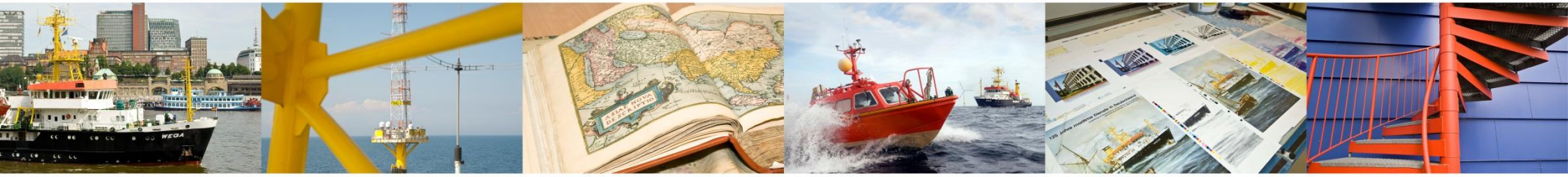
BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

S-102 extension as proposal to implement source metadata



Purposes of S-102 data products

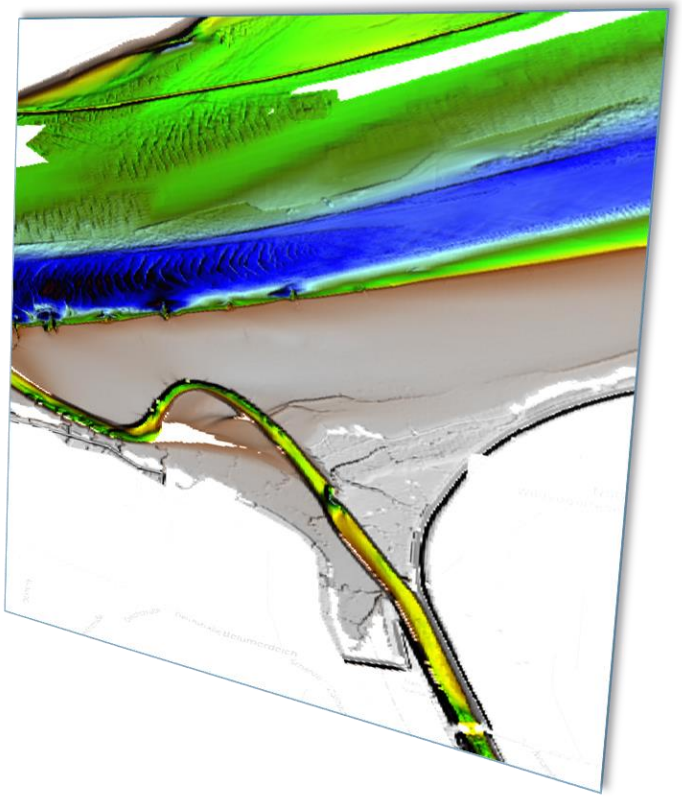
BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

Navigation

- For a safe navigation in congested and confined waterways
- For a more precise route planning
- For the most efficient use of existing transport areas

Production

- As uniform basis (DTM) for the production of all cartographic products (ENCs, Paper charts) - consistency, timeliness and reliability

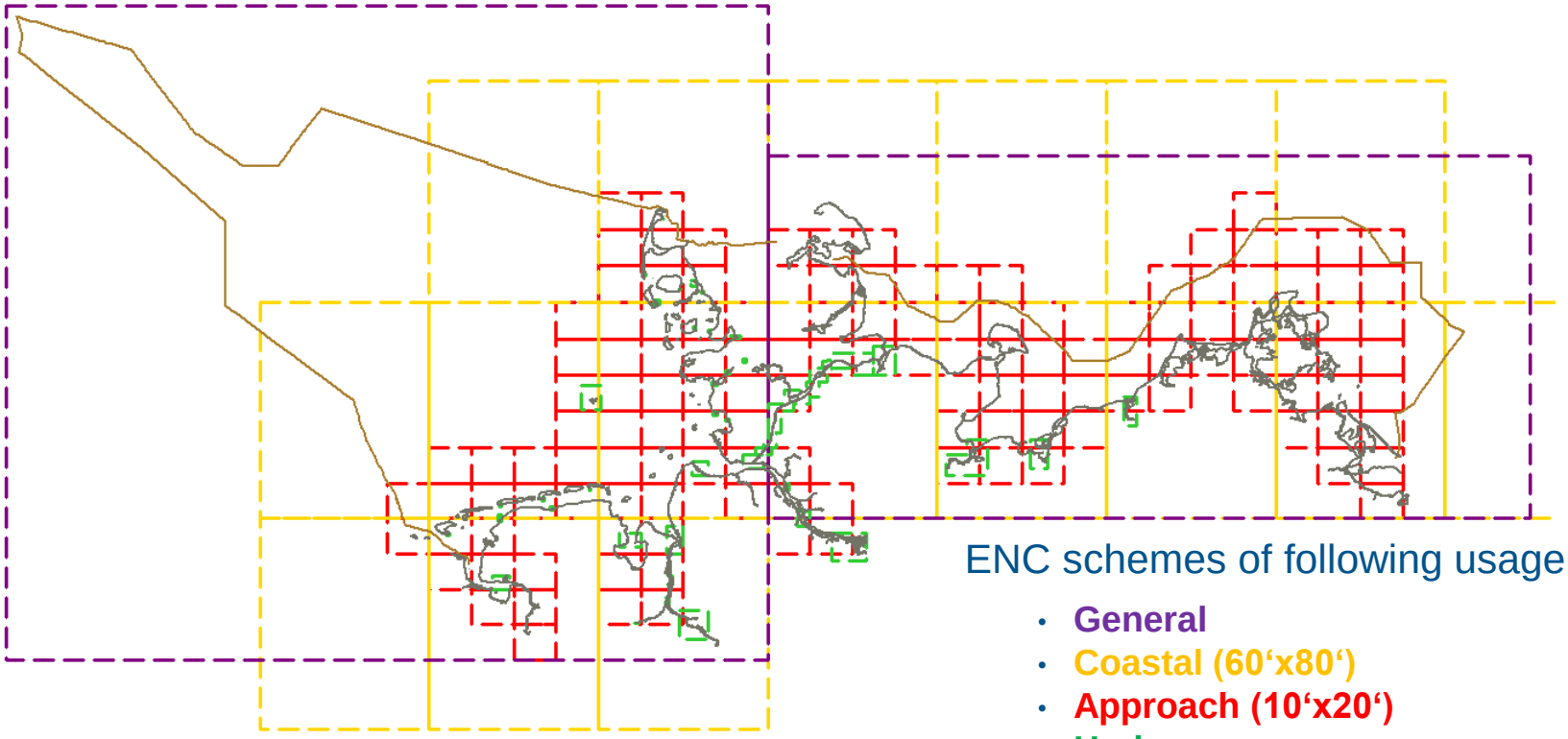


Tiling schemes

BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

Tiling schemes of ENCs and bENCs reorganized / extended at BSH

- Basis for all products is a grid of 2‘ x 2‘ minutes (even-numbered) = bENC schema
- ENC schemes for all 6 usage bands are different multiples of bENC schema



ENC schemes of following usage bands:

- **General**
- **Coastal (60‘x80‘)**
- **Approach (10‘x20‘)**
- **Harbour**

BSH S-102 properties and extensions

BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

- Concerned usage bands: Harbour, Approach (= bENC Usage bands which are compliant with corresponding ENCs)
- Coordinate reference systems: ETRS89 / UTM (epsg: 25832)
- Grid-resolution: 1m
- Source metadata → to meet user requirements and to guarantee quality-assured production
  - dateStart
  - dateEnd
  - surveyAuthority
  - techniqueOfVerticalMeasurement
- Publication of a New edition: source-driven (depending on the dynamic of the sea area)
- First development stage:
  - Coverage of pilotage waters / fairways (to replace the bENCs)
  - Restricted user group – pilots and traffic control centers
  - Distribution via FTP

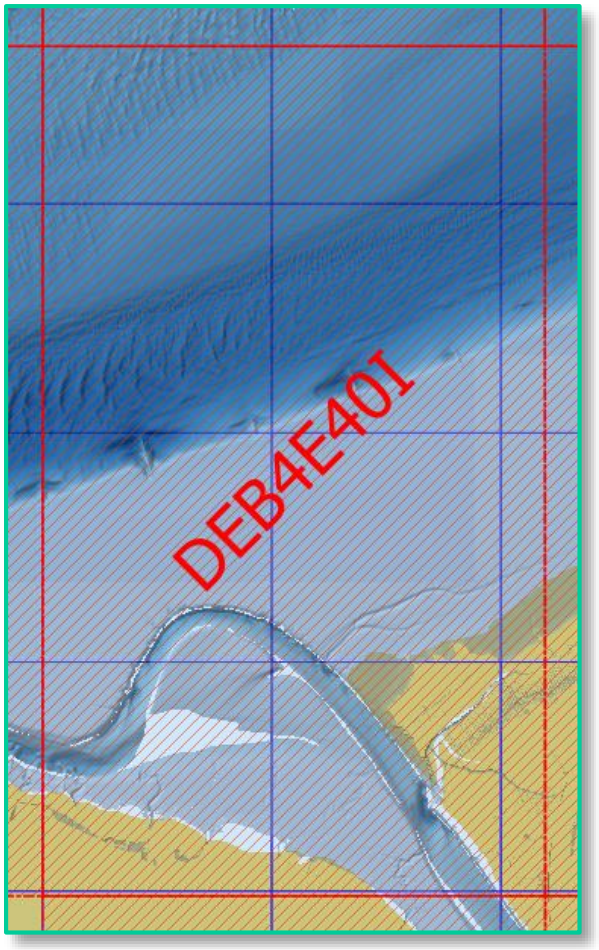
BSH S-102 data products

BUNDESAMT FÜR SEESCHIFFFAHRT UND APHIE

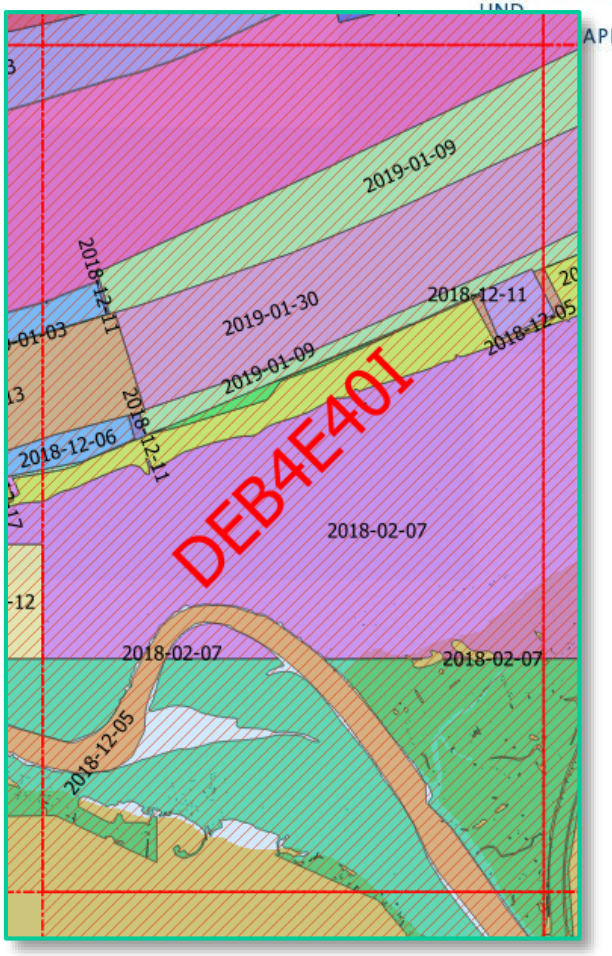
Final S-102 product is an up-to-date and non-overlapping DTM

Quantity of data

- Measured data and metadata – 5.013 MB
- Metadata – 83 KB (< 2%)

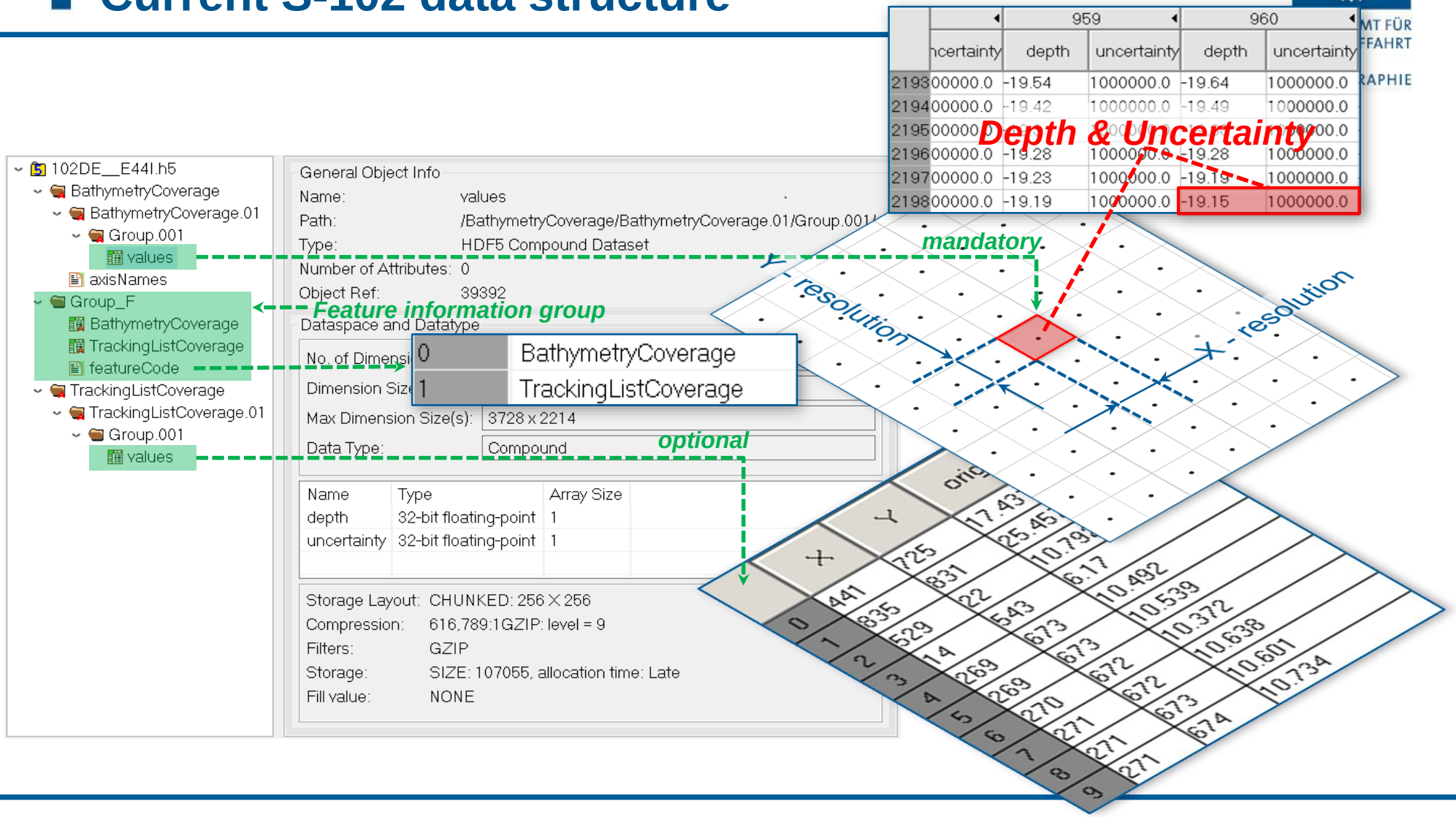


Blended surveying data



Blended metadata

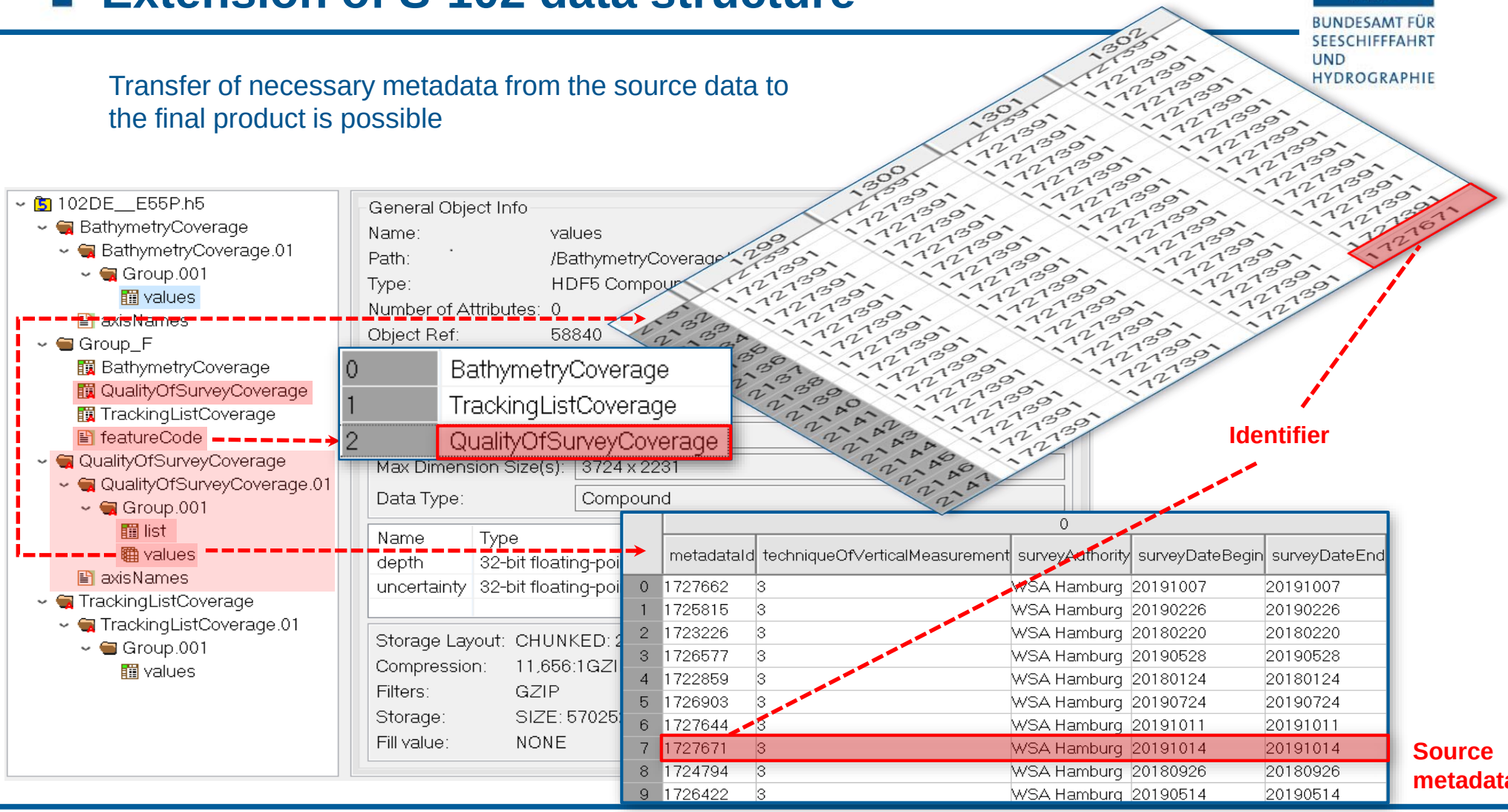
Current S-102 data structure



Extension of S-102 data structure

BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

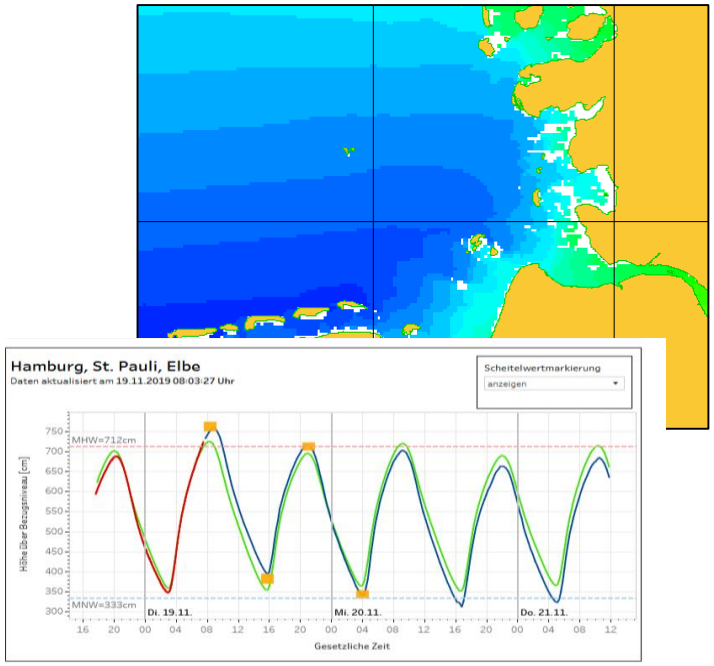
Transfer of necessary metadata from the source data to the final product is possible

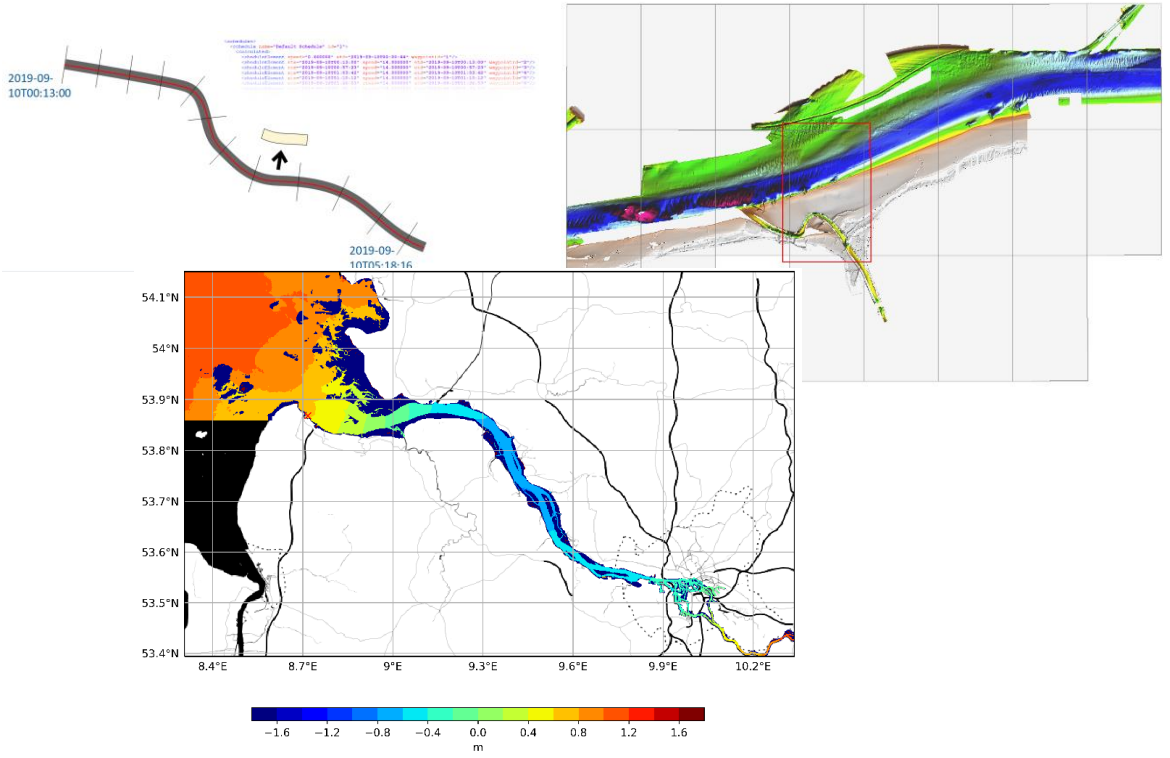


Project – ImoNav

Integration of high-resolution marine geodata in electronic Navigation systems

- New data services for narrow and congested waterways
- Cooperation between BSH, smile consult and SevenCs
- Combination of bathymetric data with current water level data, water level forcasting and others (S-102, S-104, S-111)





Thank you!

BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE