



**26 th Baltic Sea Hydrographic Commission Conference
21-23 September 2021 – VTC**

D1.1 Information about the NHC strategic work

**Report from NHC Strategic meeting
The future role of the Nordic Hydrographic Offices**

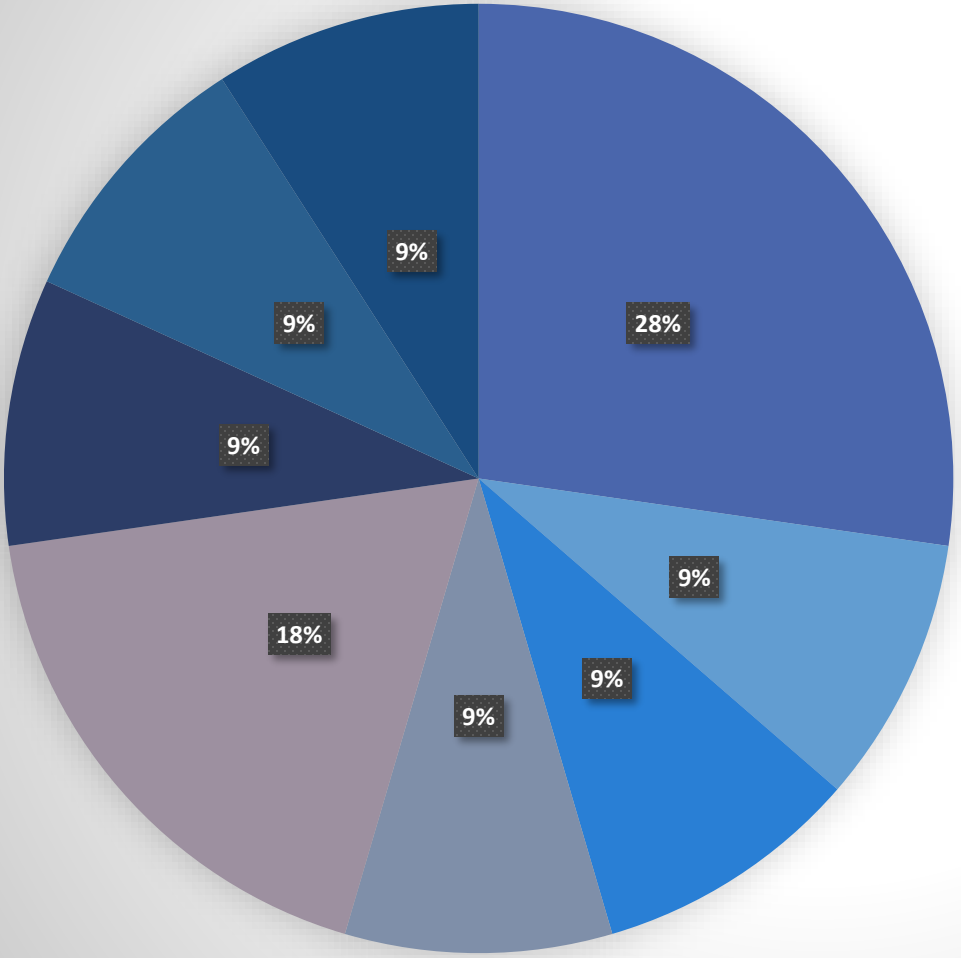




Shipping/Ships/Transportation

The 3 most important initiatives developments.

In a 2025/30 perspective, what will be the 3 most important initiatives/developments in Shipping/Ships/Transportation? E.g. Autonomous vessels, Drones, Automatic watch keeping etc.



- Autonomous vessels
- Legislation, rules and regulations
- Automatic sea chart update
- Global changes will lead to more ship traffic in the Greenlandic Waters
- Global changes will lead to more scientific presence and exploitation in the Arctic
- Implementation of S-100 series
- Development of automatic anti collision system to ships
- More enviromental correct paint
- Global changes will lead to more tourists in Greenland (sailing ships, kayaks etc.)

Respondents:
- 9 from Denmark
- 2 from Norway

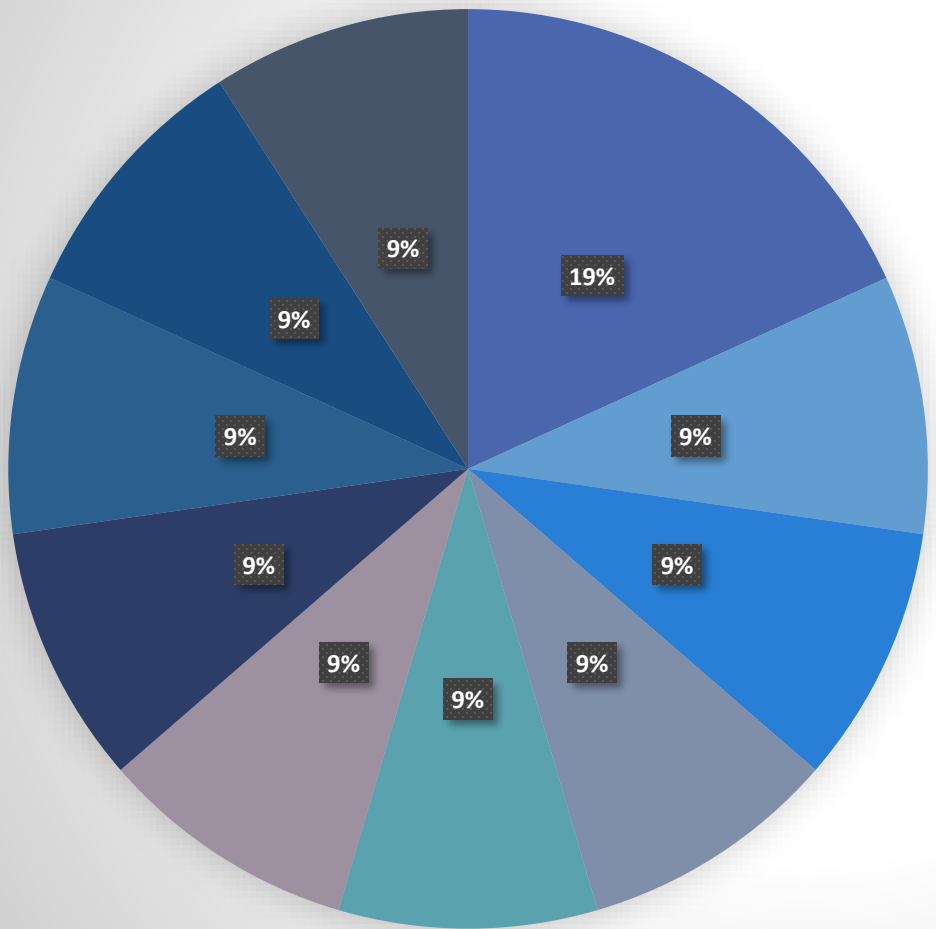




Shipping/Ships/Transportation

The 3 most important demands/requirements

Question: Taken the above answers into consideration what will be the 3 most important demands/requirements? E.g. in relation to marine related data, products, services and hydrography.



- Information sharing
- Cost efficiency, the market will push the suppliers
- Where will you get your employees of tomorrow from?
- Faster surveying
- Faster sea map production
- Accuracy in the data the autonomous systems are using
- Allocating national funds
- Full coverage of updated charts covering Greenland
- How will rules and regulations make impact on the product and services needed
- Develop high end training facilities

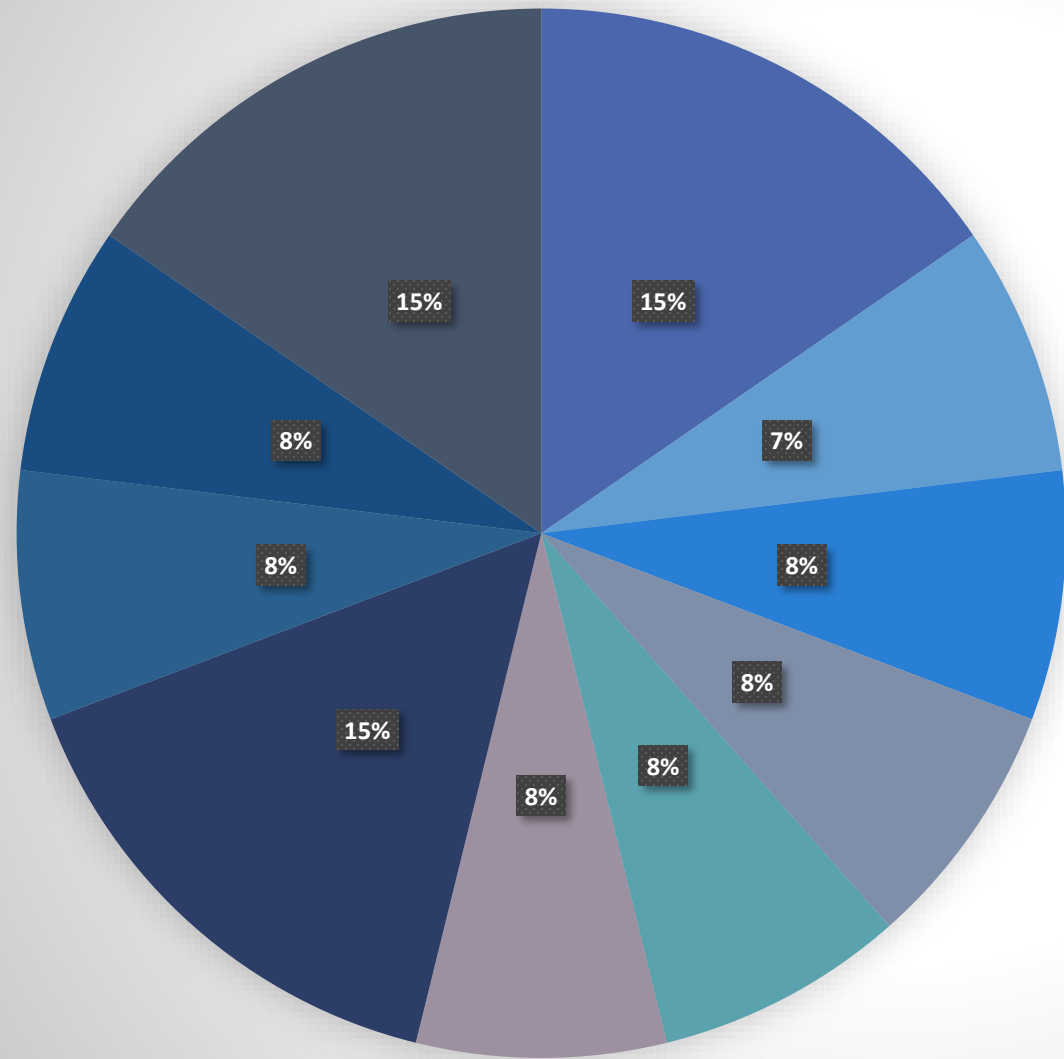




Navigation/ safety at sea /legislation

The 3 most important initiatives/developments in relation to navigation

Question: What do you think will be the 3 most important initiatives/developments in relation to Navigation 2025/30? E.g. Autonomous vessels, Drones, Automatic watch keeping etc. Leisure marked, S-100, Pilotage, New routes, Marine Spatial Planning.



- Dynamic data
- Increased focus of sustainability
- Leisure marked, pilotage and automatic watch keeping
- Focus on optimization voyage and routing planning
- Autonomous ships
- New routes in arctic waters Pilotage
- Enhanced/improved polar code
- Improved weather and ice satellite analysis and prognosis easy accessible for ships at sea.
- Implementation of new survey methods
- S100

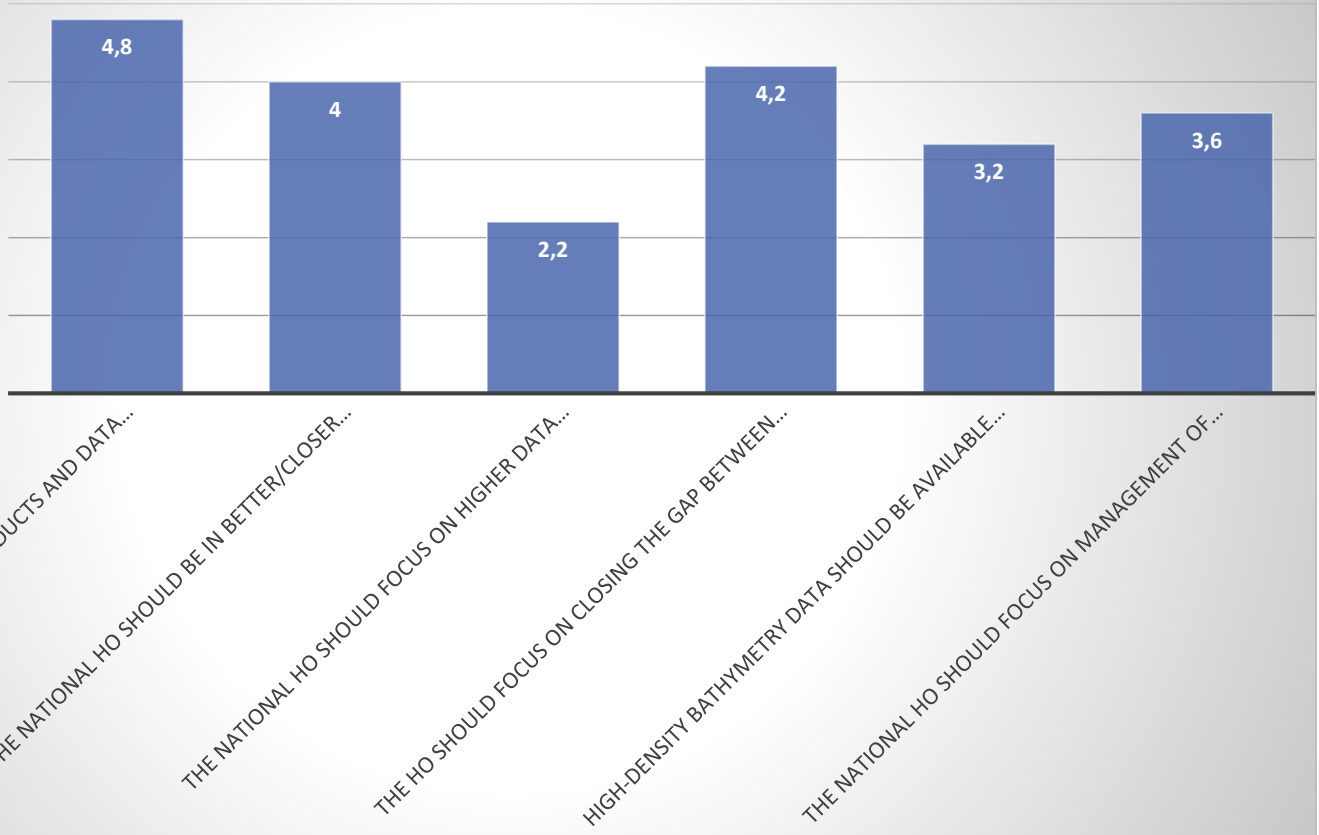




The Nordic HO

The Nordic HO has highlighted/identified 6 different topics, that seen from a forward looking perspective is expected to be important from a HO perspective. Please rate these topics and indicate if you think some important topics are missing?

Question: How important is the topic from 1 to 5, where 5 is the most important?



	<p>Question: Please describe your expectation to the topic listed to the left.</p>
<p>Update services of hydrographic products and data should be regular and dynamic</p>	<ul style="list-style-type: none"> Free data The sea map production in Greenland is slow. The lack of surveyed sea maps in Greenland is critical. Full coverage of updated charts covering Greenland should be available in a foreseeable future.
<p>The national HO should be in better/closer contact/discussion with their stakeholders/users</p>	<ul style="list-style-type: none"> Good contact but less action. In order to be able to provide what's needed the contact is important. If the products are sufficient there is no need
<p>The national HO should focus on higher data security for their products and data.</p>	<ul style="list-style-type: none"> More data needed. Data security is not considered an issue. Both data security and IT security is important
<p>The HO should focus on closing the gap between current products and future requirements/products</p>	<ul style="list-style-type: none"> We need to prepare for the future. More data needed. If surveying and the sea map production in Greenland is continued in the same speed as today it is estimated that Greenland will be fully surveyed in 100 years from now. Full coverage of updated charts covering Greenland. How do the HO know future requirements?
<p>High-density bathymetry data should be available for the end user.</p>	<ul style="list-style-type: none"> For leisure boats this is not important. More data needed. For navigation purpose the 5 by 5 meters gridded background data is sufficient. For military or scientific purpose high resolution data is essential. Should have a very high priority.
<p>The national HO should focus on management of information/data, systems and processes</p>	<ul style="list-style-type: none"> User friendliness, meet expectations. Organized information sharing is considered very important to all stakeholders and end-users. More and more information will be available for the navigators and information overload might only be avoided if the future navigation systems have build-in data management.



The HO user approach:

- Alignment between the results of both Danish and Norwegian questionnaires/studies
- Many different users with different user requirements
- Different users may require different data
- The questionnaire indicates that the focus areas established by the Strategic work shop are valid

At the NHC EO3 meeting November 2020 NHC MS recognized the need to formalize the work with relation to defining the different user groups and the user needs with relations to hydrographic data from a Nordic Hydrographic Offices perspective.

It was agreed that Denmark at the NHC 64 meeting should present a draft scope of a project team that should focus on the different user needs, in order for the NHC MS to discuss the need for establishing a PT and if positive feedback from the NHC MS the scope of the PT.





The Nordic HO has highlighted/identified 6 different topics, that seen from a forward looking perspective is expected to be important from a HO perspective

The Nordic HO should focus on:

Update services – regular, dynamic e.g.:

- Service levels - define how resources are prioritised
- Different datasets will require different update services
- Define update characteristics for different datasets

Better discussions with stakeholders/users e.g.

- How we can encourage better stakeholder/user engagement?
 - User group meetings
 - Analysis/Questionnaires
 - Meetings with the maritime/marine stakeholders
 - Navigational Conferences
 - Use of social media e.g. Facebook
- Do we fully understand the user demands of different segments? (Blue Economy, Sustainability/Environmental)

Higher data security

- Make sure that no one can steal your data
- Make sure no one can change your data (integrity)
- Data availability
- Identify the responsibility of the HO?

Closing the gap between current products and future requirements

- How to ensure products are in line with user needs
- How to determine future requirements
- Ensure data is available in standard formats
- HO to sometimes inform users of possibilities to help them imagine the future
- Close dialog needed with industry
- To participate in projects with external stakeholders

High density data bathymetry

- Cooperation with other agencies about surveying
- Use of back scatter and water column – information
- S-102 to be included if possible (standardised format)
- High density data bathymetry is often restricted, we have to find ways to make data available for the users, e.g. for a smaller area

Management of information/data, systems and processes

- How do we establish a more agile organisation
 - Data management
 - Distributions models
 - Production processes
- Establish HO as the national data manager for marine data



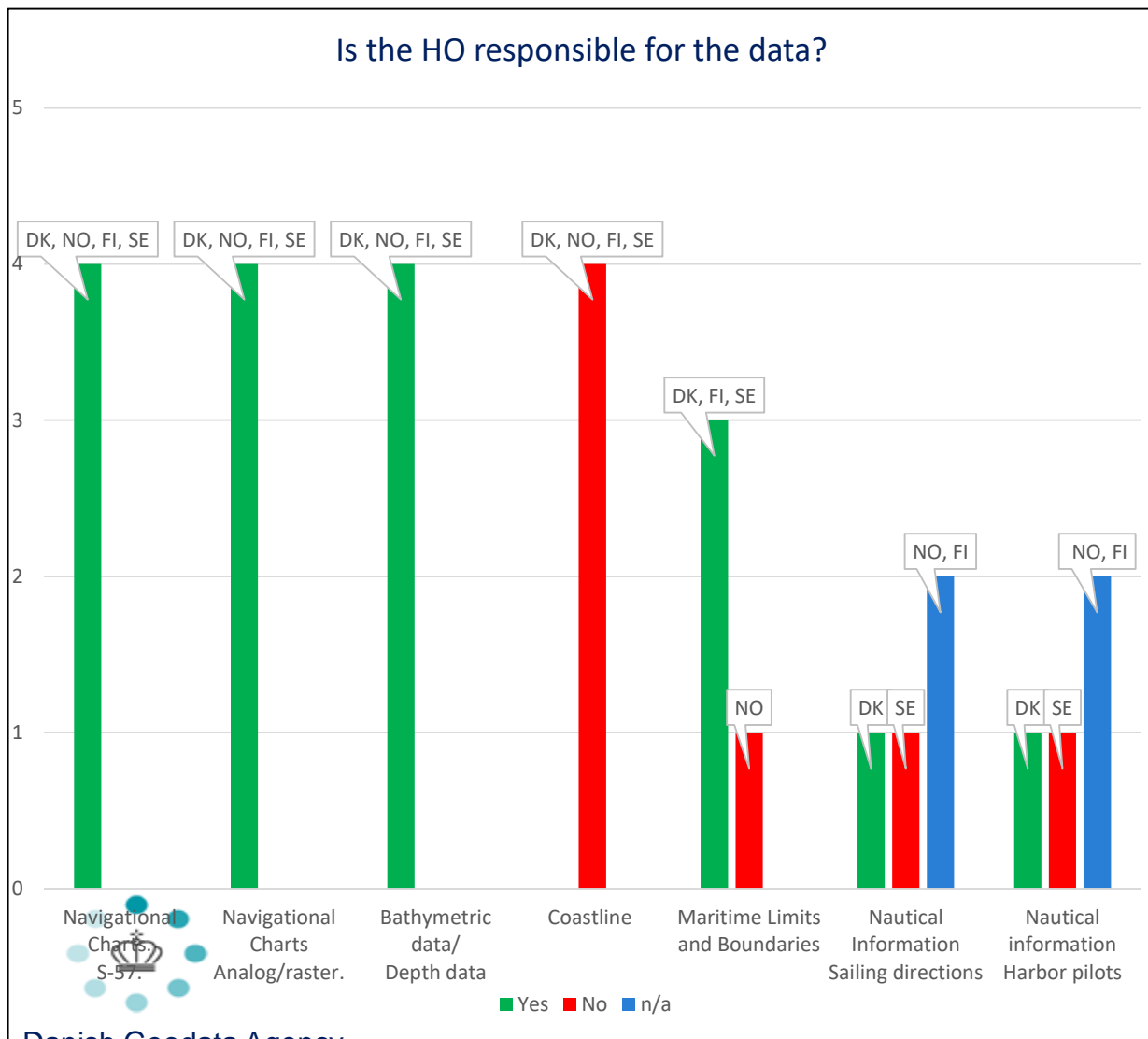


NHC Hydrographic Datasets questionnaire

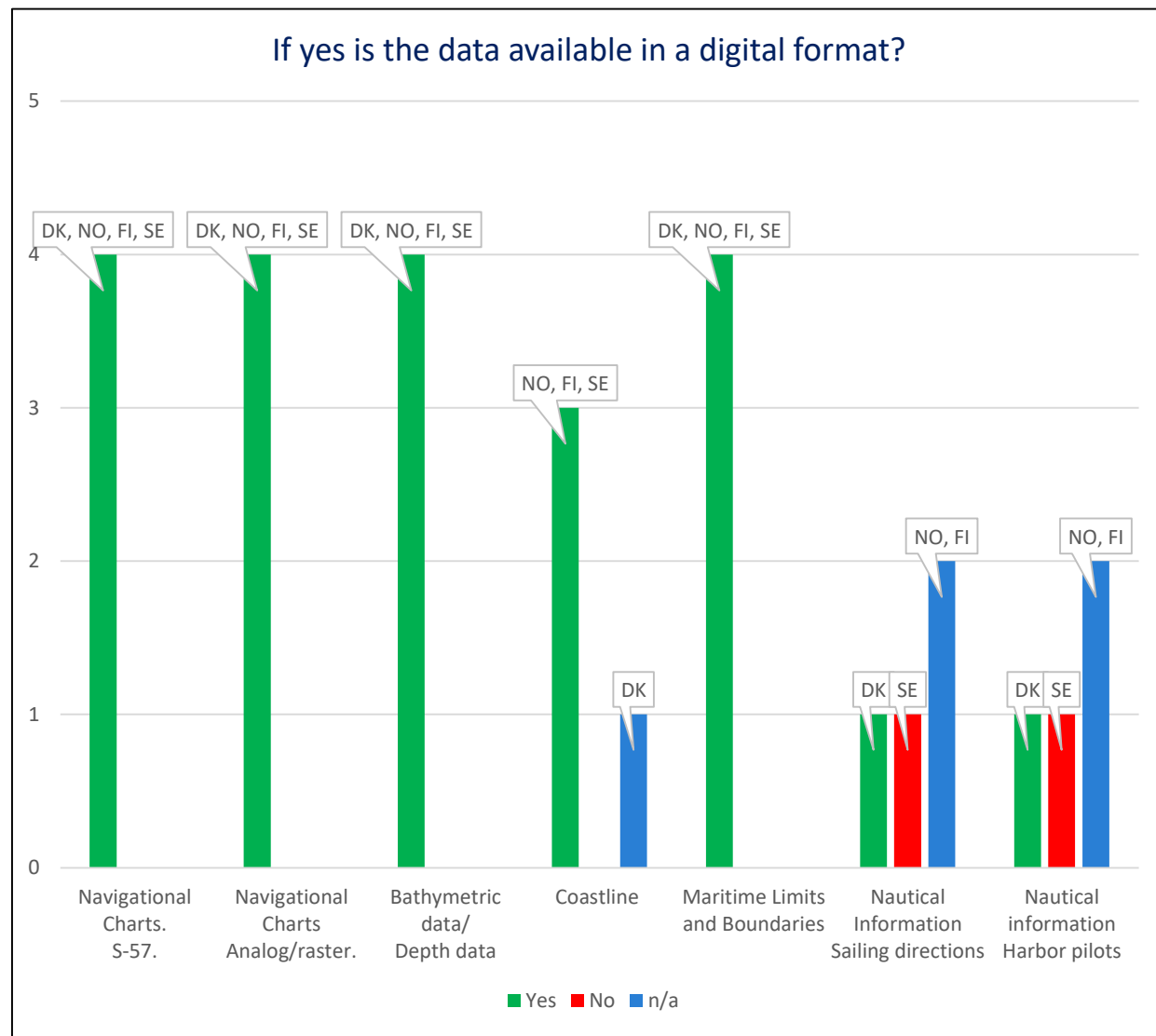
Questions related to a general Nordic HO approach (Hydrographic Datasets).

Question: Is the HO responsible for the data? If yes is the data available in a digital format?

Is the HO responsible for the data?



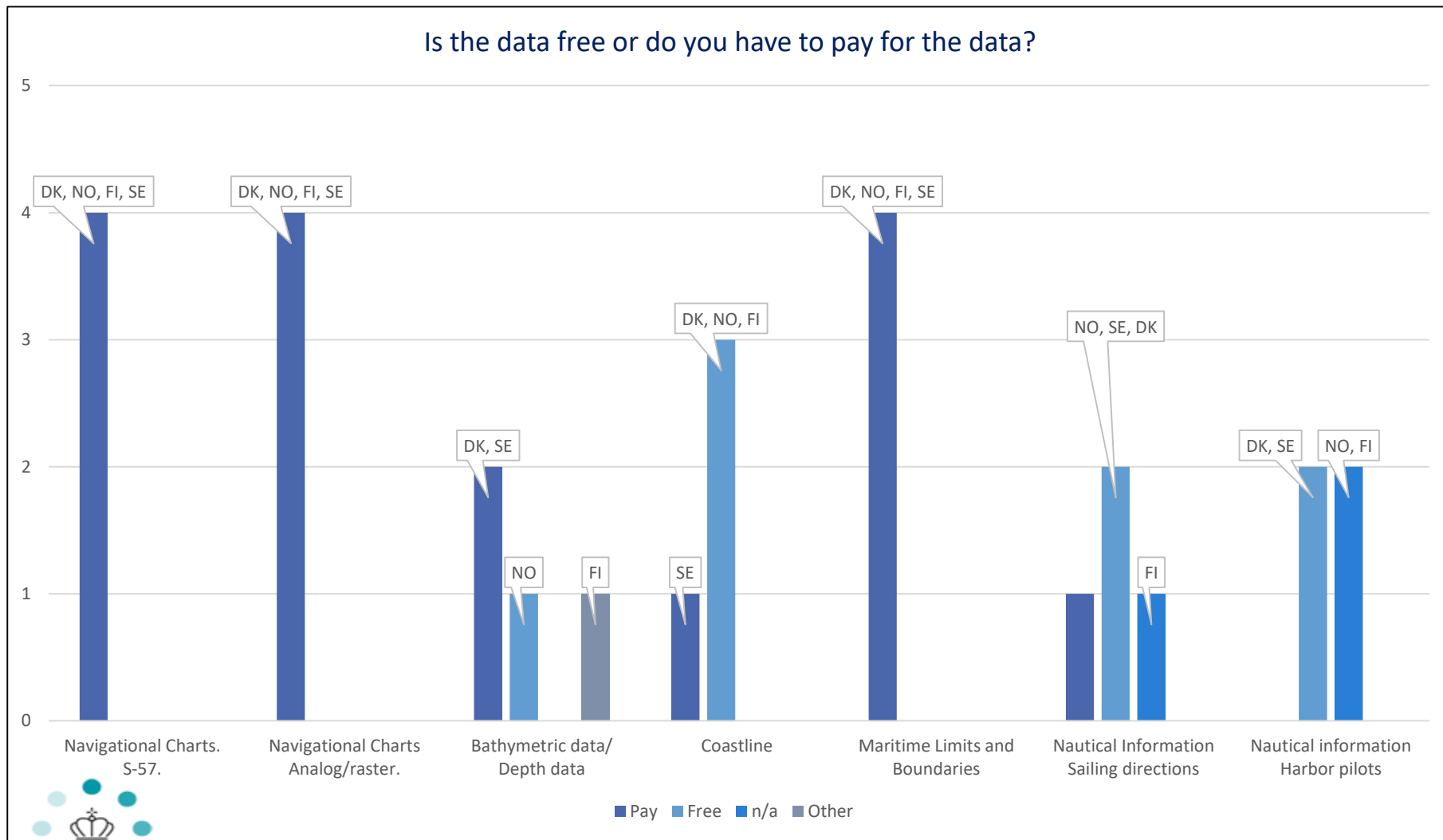
If yes is the data available in a digital format?





NHC Hydrographic Datasets questionnaire

Question: Is the data free or do you have to pay for the data? Please describe the licensing model?



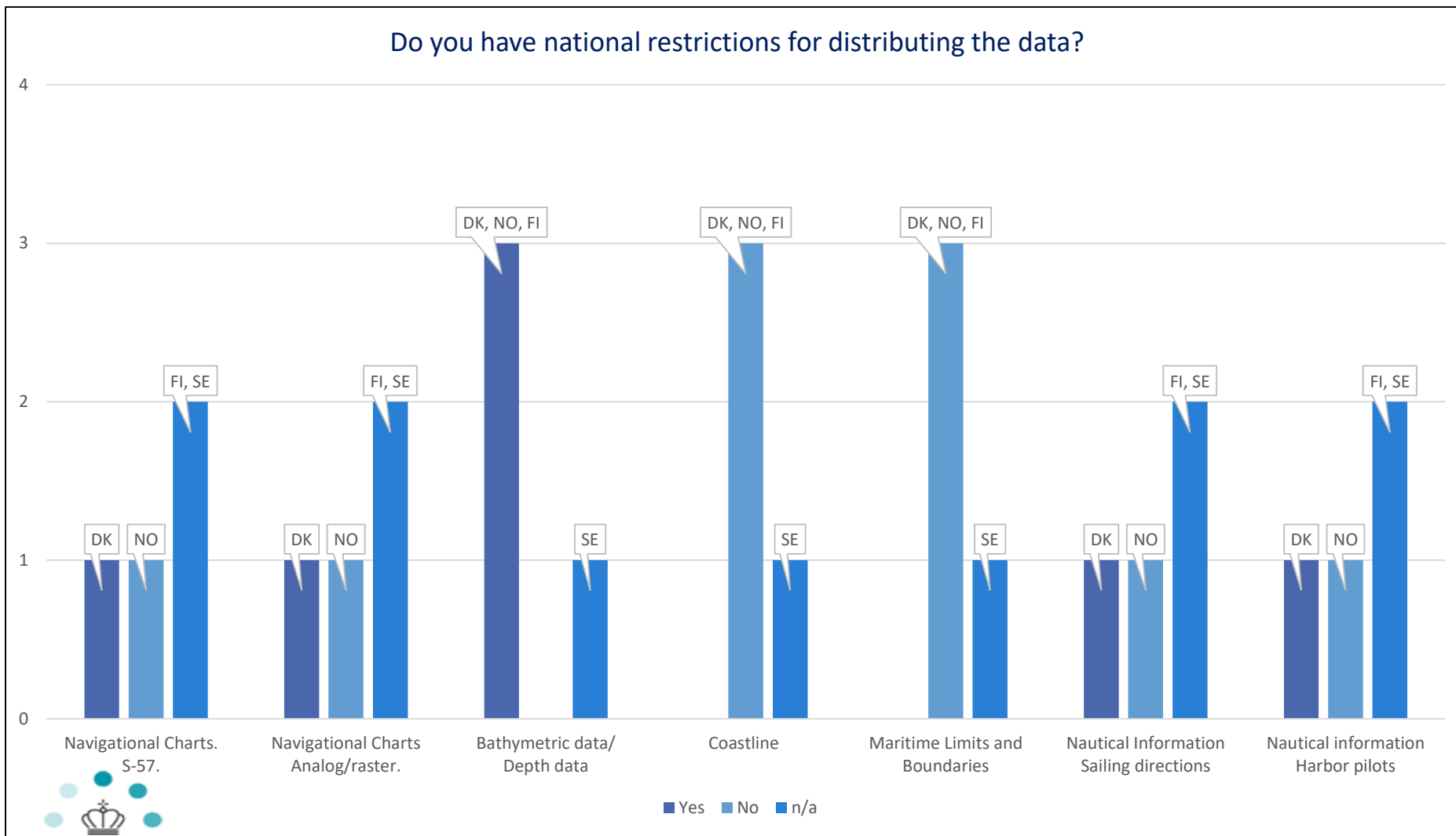
Examples on licensing models.

- Marketing fee model
- ENC sold through Primar/IC-ENC
- S-57 data sold to private companies is subject to a sales based royalty as well as a fixed subscription fee



NHC Hydrographic Datasets questionnaire

Question: Do you have national restrictions for distributing the data? If yes please describe.



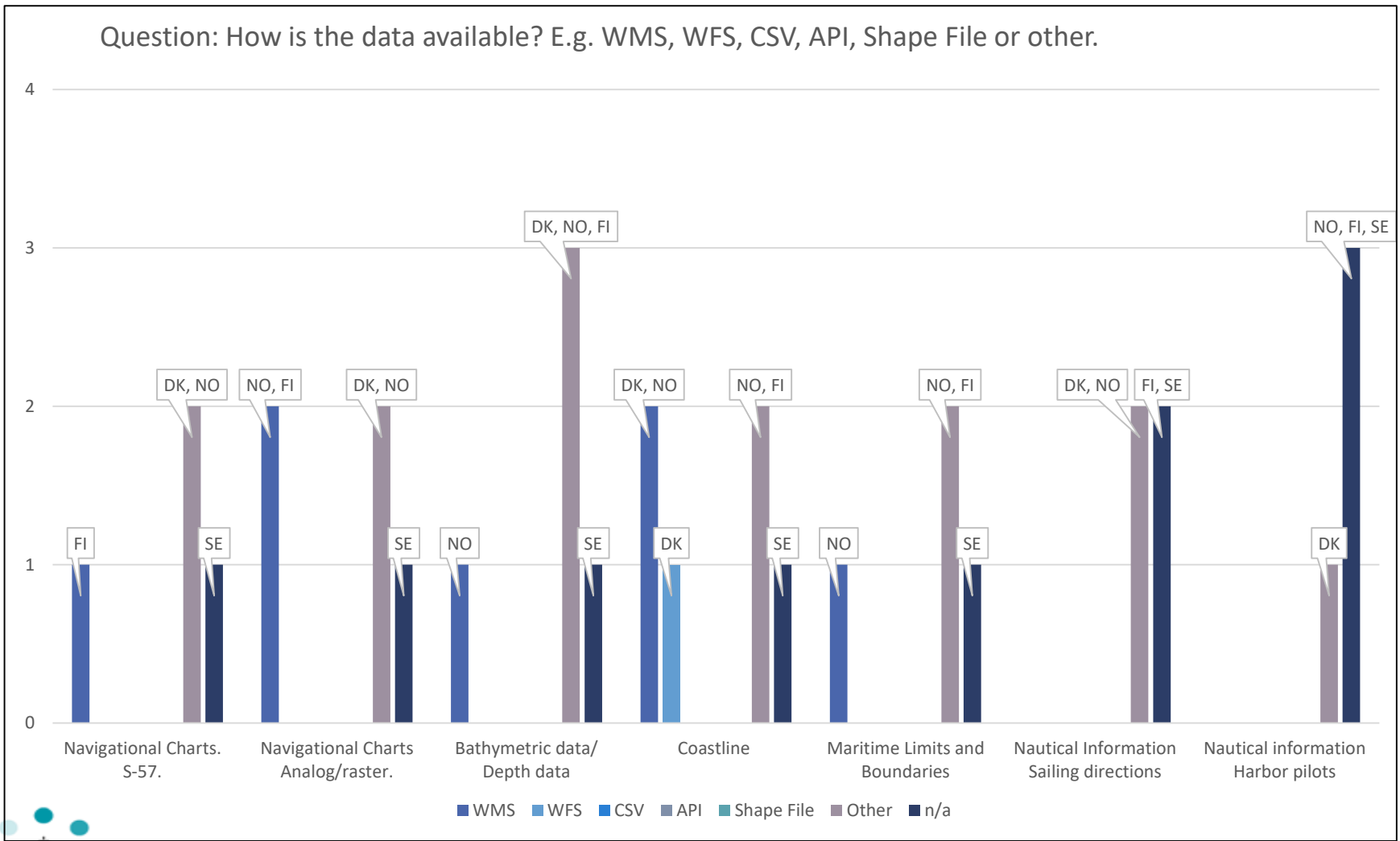
Do you have national restrictions for distributing the data?

If yes please describe.

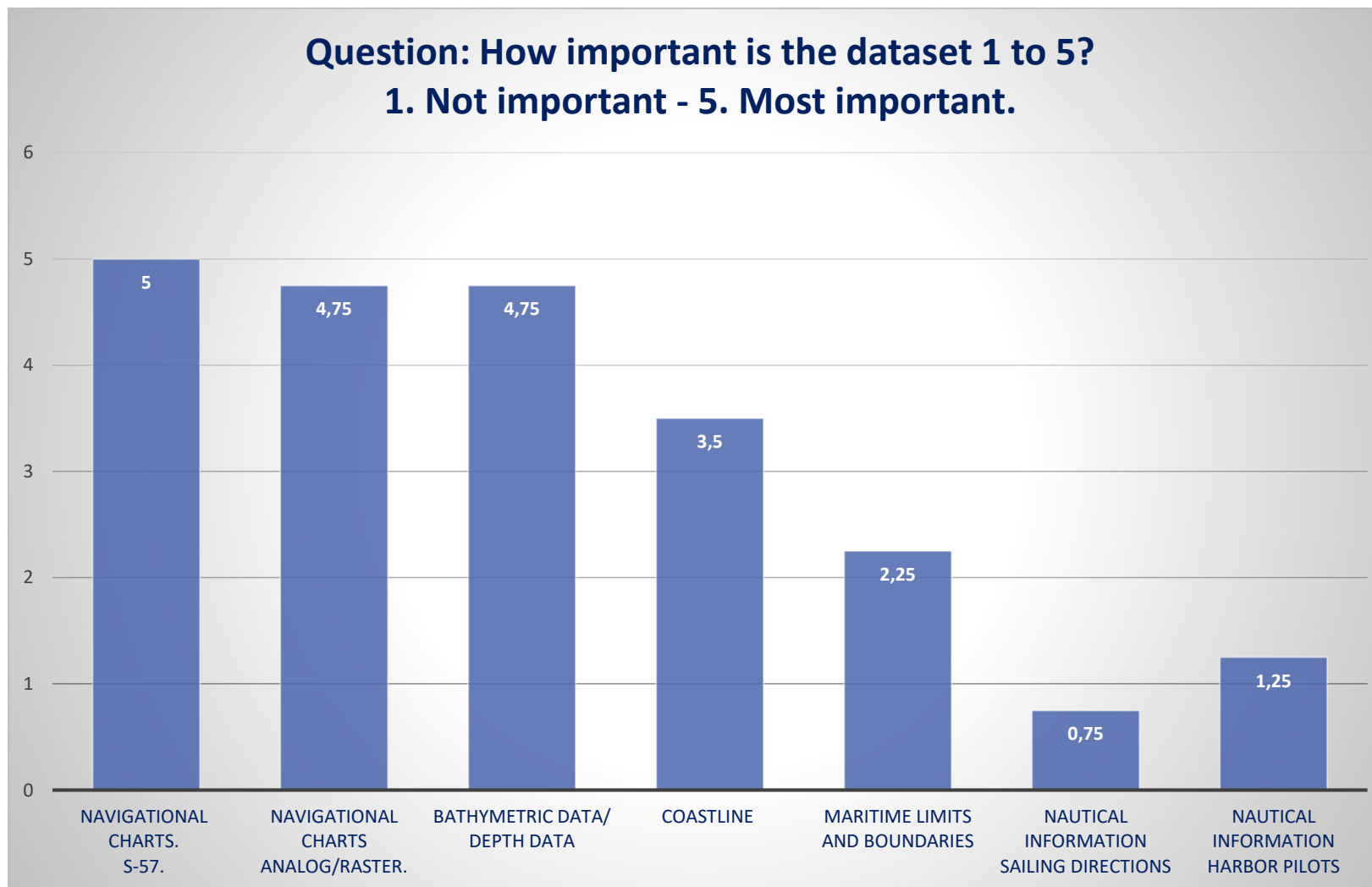
- Licensing agreement based
- Distribution must be approved by the Royal Danish Navy
- Distribution must be approved by the Norwegian Defense (only bathymetric data with a higher resolution of 50m*50m)
- Restricted in Finnish Territorial waters



NHC Hydrographic Datasets questionnaire

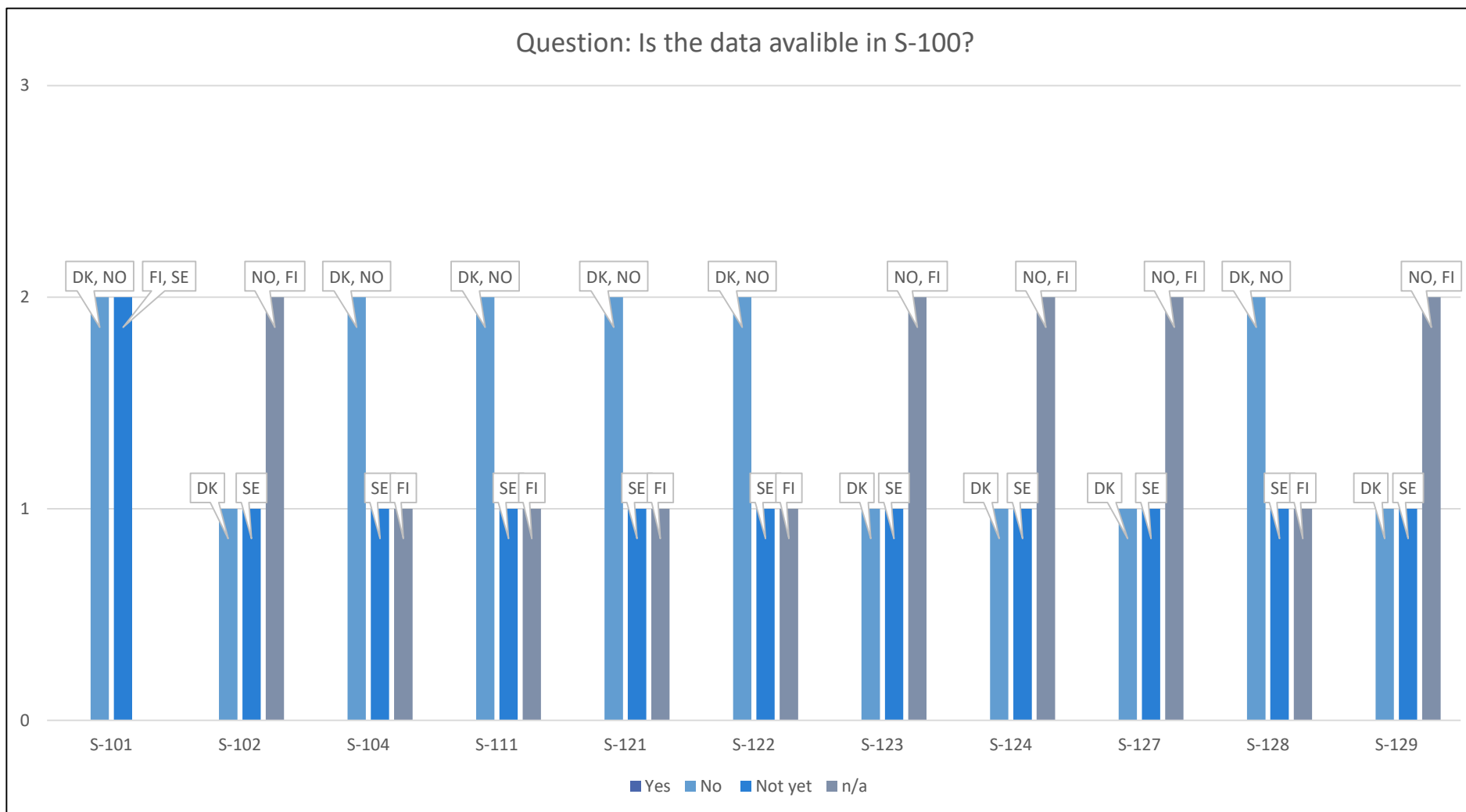


- Examples on "other".**
- S-57 files
 - .000 files downloaded on FTP
 - PDF
 - FTP
 - WCS
 - ENH
 - NED
 - TIFF
 - XYZ
 - SOSI
 - Physical books
 - File download service





Questions related to S-100 datasets





Who is the national data owner?

	DK	NO	FI	SE
S-101	DGA	Kartverket	Traficom	SMA
S-102	DGA	Kartverket	Traficom	SMA
S-104	DMI	Kartverket	FMI	SMA/SMHI
S-111	DMI	Metrologisk institutt	FMI	SMA/SMHI
S-121	DGA	Kartverket, LD	Traficom	SMA
S-122	DGA	Not allocated to one owner	FEI	SMA
S-123	DMA	Kystverket	FTIA	SMA
S-124	DMA	Kystverket	TMFG	SMA
S-127	DMA	Kystverket	TMFG	SMA
S-128	DGA	Kystverket	Traficom	SMA
S-129	?	Kystverket	?	SMA/Industry





S-100:

- The questionnaire about hydrographic datasets indicates that there are:
 - Different approaches to S-100 datasets between the NHC MS
 - Different S-100 data owners in the Nordic countries
 - Different approaches to the need for authoritative data sets among the Nordic countries
 - Different approaches to “hydrographic” datasets
- The S-100 Implementation Strategy will include many different topics from production to distribution

Recommendations:

- NHC MS to discuss the need and how to establish a uniform approach to S-100 and the S-100 implementation from a Nordic perspective
- To establish a list of S-100 contact persons
- NHC to discuss the needs and how to divide the users into different segments e.g.
 - Professional Shipping,
 - Leisure market,
 - Sustainable development in the marine environment
 - National security and emergency preparedness

NHC Action.



To report status and developments under S-100 (under agenda item e-Navigation).
Denmark to arrange a Workshop on NHC strategy in 2nd half 2021