



Royal Netherlands Navy
Hydrographic Service



NLHO S-100 update

NSHC TWG27

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Timeline

- First operational version of S-101 was ready at the end of 2024
- 1/1/2026 New ECDIS systems may be S-100 compatible
- 1/1/2029 New ECDIS systemen must be S-100 compatible
- Unknown: how long can we use S-57 in the existing ECDIS systems?
- Hydrographic Offices must deliver S57 and S-101 (dual fuel)



2023 + 2024 Trial Production

- Focus on try an error



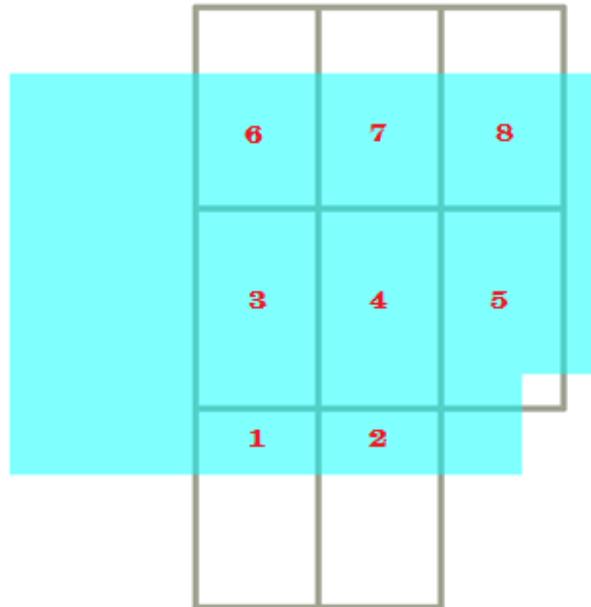


S-101

- Caris 4.1 Composer
- Source data: S-57 Harbour ENC
- Caris DCEG 1.0.0

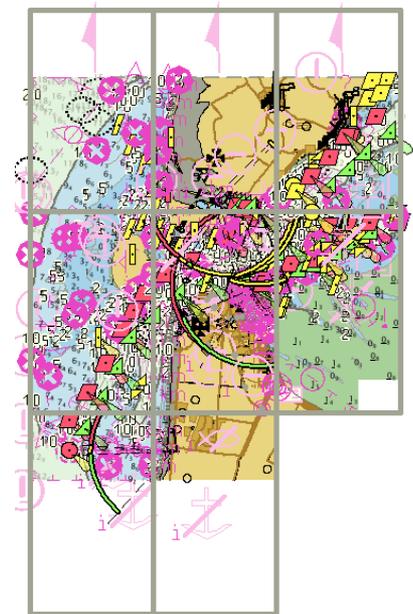


Current S-57 Harbour ENC,
compilation scale 22.000,
NL5WZ230



8 S-101 products
created based on
selected Grid

Attributes - DataCoverage	
Maximum Display Scale	12000
Minimum display scale	45000

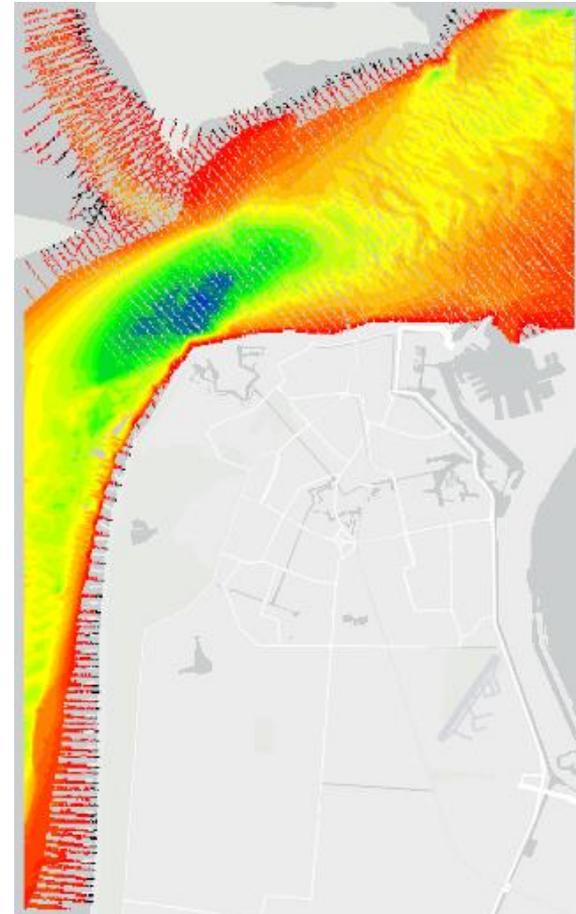


Populated S-101 products by
converting (mapping) S-57 to S-
101



S-102 Teledyne Caris

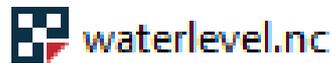
In Caris BASE Editor, created a raster file (.csar) per grid cel from the Bathymetry Database & exported to S-102



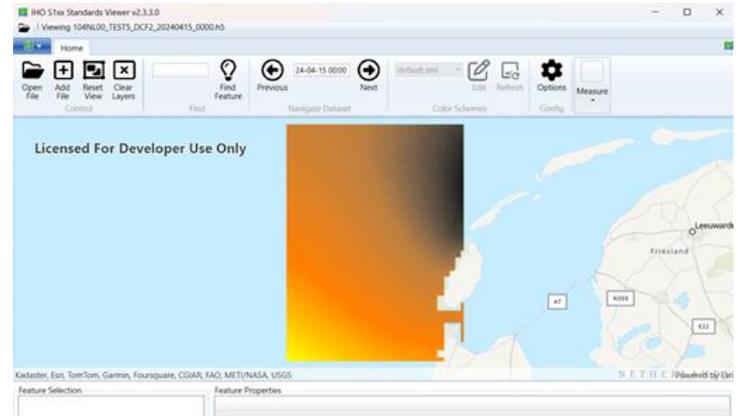


S-104

- Converted Netcdf file (from a hydrodynamic model) with SATIS – API to S-104 HDF5 file
- Data coding format 2 selected (regularly gridded data)
- 1 S-104 files created



 104NL00_TESTEN2_DCF2_20240415_0000.h5



```
source      : dcsm_v6_kf_harmonie
parameters  : se (waterlevel)
xmin,xmax   : 4.07,4.81
ymin,ymax   : 52.87,53.47
nx,ny       : 164,134
coordinate system : WGS84
start date&time : 202404150000
end date&time   : 202404160000
timestep     : 30 minutes
analyse time   : latest
```

Estimated download size: **4.11 Mb**

<https://github.com/flappah/S1XViewer>



S-111

- Data coding format 8
- Per Grid cell 12 S-111 files created for 1 year (1 per month)
- S-57 features TS_FEB from current database converted with SATIS-tool to a value per hour per station.

dataCodingFormat	Type of Data
1	Time series data at one or more fixed stations (organised by time) - type (a)
2	Regularly-gridded data at one or more times - type (b)
3	Ungeorectified gridded data or point set data at one or more times - type (c)
7	TIN data - type (d)
8	Stationwise time series at one or more fixed stations (organised by station) - type (a)

C:\Users\Hydr0013\AppData\Local\Temp\tidalstreams_1036.xml



- 111NL00_TESTEN1_DCF8_20250101_0031.h5
- 111NL00_TESTEN1_DCF8_20250201_0036.h5
- 111NL00_TESTEN1_DCF8_20250301_0033.h5
- 111NL00_TESTEN1_DCF8_20250401_0028.h5
- 111NL00_TESTEN1_DCF8_20250501_0049.h5
- 111NL00_TESTEN1_DCF8_20250601_0014.h5
- 111NL00_TESTEN1_DCF8_20250701_0049.h5
- 111NL00_TESTEN1_DCF8_20250801_0016.h5
- 111NL00_TESTEN1_DCF8_20250901_0056.h5
- 111NL00_TESTEN1_DCF8_20251001_0051.h5
- 111NL00_TESTEN1_DCF8_20251101_0039.h5
- 111NL00_TESTEN1_DCF8_20251201_0055.h5



Demo SATIS API

SATIS API and S-100 viewer Developed by Richard Flapper



Satis v1.1.1.0 | S104 and S111 converter for HPD products

Home

Open File | Open HPD | Start | View | Edit Metadata | Options

Select S104 or S111 File X

S104/S111 product generation:

Product Type: S104
Data Coding Format: DCF2

Select either a file or an HPD Product from the list that contains the input data

File name: D:\SATIS testomgeving\Testdata Satis\waterlevel.nc
CDF Template: Kustwacht_S104_DCF2
Hpd Product name:

Supply user defined metadata

Name for output product: Testen2
Overview of meta data elements: /MD_Metadata/Metadata/identifier/Description=S-104 ISO Metadata Testen2 dataset

Start S100 exchangeset generation
Select exchangeset folder: D:\temp

IHO S100 Standards Viewer v2.3.3.0

Viewing 104NL00_TESTIS_DCF2_20240415_0000.h5

Home

Open File | Add File | Reset View | Clear Layers | Find Feature | Previous | Next | default.xml | Edit | Refresh | Options | Measure

24-04-15 00:00

Map showing Europe with a heatmap overlay over the Netherlands. Labels include: Douglas, The Pennines, Leeds, Manchester, Nottingham, England, Birmingham, Cardiff, Bristol, London, English Channel, NETHERLANDS, Amsterdam, The Hague, Rotterdam, Anwerpen, Brussels, Essen, Düsseldorf, Cologne, GERMANY, Hamburg, Bremen, Hanover, Bielefeld, Leipzig.

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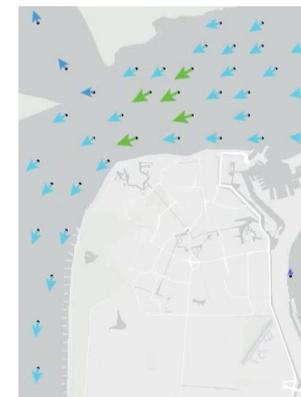
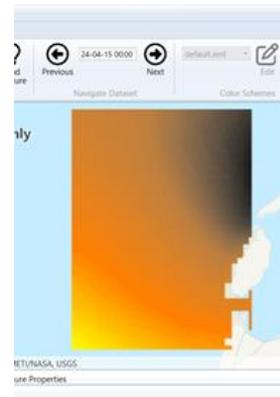
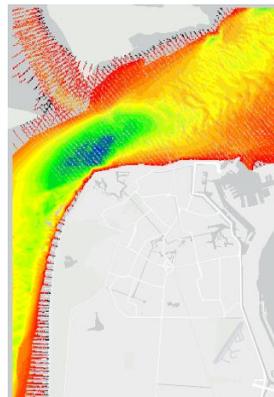
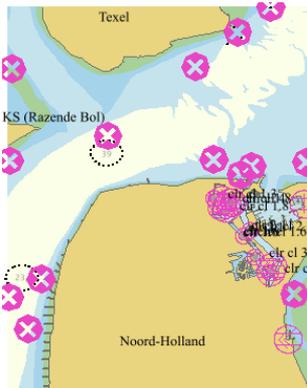
Powered by Esri

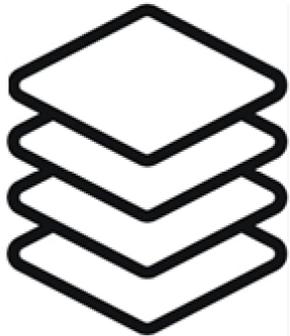
Feature Selection | Feature Properties



Results

- Created S-101, S-102, S-104 and S-111 data
- Satis API developed for production S-104 and S-111
- NLHO S-1XX viewer developed
- Trial data provided to IC-ENC





Questions?

Ideas

Comments

Remarks