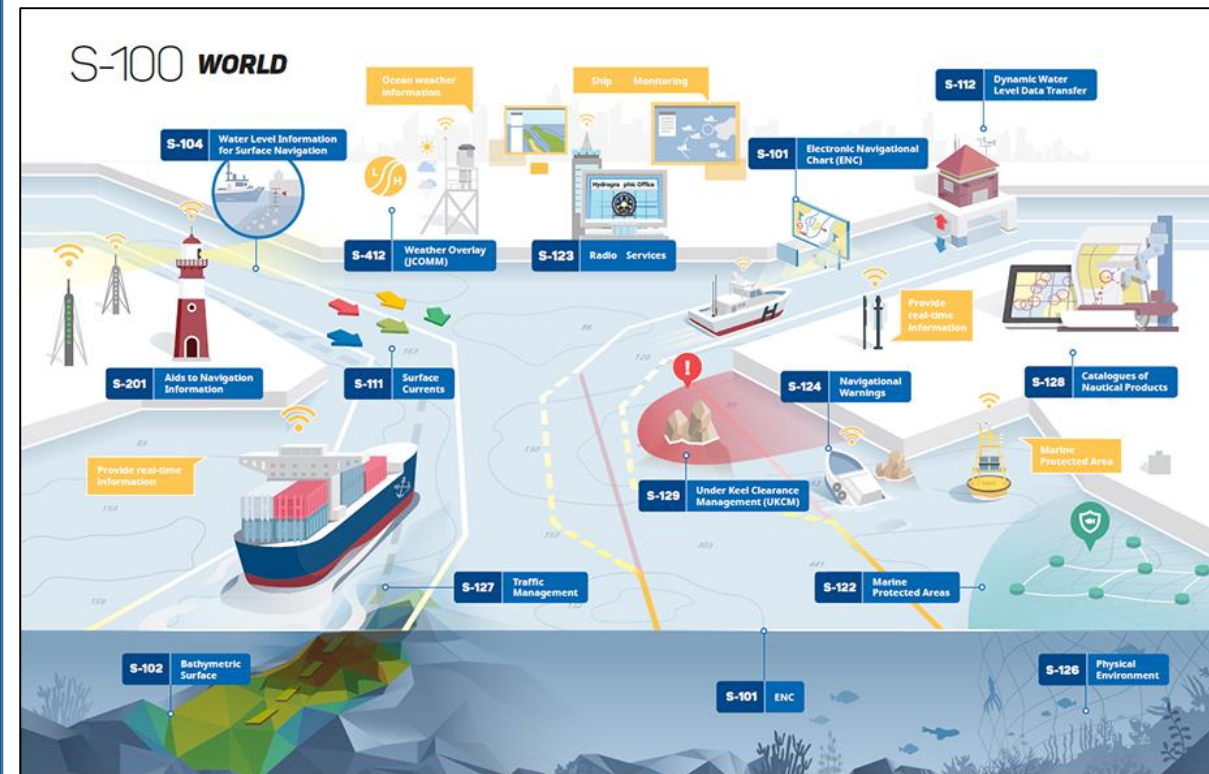


NSHC Tidal Working Group, February 6/7, 2024 Göteborg



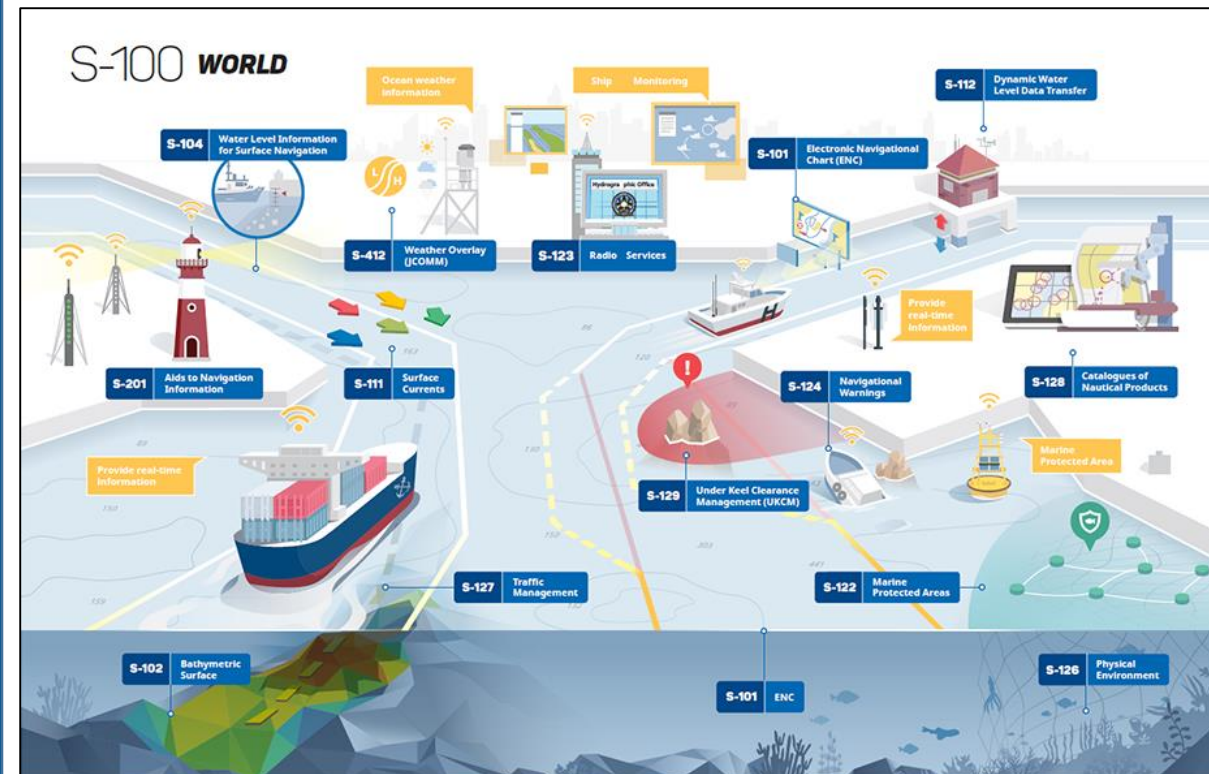
Germany's ^{preliminary} plans for S-104 (and S-111) products

Andreas Boesch (BSH)

NSHC Tidal Working Group, February 6/7, 2024
Göteborg



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE



S-100 @ BSH

Section: Nautical Information Service

S-101 Electronic Navigational Chart (ENC)

S-102 Bathymetric Surface

S-124 Navigational Warnings

...

Section: Forecasting Services

S-104 Water Level Information for Surface Navigation

S-111 Surface Currents

Possible cooperation with German Weather Service
for Storm Surge Warnings:

S-412 Weather and Wave Hazards

Also in development @ BSH:

S-411 Ice Information



Work in progress: A national S-100 strategy, including the
Federal Ministry for Digital and Transport and other agencies

Planned S-104/S-111 Products

Here: Only North Sea

As of December 2023

When?	Standard	Product	DCF	Updates
2024 (test data)	S-104	Tide predictions @ tide gauges	8	1x / year
2024 (test data)	S-104	Water level forecasts @ tide gauges -> Manual forecasts	8	4x / day
2024 (test data)	S-111	Surface currents (from circulation model)	2	2x / day
???	S-104	Water level forecasts @ tide gauges -> Semi-automated forecasts	8	4x / hour
???	S-104	Tide predictions (area-wide on grid)	2	1x / year
???	S-104	Water level forecasts (area-wide on grid)	2	4x / hour
???	S-104	Water level observations	8	~1x / minute
???	S-412	Storm Surge Warnings		as needed

DCF: Data Coding Format



Planned S-104/S-111 Products

Here: Only North Sea

S-104 Edition 2.0.0 (January 31, 2024):
Only DCF=2



When?	Standard	Product	DCF	Updates
2024 (test data)	S-104	Tide predictions @ tide gauges	8 -> 2?	1x / year
2024 (test data)	S-104	Water level forecasts @ tide gauges -> Manual forecasts	8 -> 2?	4x / day
2024 (test data)	S-111	Surface currents (from circulation model)	2	2x / day
???	S-104	Water level forecasts @ tide gauges -> Semi-automated forecasts	8 -> 2?	4x / hour
???	S-104	Tide predictions (area-wide on grid)	2	1x / year
???	S-104	Water level forecasts (area-wide on grid)	2	4x / hour
???	(S-104)	(Water level observations)	8 -> 2?	~1x / minute
???	S-412	Storm Surge Warnings		as needed

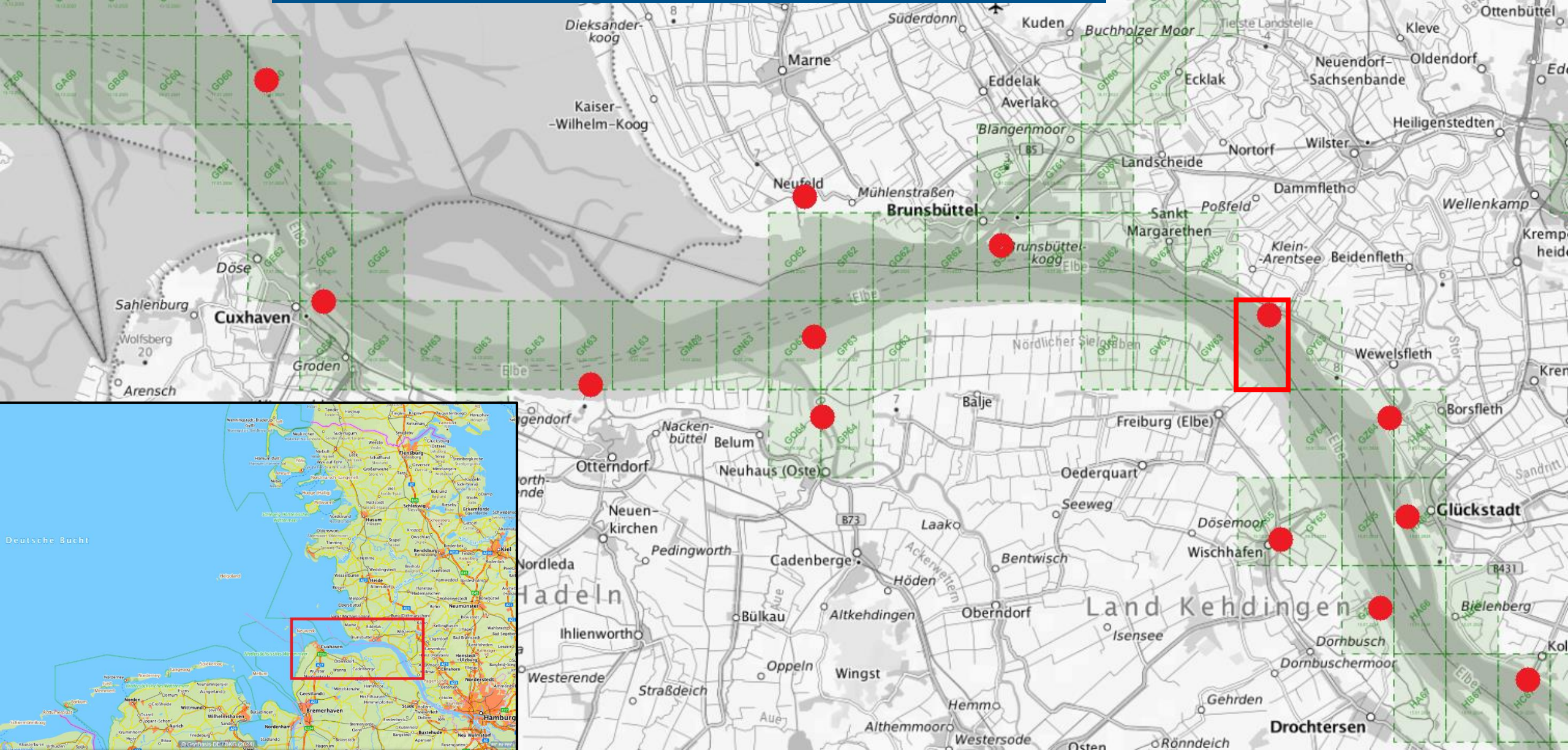


DCF: Data Coding Format

Ensuring Interoperability

- Phase 1: Route Monitoring
 - S-104 ed 2.0 within S-100: Focus is on water level adjustment
- Has S-104 to be defined on the same grid as S-102 (bathymetry)?
 - This is currently assumed
- BSH S-102 grids: 1m x 1m
- Issue DCF 8 -> DCF 2:
Idea: Fill area of S-102 tile with water level data from tide gauge location

Elbe River: S-102 tiles and tide gauges



Delivery

(first ideas...)

- Distribution through Regional ENC coordinating centre (RENC)
 - For Germany: IC-ENC
- Additionally, data could be available from BSH servers for Vessel Traffic Service Centres and pilots
- Unified publication scheme for all S-100 products from BSH (if possible)