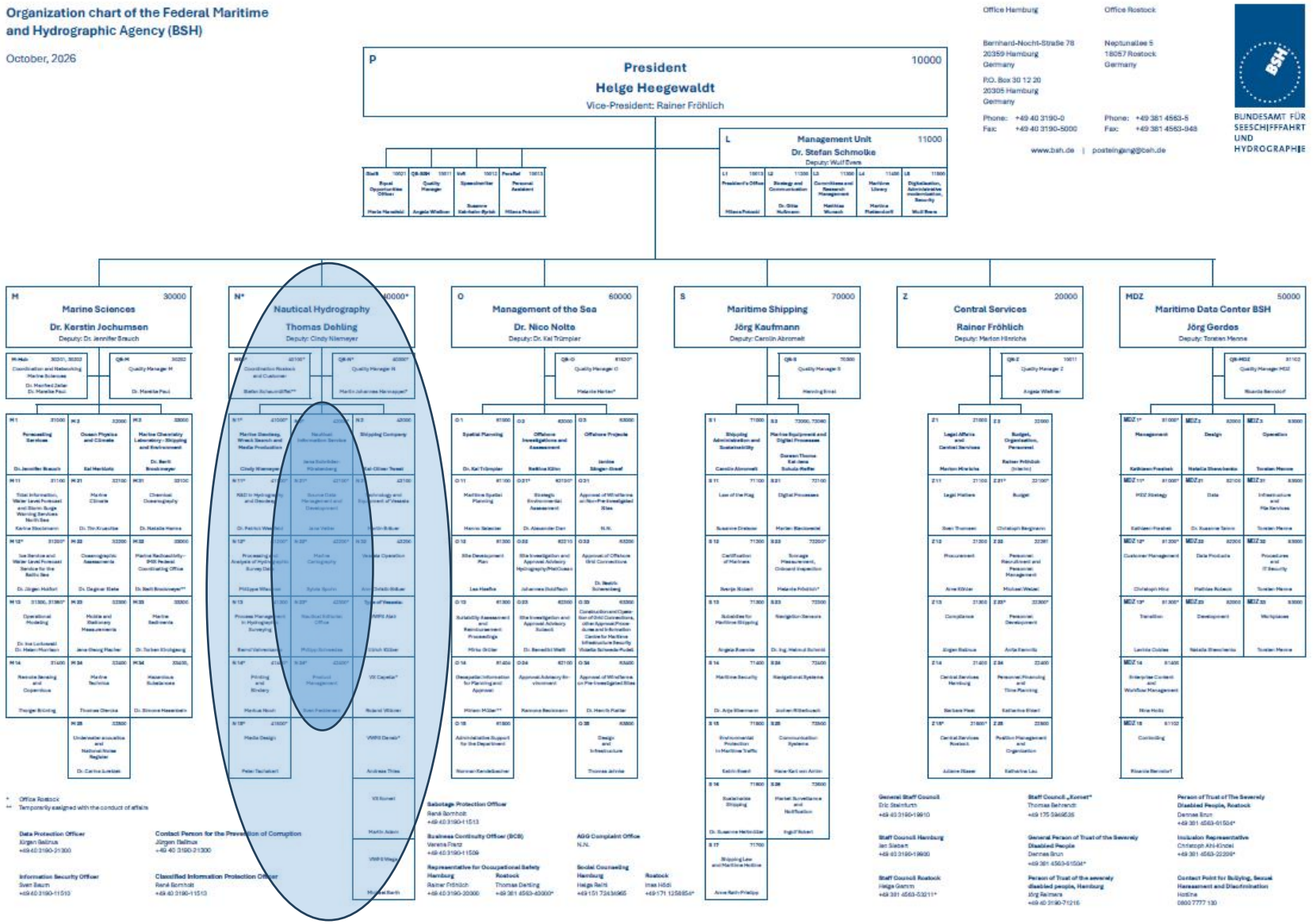
BSH S-100 implementation status

Federal Maritime and Hydrographic Agency, Germany

BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

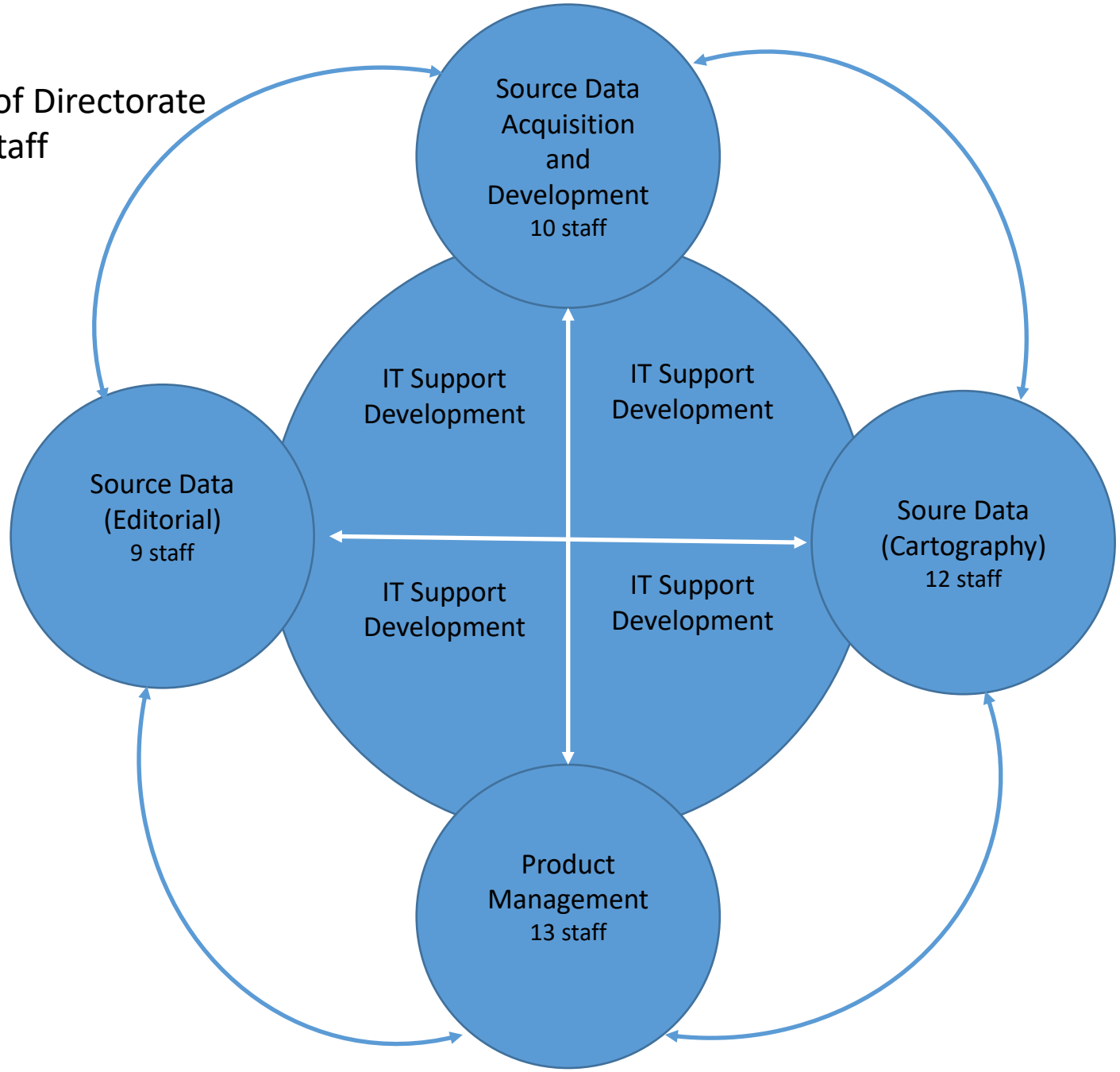


BSH Organigram



Tasks and Personell Directorate N2 (end of 2026)

Head of Directorate
+ 44 Staff



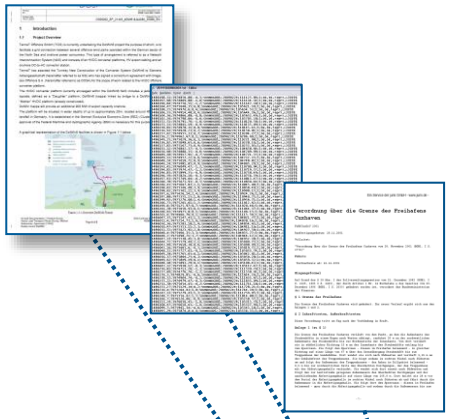
Directorate Nautical Information Service



The Main Thing is to Keep
The Main Thing The Main Thing.

- Stephen Covey

www.DreamThisDay.com



hydrodata@bsh.de

External Data Sources:

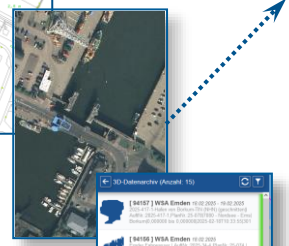
ELWIS

GeoPortal

BKG

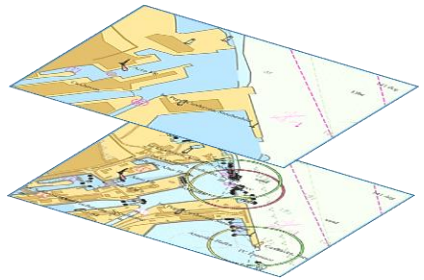






3D-DA

Source Data Acquisition and Development N21



Soure Data (Cartography) N22

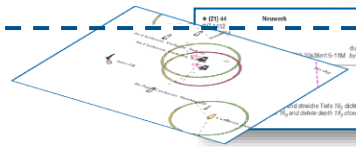
Source Data (Editorial) N23

Docuglobe

DGM Survey Database

Product Management N24

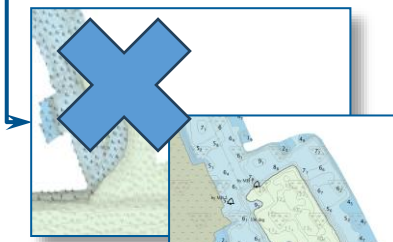




Paper chart



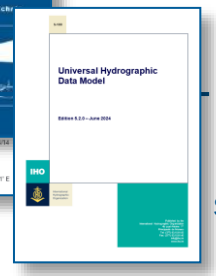
S-57 ENC



bENC



(HD) ENC

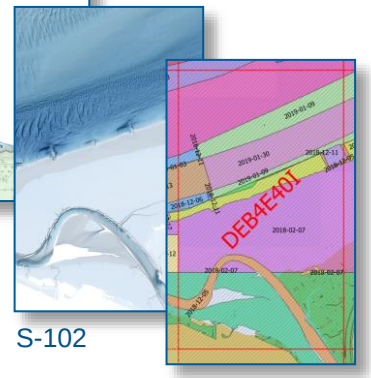


S-1XX

Distribution

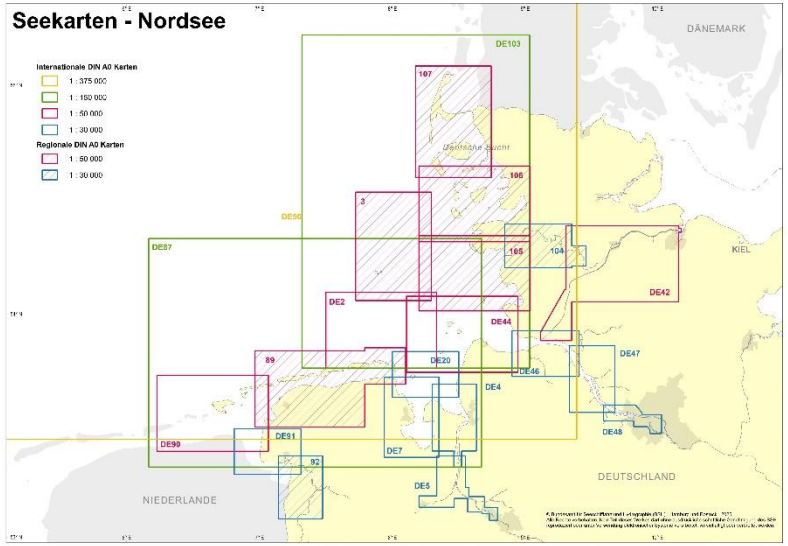
customer@bsh.de

- IC-ENC
- ftp
- druckauftrag@bsh.de

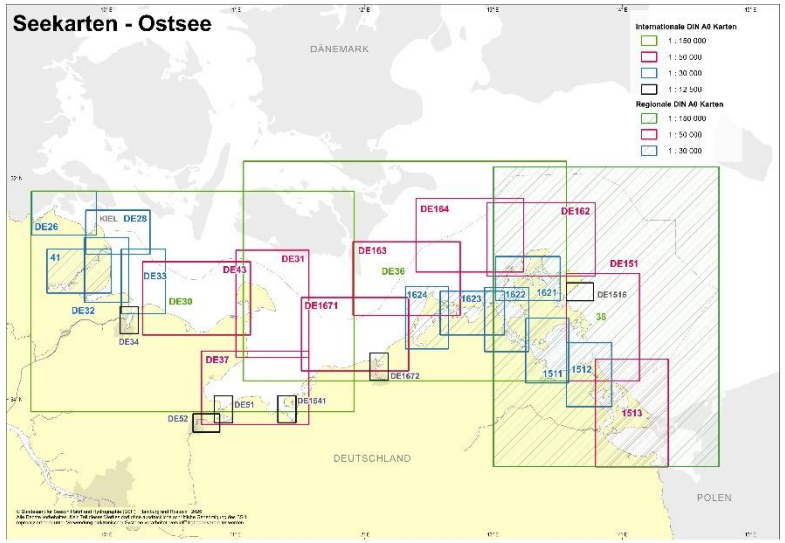


S-102

Reduction of paper charts (up to Q4/2027)



Completed



Up to Q4/2027

HPD

Preparation Steps and Timeline

S-101 Navigational Purposes	Maximum Display Scale	Optimum Display Scale	Minimum Display Scale	HPD Usage Band Ranges	S-57-ENC-CS	Paper Chart Scales
				Usage 1		
				HD-ENC		
Port I	2.000	4.000	8.000	2 – 11.999	4.000 (6 - Berthing)	3.000 6.000
Port II	4.000	8.000	22.000	12.000-21.999	8.000 (5 - Harbour)	12.500 20.000
Transit	11.000	22.000	90.000	12.500 – 49.999	22.000 (4 - Approach)	30.000 50.000
Overview I	45.000	90.000	180.000	50.000 – 149.999	90.000 (3 - Coastal) 180.000 (2 - General) 180.000 (3 - Coastal)	150.000 300.000 375.000
Overview II	90.000	180.000	1.500.000 (NULL)	150.000 – 2.000.000	350.000 (2- General 1.500.000 (1 - Overview)	500.000 1.750.000 2.000.000

HPD

Preparation S-101 Scale Bands (completed)

Source Data Conversion (up to Q2/2027)

- Test and adjustment of S-57->S-101->S-57 mapping files
- Test and adjustment of references between different scale bands
- Conducting source data preparation
- Start of dual fuel production based on converted data

Database Conversion (commencing end of Q4/2027)

- Preparing source data (all items verified)
- Conduct conversion
- Validation of conversion results (kitchen work)
- Verification of converted HPD source data

HPD

Preparation Steps and Timeline

Overview grid is basis

Cell multiplication

- 1 × Overview1 = 25 × Overview2
- 1 × Overview2 = 16 × Transit
- 1 × Transit = 4 × Port



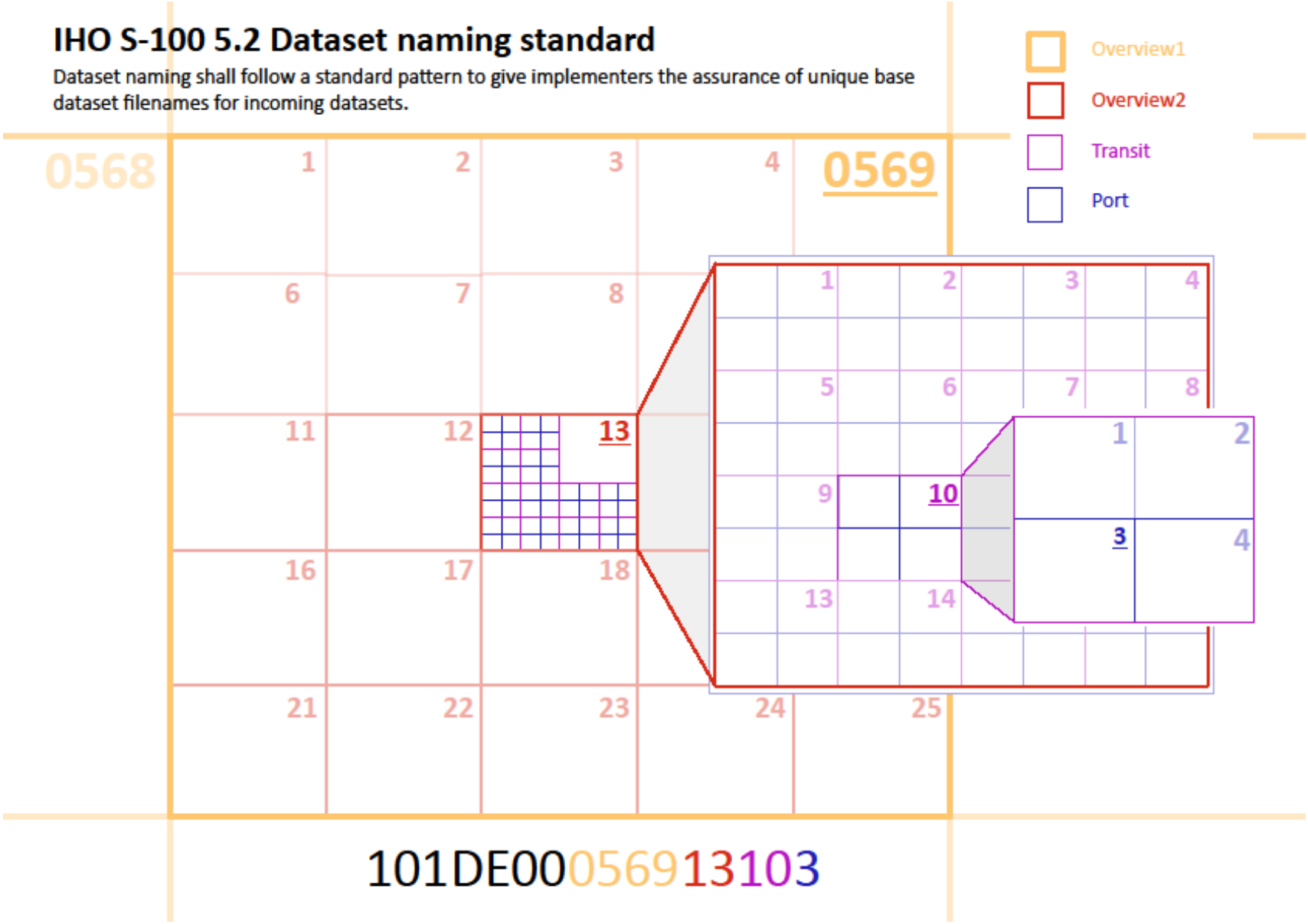
Uniform Product Grid

Overview
Transit
Port

Scales
45.000-180.000 (90.000)
90.000-1.500.000 (180.000)

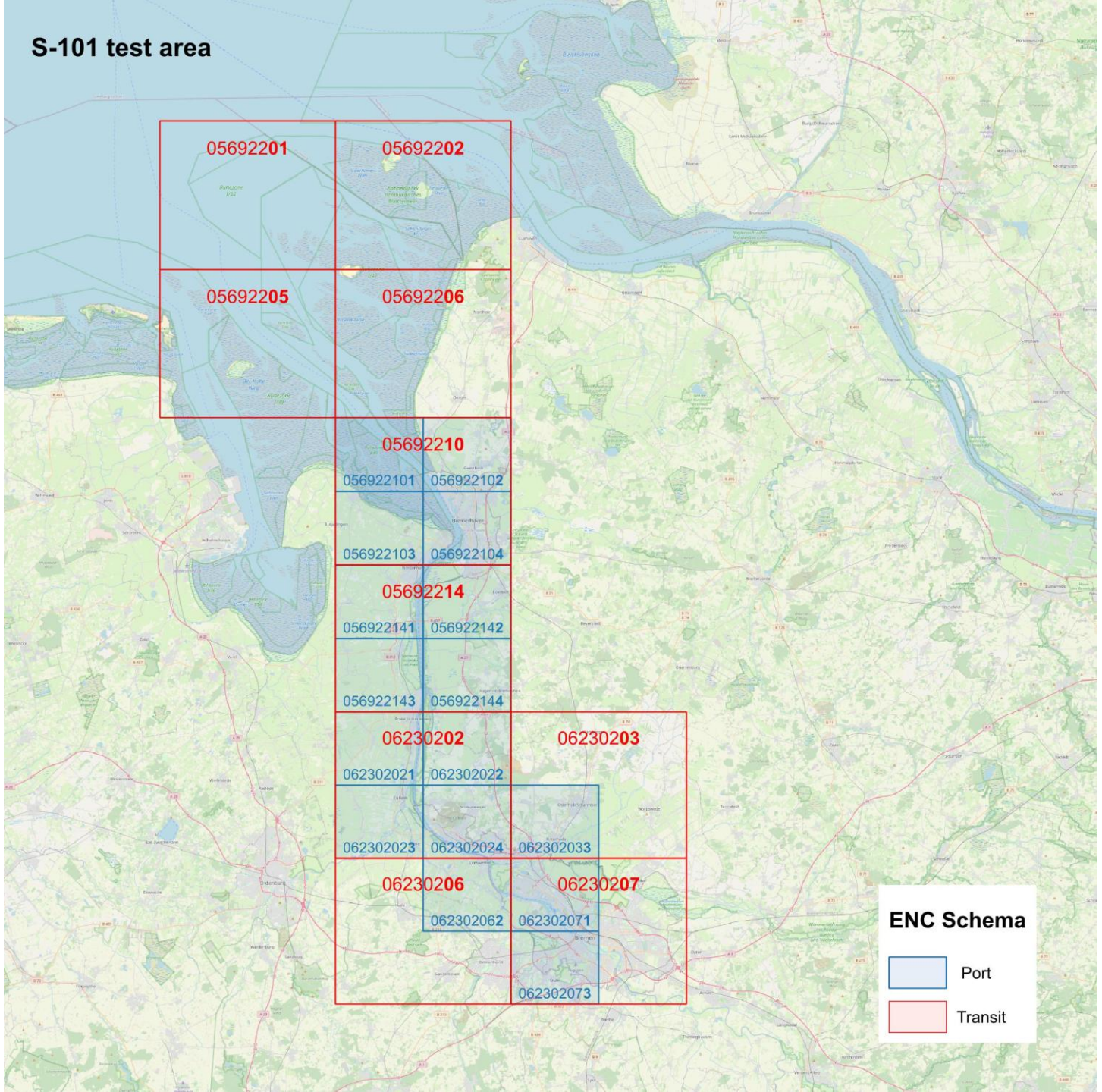
IHO S-100 5.2 Dataset naming standard

Dataset naming shall follow a standard pattern to give implementers the assurance of unique base dataset filenames for incoming datasets.



101DE00056913103

Uniform Product Grid and dataset naming standard (completed)



Uniform Product Grid

S-101 final test area
incl. S-102, S-104, S-111
completed

Production Timeline

as per Q3/2026

Product	Responsible Organisation	Area	2025	2026	2027	2028	2029	2030	2031
S-101 (ENC)	BSH	North Sea							
		Baltic Sea							
S-102 (Bathymetric Surface)	BSH	North Sea							
		Baltic Sea							
S-104 (Water Level)	BSH	North Sea							
		Baltic Sea							
S-111 (Surface Current)	BSH	North Sea							
		Baltic Sea							
S-122 (Marine Protected Area)	BSH	North Sea							
		Baltic Sea							
S-123 (Radio Services)	BSH	North Sea							
		Baltic Sea							
S-124 (Navigational Warnings)	WSV	North Sea		under consideration by GE Waterways and Shipping Administration					
		Baltic Sea		under consideration by GE Waterways and Shipping Administration					
S-125 (Marine Aids to Navigation)	BSH	North Sea		no provision of S-125 products planned					
		Baltic Sea		no provision of S-125 products planned					
S-126 (Marine Physical Environment)	BSH	North Sea							
		Baltic Sea							
S-127 (Marine Traffic Management)	BSH	North Sea							
		Baltic Sea							
S-128 (Catalogue of Nautical Products)	BSH	North Sea							
		Baltic Sea							
S-129 (Under Keel Clearance)	third party	North Sea		in progress for river Weser by third party					
		Baltic Sea							
S-131 (Marine Harbour Infrastructure)	BSH	North Sea							
		Baltic Sea							
S-411 (Ice Information)	BSH	North Sea							
		Baltic Sea							
S-412 (Weather and Wave Hazards)	DWD	North Sea		under consideration					
		Baltic Sea		under consideration					
S-413 (Weather and Wave Conditions)	DWD	North Sea		under consideration					
		Baltic Sea		under consideration					
S-414 (Weather and Wave Observations)	DWD	North Sea		under consideration					
		Baltic Sea		under consideration					
S-421 (Route Exchange)	WSV	North Sea		under consideration					
		Baltic Sea		under consideration					
S-212 (Digital VTS Service)	WSV	North Sea		under consideration					
		Baltic Sea		under consideration					

S-127 Marine Traffic Management (completed)

Source:

VTS Guide Germany

Processing:

Automated analysis of book content

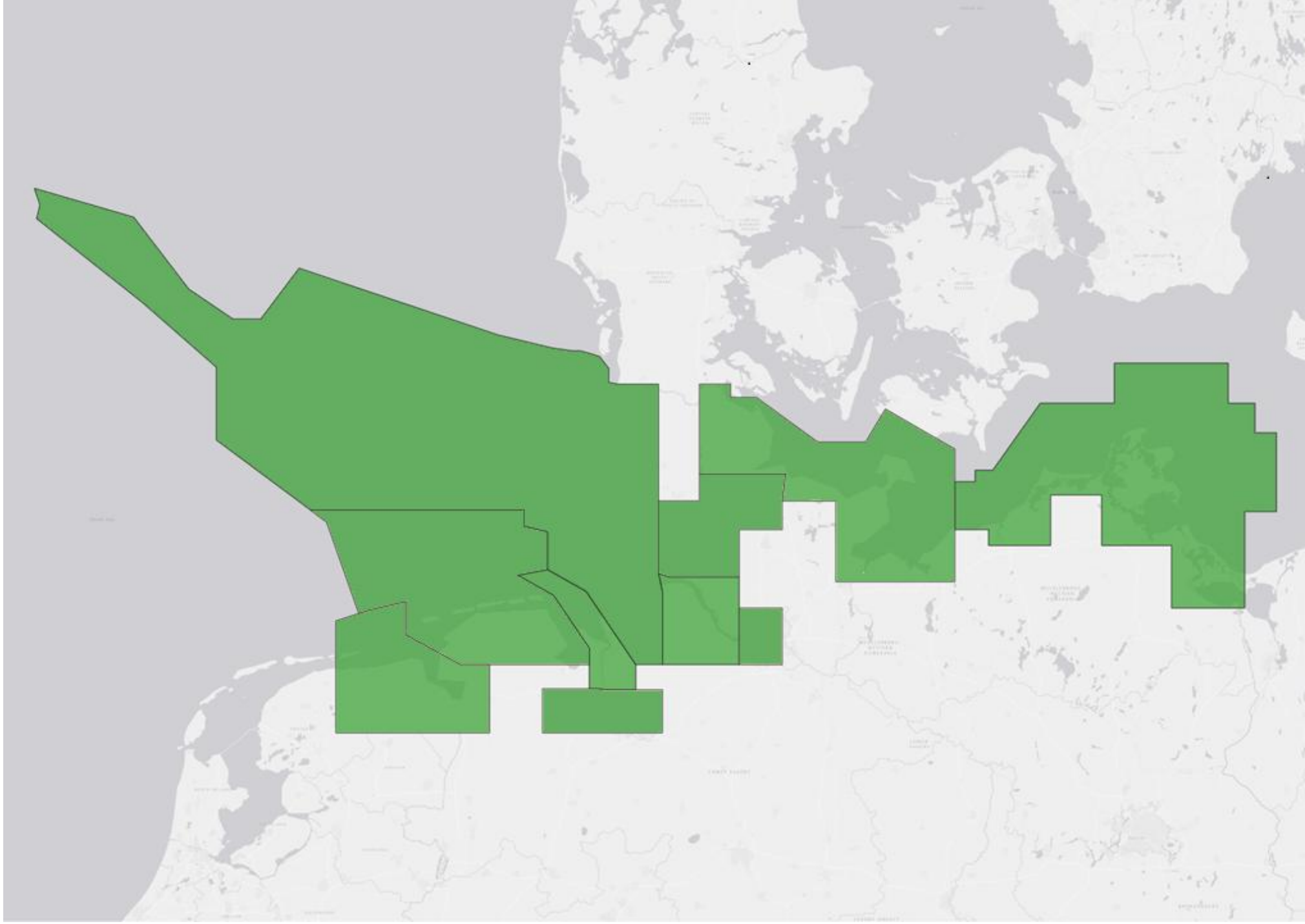
Converting book content into S-127 data model and assigning relevant VTS Areas

Generating S-127 product

Benefit: VTS Guide Germany publication can be derived automatically

NO REAL-TIME PRODUCT

Complete S-127 data for German waters + VTS Guide already produced with S-127 as data basis

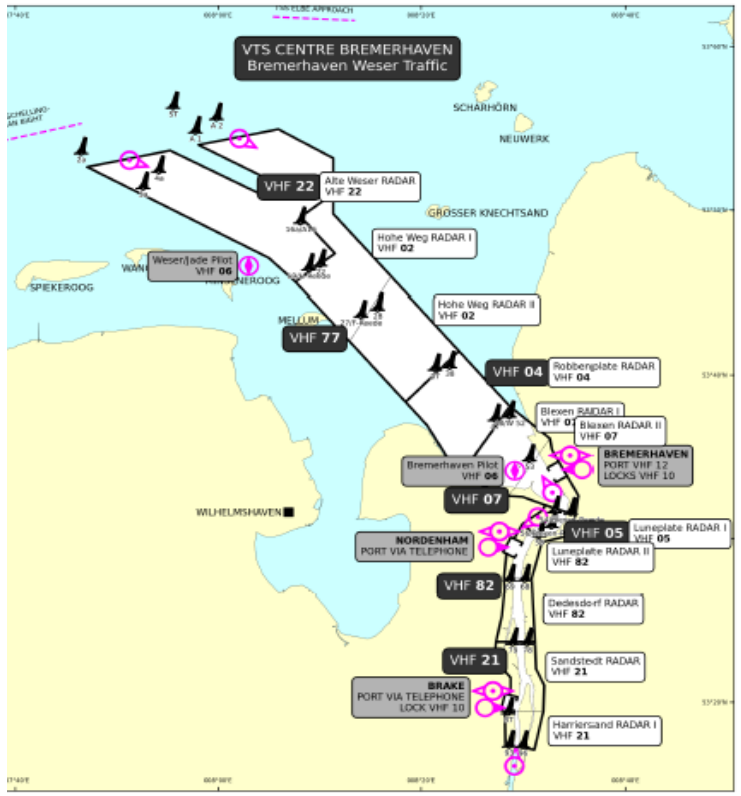


1 Bremerhaven Weser Traffic

el Traffic Service

a

see diagram



tion

VTS Centre Bremerhaven

Contact Details

Call	Bremerhaven Weser Traffic
Frequency	see diagram
Telephone	+49 (0) 4 71 4 83 53 33
Fax	+49 (0) 4 71 4 83 52 00
E-mail	vts-bremerhaven@wsv.bund.de

Continuous Listening Watch

when entering on VHF working channels and VHF channel 16

Reports

Sailing Plan

Who

- vessels of 50 m in length or more, including pushed or towed compo
- vessels carrying dangerous goods in bulk (gas / chemicals / p petroleum products)
- unloaded tankers if not cleaned, degassed or completely inerted aft petroleum / petroleum products / chemicals with a flashpoint below 35

When/Where

- before entering the VTS area
  - from sea (if not already reported by SP to German Bight Traffic)
  - from a harbour or berth within the VTS area

to Whom

Bremerhaven Weser Traffic

What

A	vessel's name and call sign
D	vessel's position
U	vessel's length (metres), beam (decimetres) and type
O	vessel's draught (decimetres)
G	port of departure
I	port of destination
P	indication if liquefied gases, chemicals, or petroleum / petroleur are / were carried in bulk, and in case: type, quantity, UN-nun tanks are not cleaned or if they are completely inerted
Q	indication of deficiencies, restrictions of manoeuvrability
T	names of the vessel's owner or the latter's agents
W	number of persons on board

S-127 Marine Traffic Management (completed)

Source:

HPD source data

Processing:

Automated analysis of HPD source data

Conversion to S-125 Edition 1.0.0 data model

Generating product

Benefit: List of Lights and Winter Buoyage publications are derived automatically

List of Lights and Winter Buoyage (completed)

Source:

IUCN Database

HPD Source Data, German Law

Processing:

Automated analysis of IUCN database geometry and content

Automated analysis of HPD geometry and content

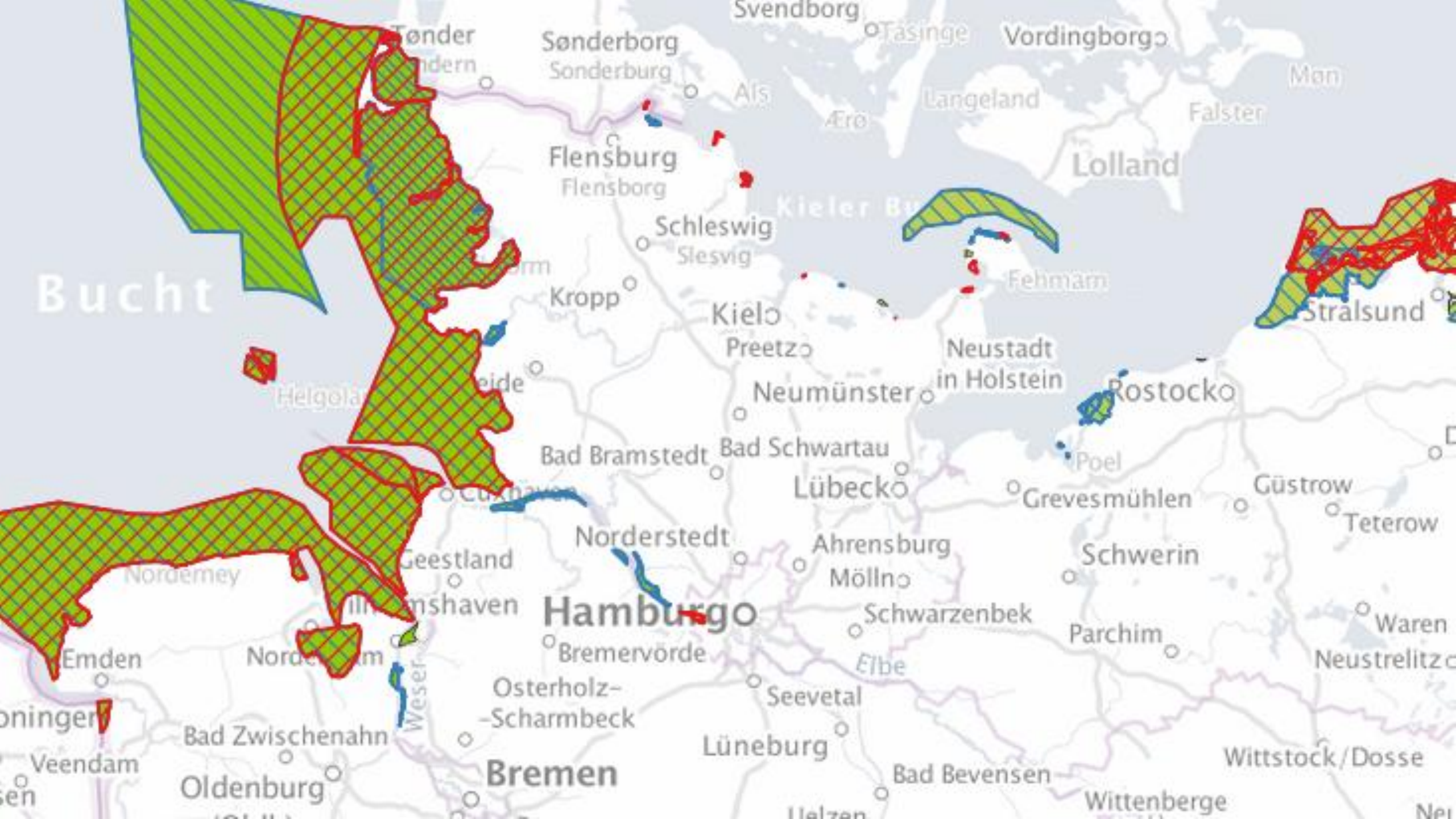
Compare IUCN and HPD Data

Analysis of relevant German Law

Conversion into S-122 data model

Generating S-122 product

S-122 Marine Protected Area (completed)


Svendborg
Tønder
Sønderborg
Sonderburg
Vordingborg
Als
Langeland
Falster
Flensburg
Flensborg
Lolland
Schleswig
Slesvig
Bucht
Kropp
Kiel
Fehmarn
Stralsund
Preetz
Neustadt
in Holstein
Neumünster
Rostock
Helgoland
Bad Bramstedt
Bad Schwartau
Lübeck
Poel
Grevesmühlen
Güstrow
Teterow
Norderstedt
Ahrensburg
Schwerin
Mölln
Geestland
Norderney
Hamburg
Schwarzenbek
Parchim
Waren
Neustrelitz
Emden
Bremervörde
Elbe
Osterholz-
-Scharmbeck
Seevetal
Weser
Bad Zwischenahn
Lüneburg
Wittstock/Dosse
Veendam
Oldenburg
Bremen
Bad Bevensen
Wittenberge

Source:

German national survey archive, BSH internal survey data, third party survey data

Processing:

Harmonisation of source data according to predefined settings

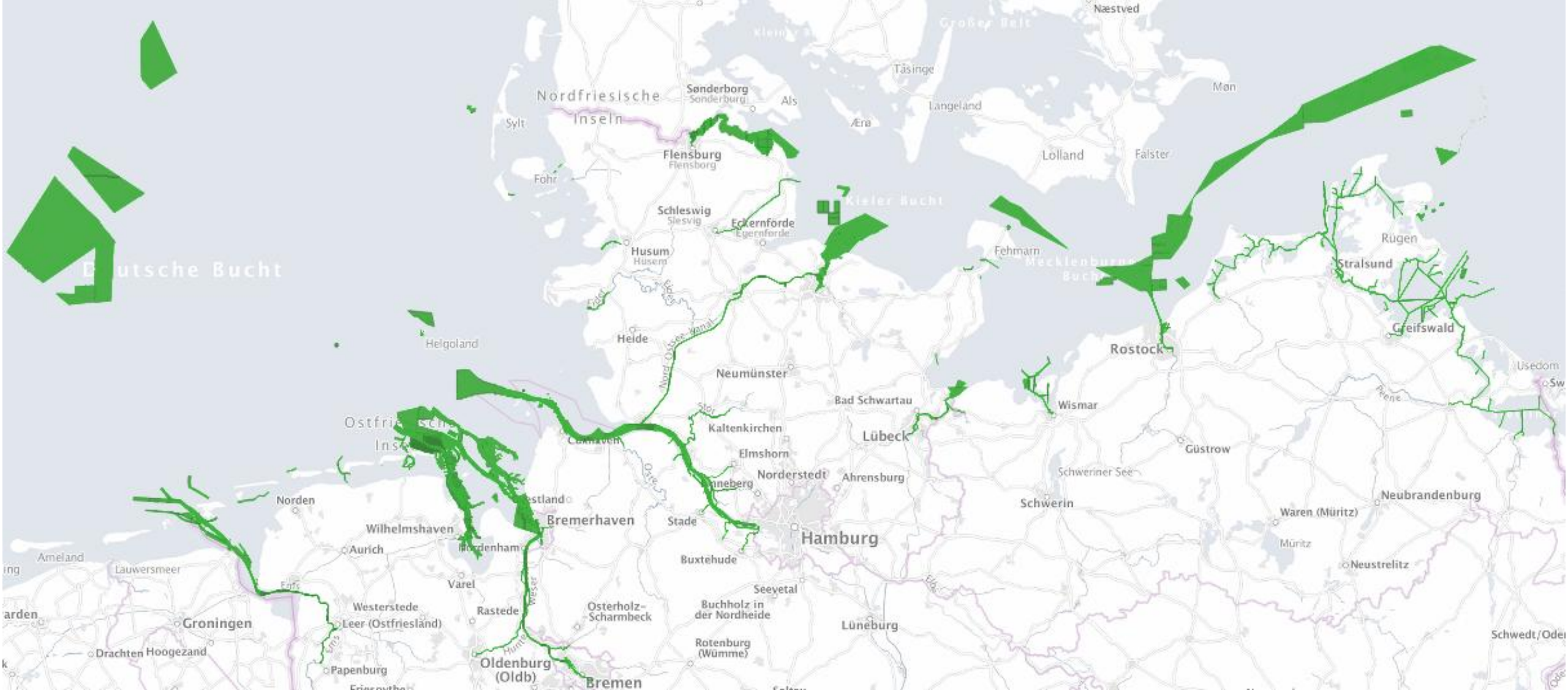
Generation of seemless digital elevation model

Conversion into various S-102 resolution grids

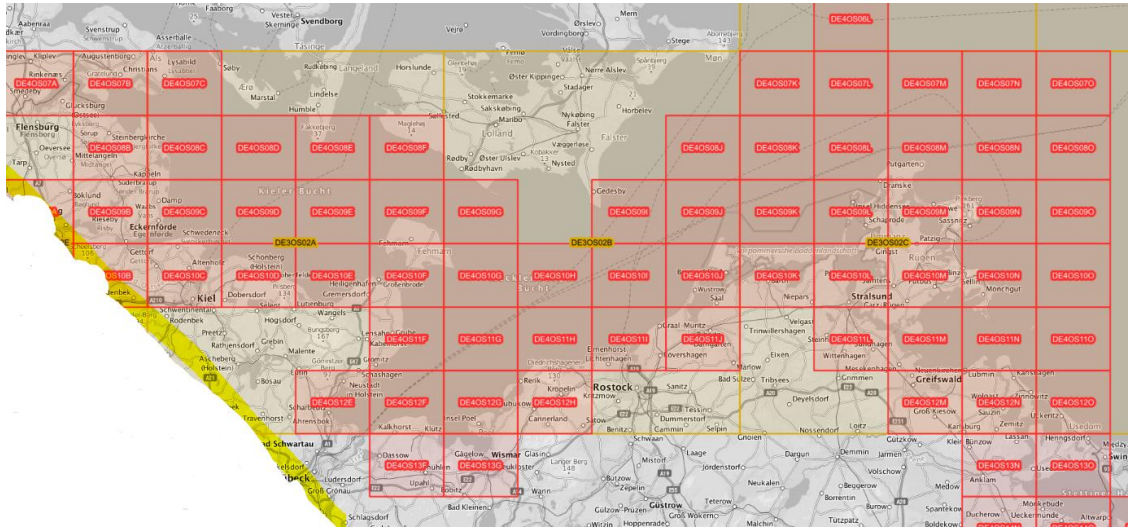
Generating S-102 products

S-102 Bathymetric Surface

full coverage (multibeam survey areas executed 2023 or later completed)



S-102 Continuous delivery service



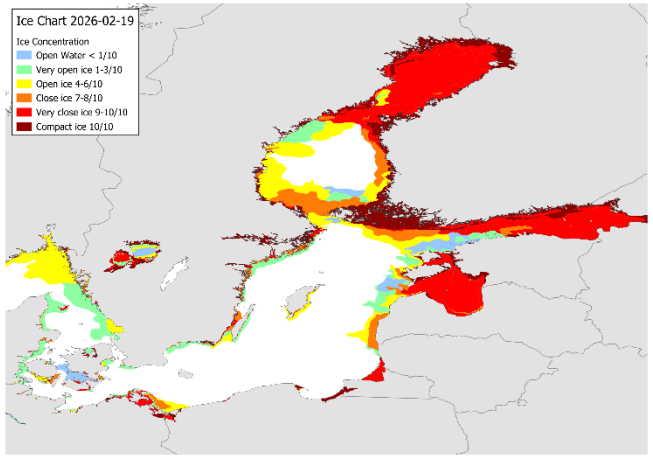
Processing:

High frequent time series for water level adjustment and surface current assigned to transit grid

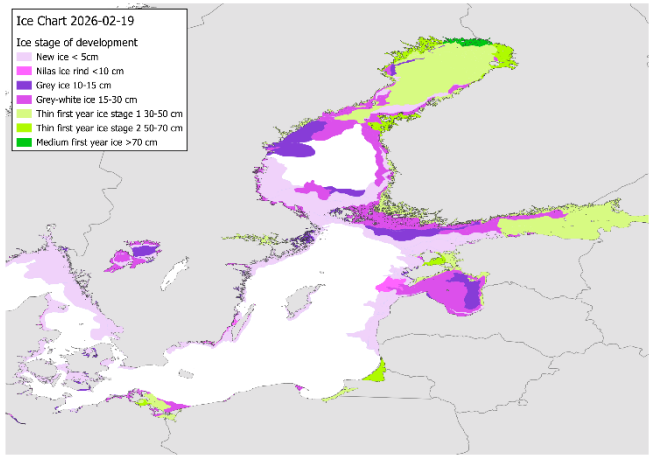
Benefit: Scipt driven fully automated processes

S-104
S-111
Water Level
Surface Current
(completed)

S-411 Dynamic Ice Information



Ice concentration



Ice development

Processing:

Compiling own and third party ice information

Benefit: Useable for ECDIS and other applications

Source data acquisition

Transforming single beam survey into grid

Definition of third party products status

Cross-products validation

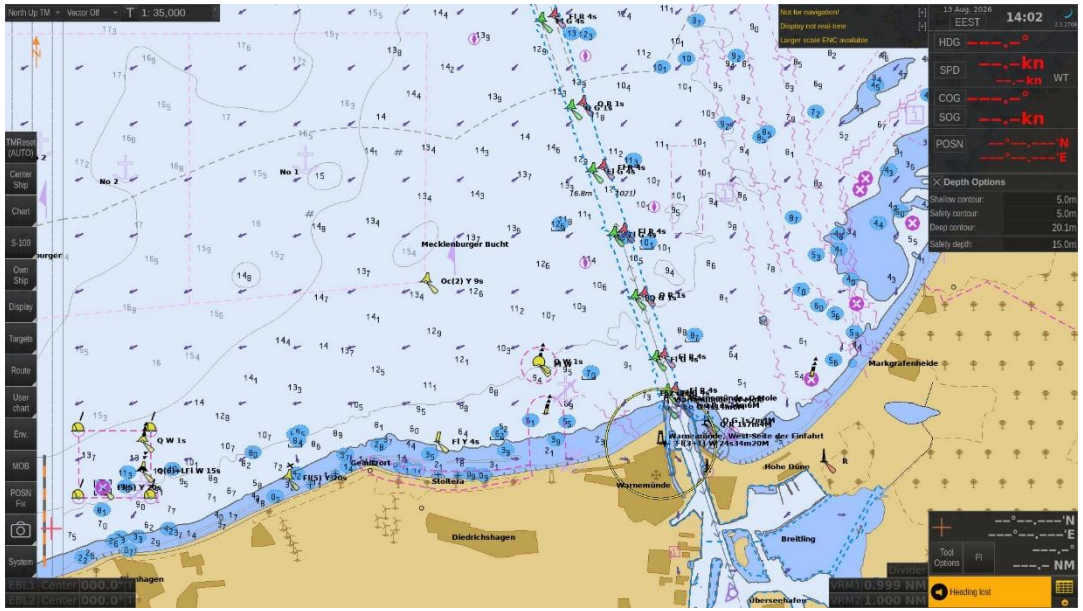
HPD S-1xx catalogues (single vs. multi)

Automated Exchange Sets creation

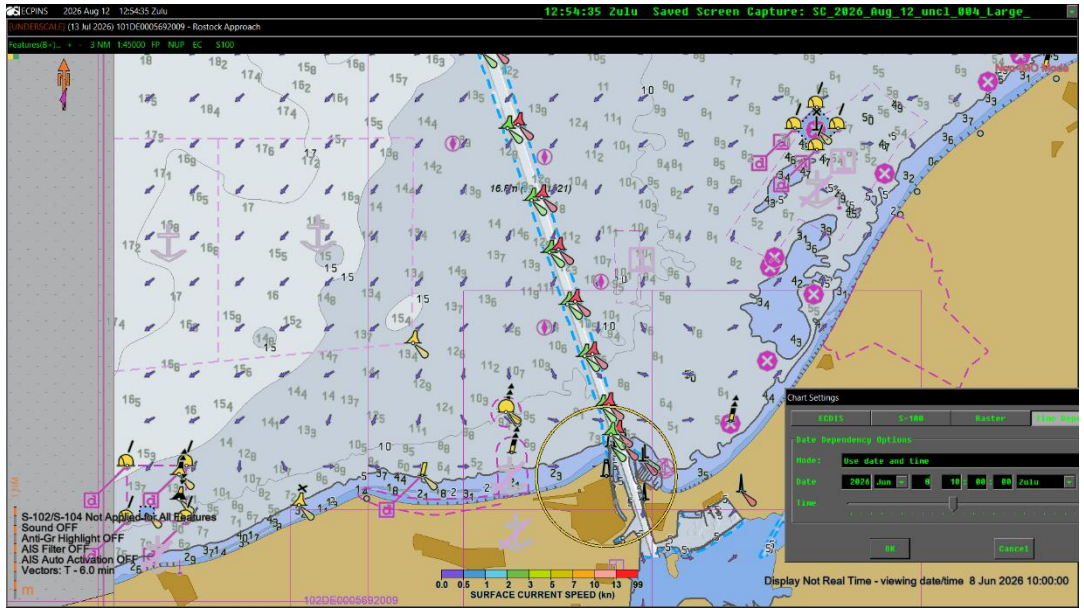
S-101 based paper chart production

Outstanding issues and Challenges

S-100 Data in ECDIS



FURUNO Screenshots



OSI ECPINS Screenshots



http://farm1.static.flickr.com/169/370320910_f869224ff5.jpg