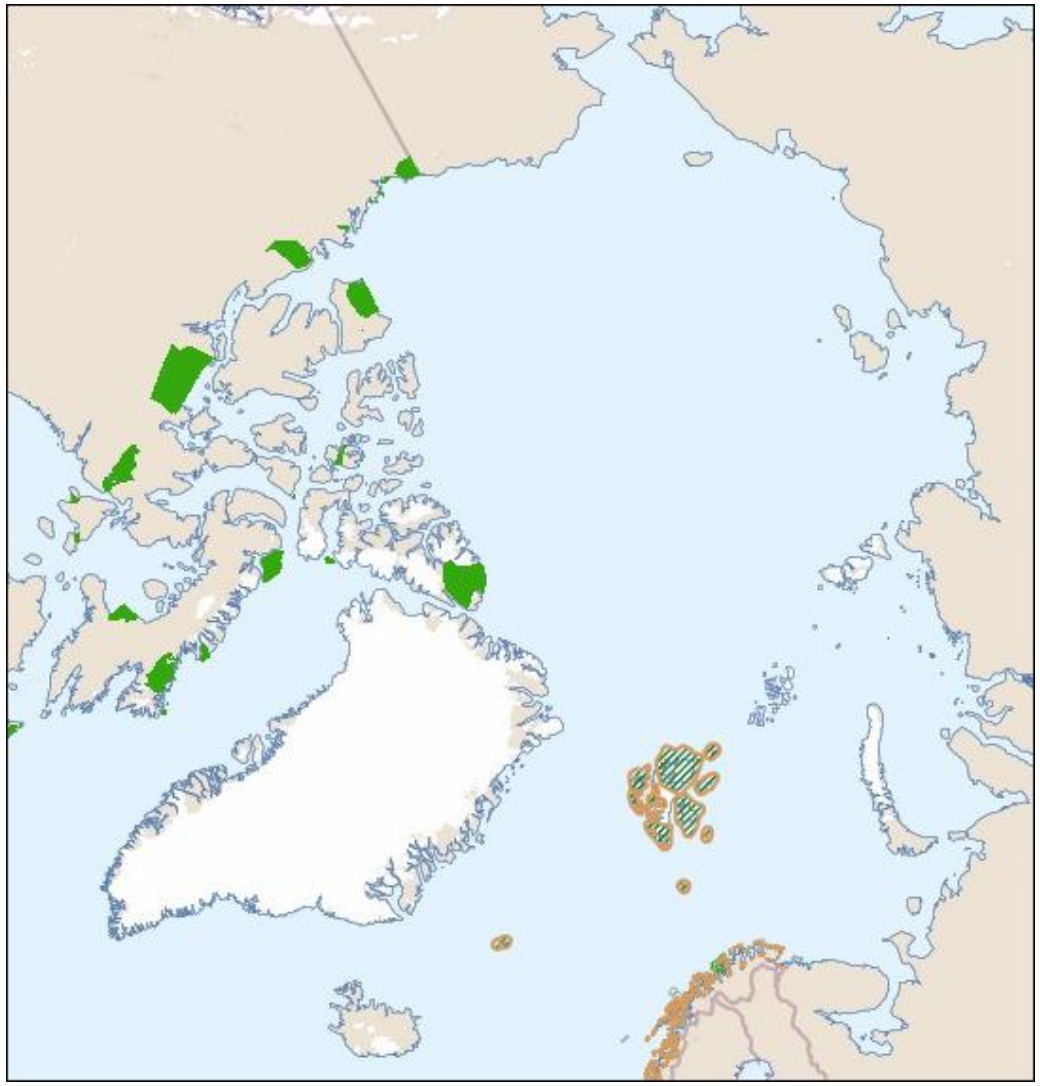
Re-use of national geospatial services in an international setting



Example: Marine protected areas

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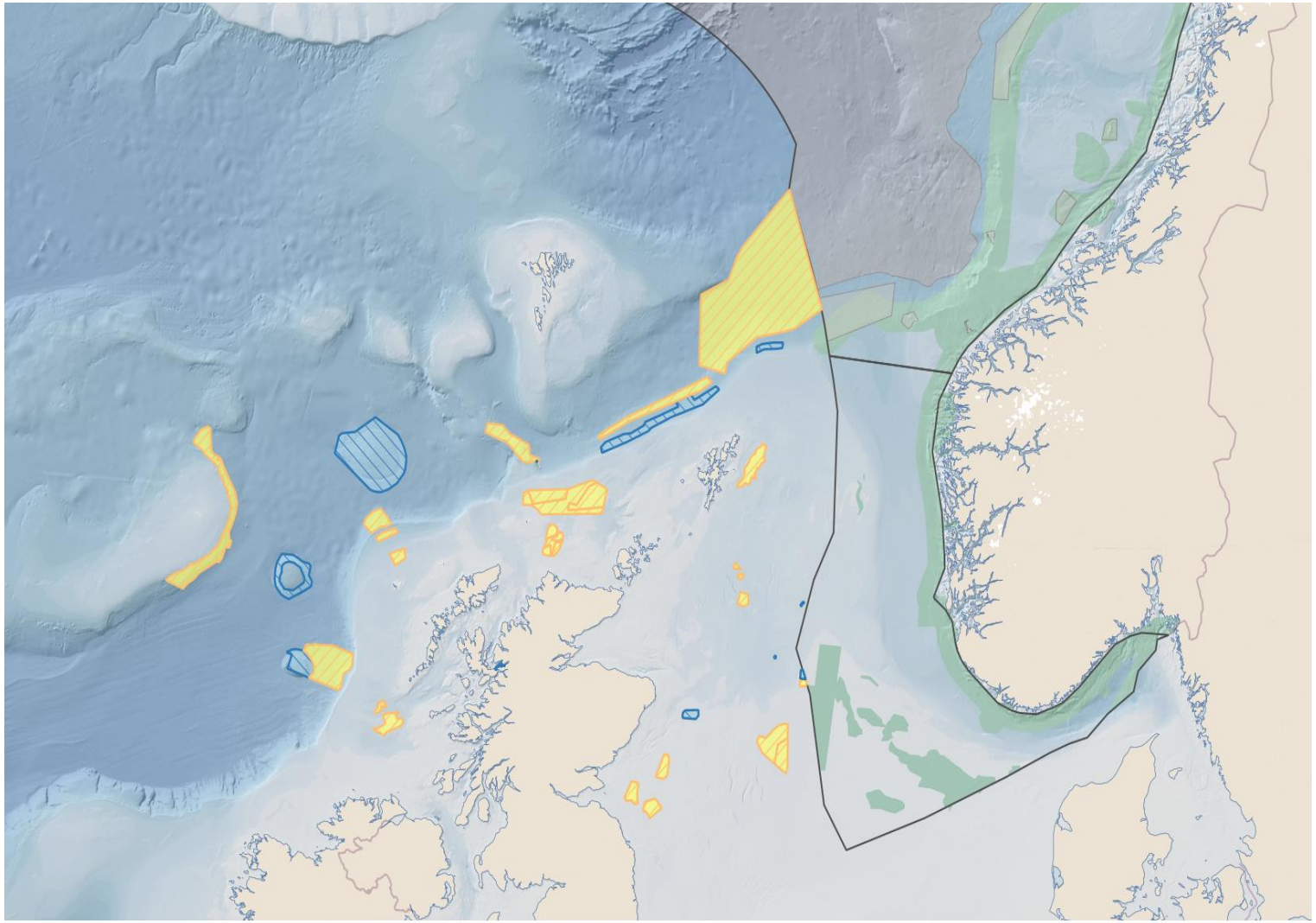
Re-use of national geospatial services in an international setting



Examples from assembling marine regulations in UK and Norway

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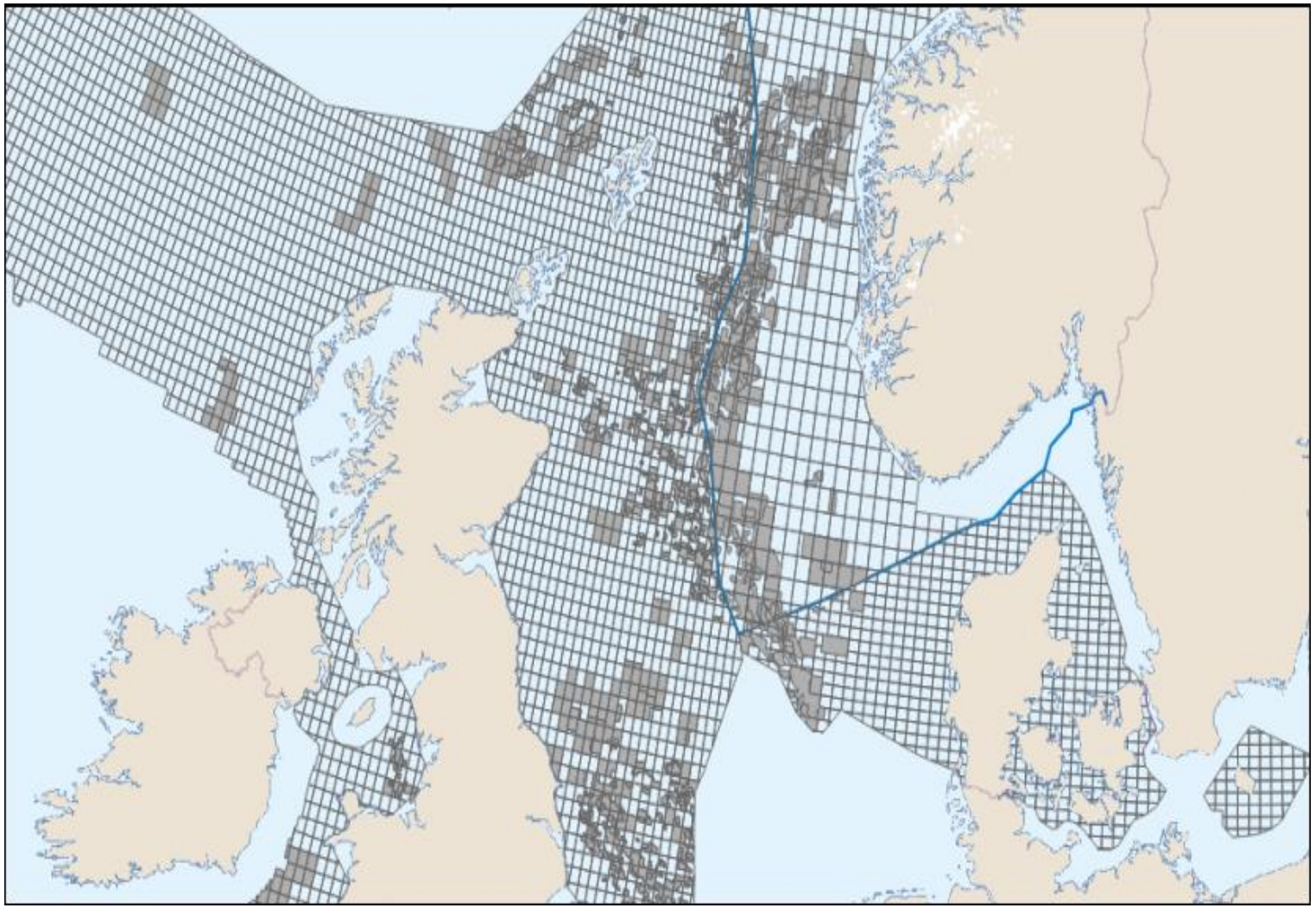
Re-use of national geospatial services in an international setting



Assembling the licencing system in the North Sea continental shelf through national geospatial datasets (Norway, UK, Denmark)

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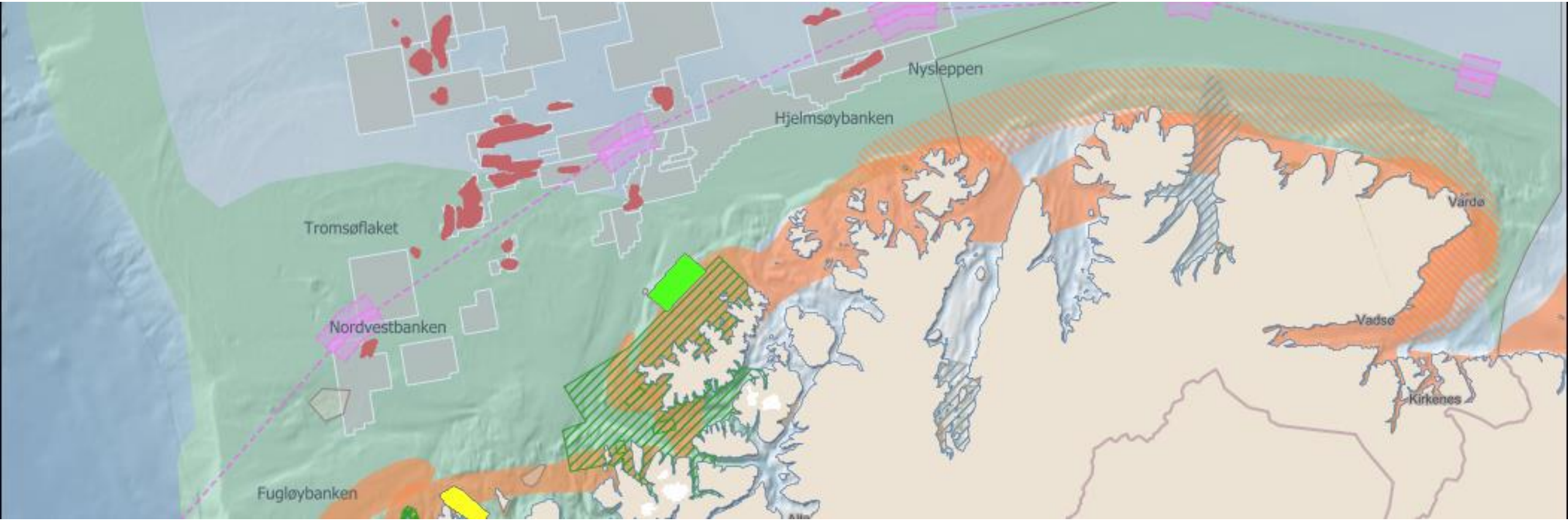
Thank you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