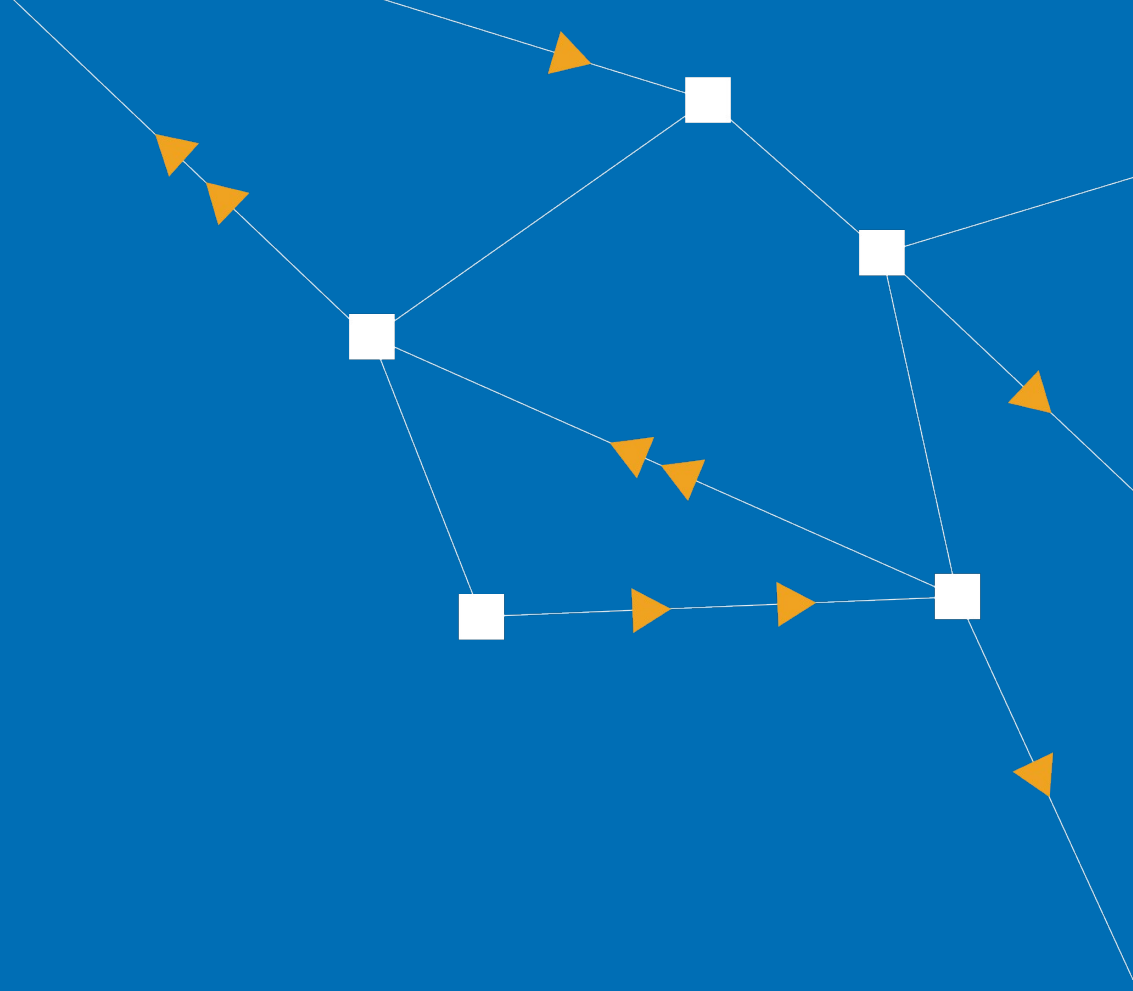




TRANSPORDIAMET

Transpordiamet

Hüdrograafiaosakond
Peeter Väling



S-104 ; S-111 production in Estonia

Current status :

Automatic production workflow of both S-104 and S-111 has been established.

Development done mid Dec 2024 – first half of Jan 2025,

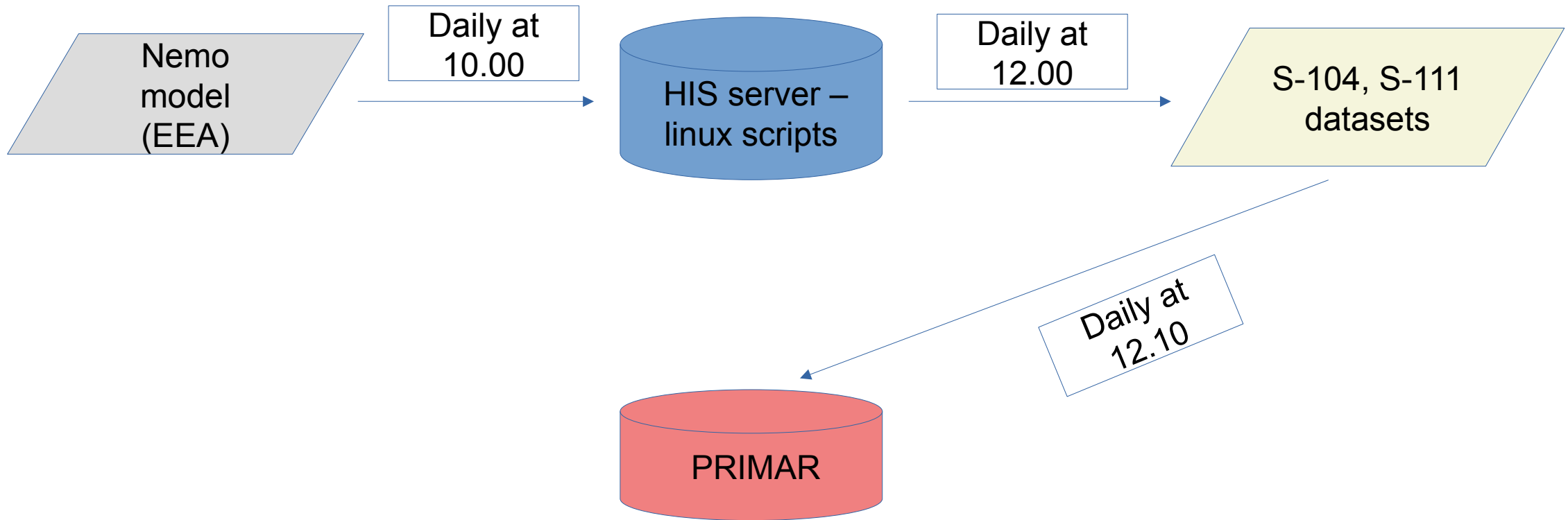
Some refinements later until Feb 2025.

Source data : Nemo model from Estonian Environmental Agency
– Contract between TRAM and EEA signed.

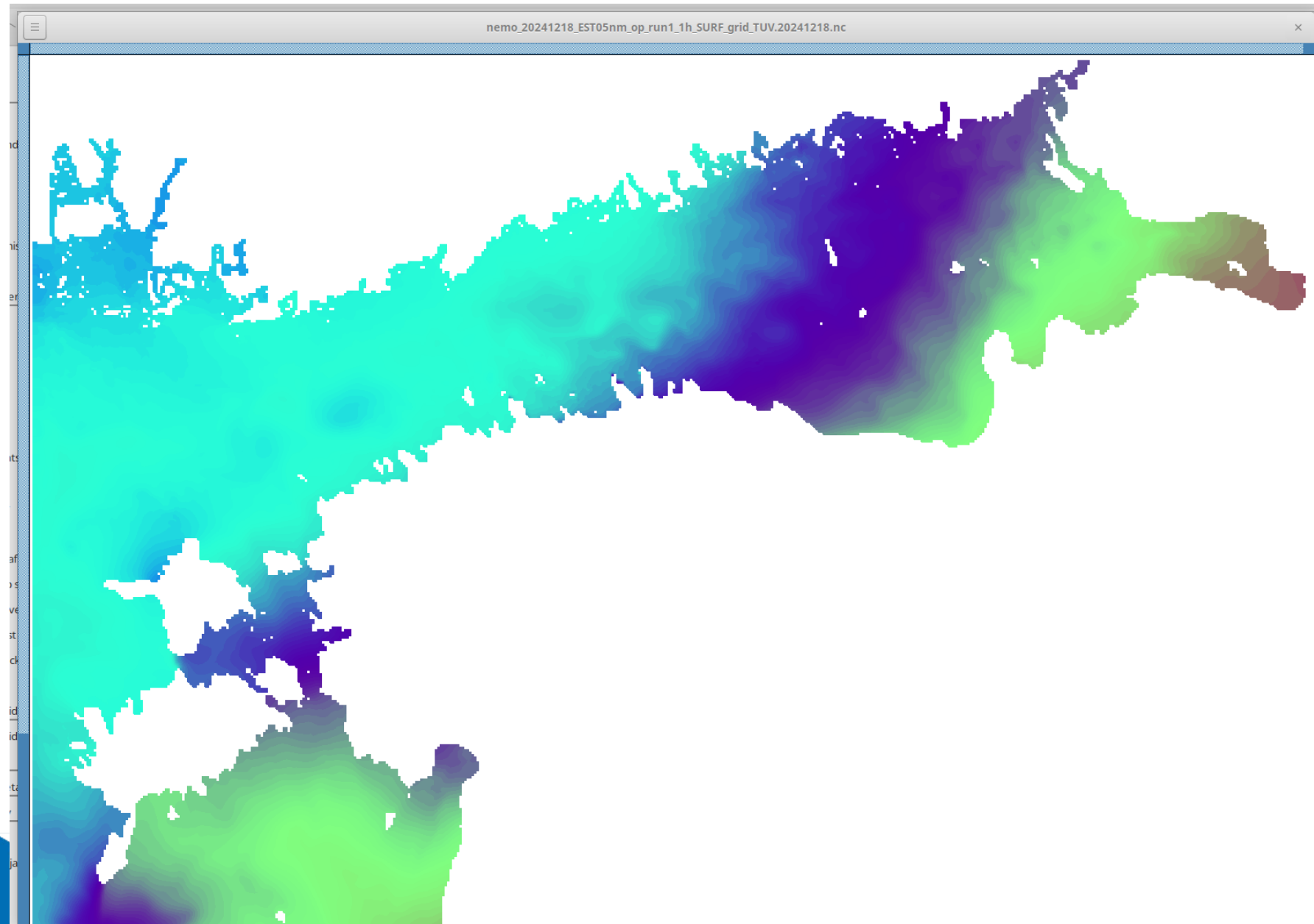
Update daily for next 24 hours



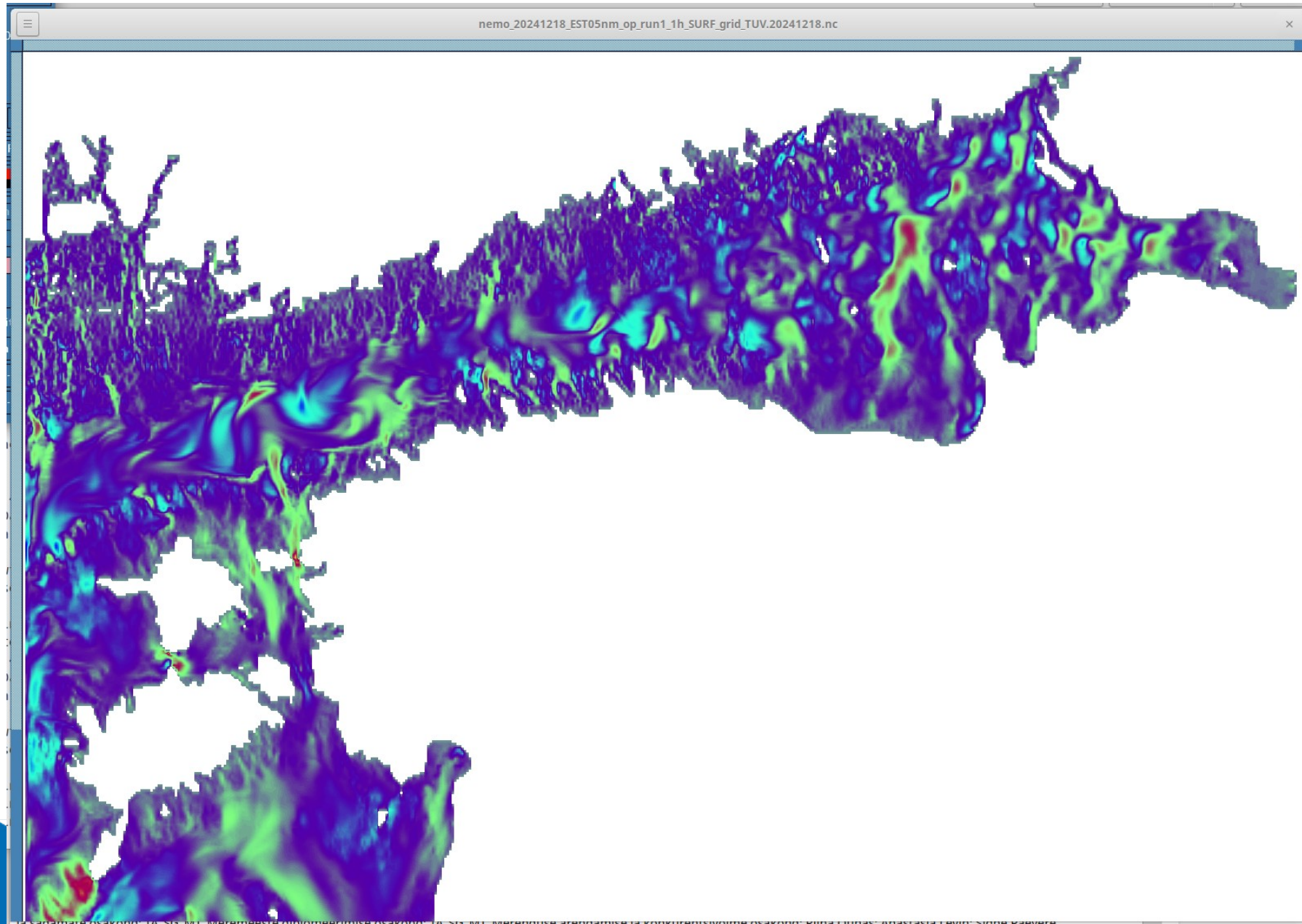
S-104 ; S-111 production in Estonia Workflow



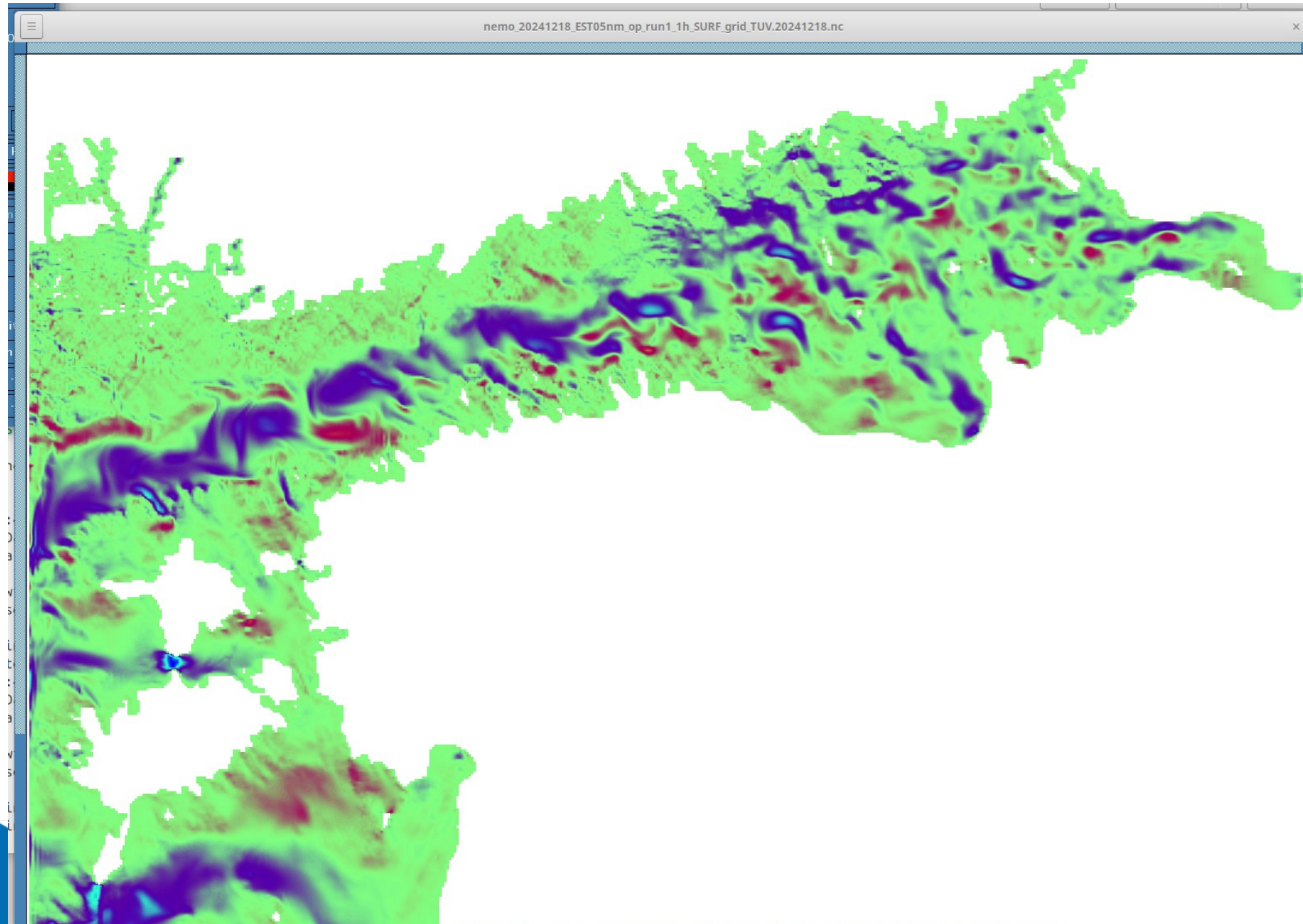
Nemo water level model



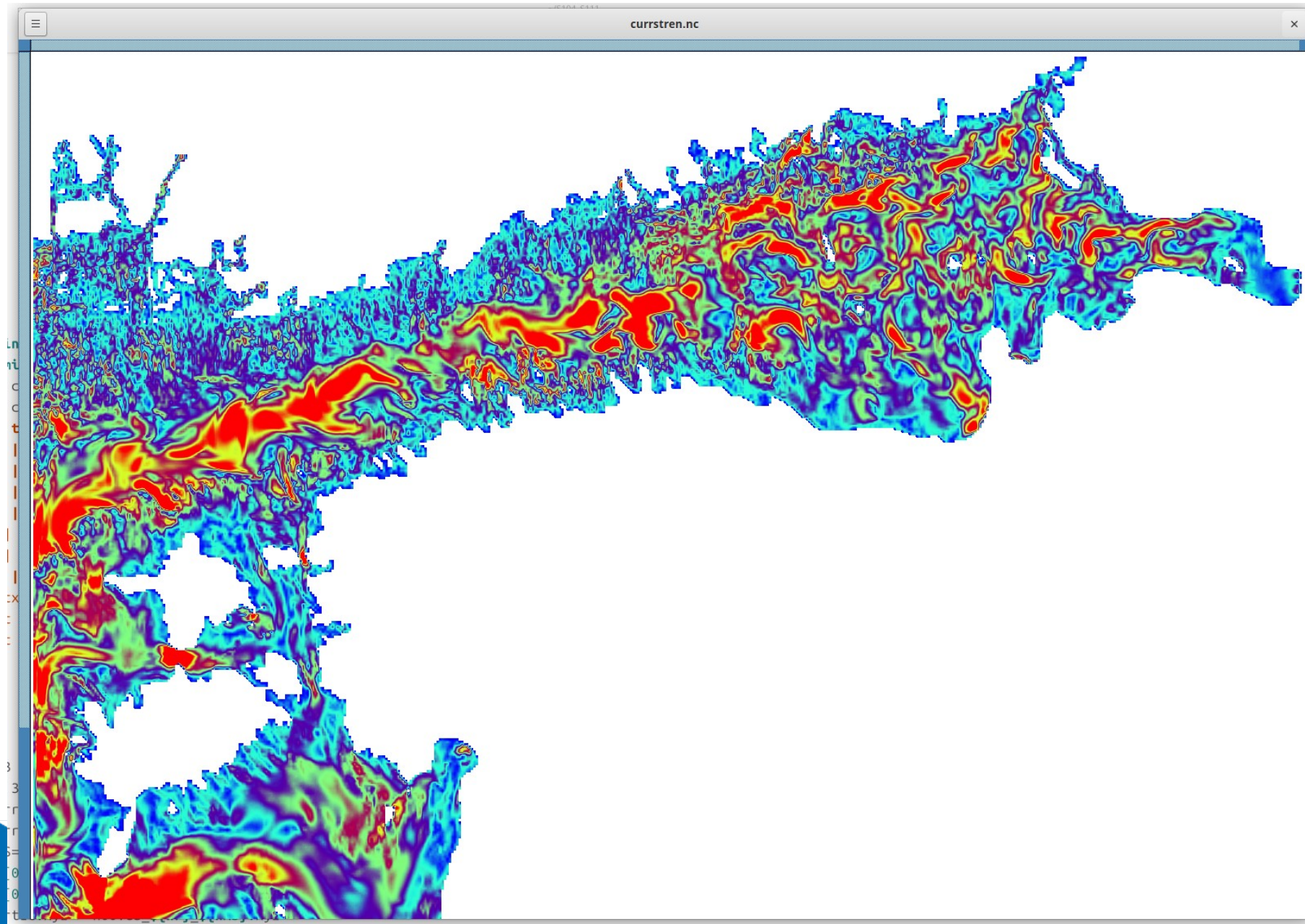
Nemo currents model N-S direction



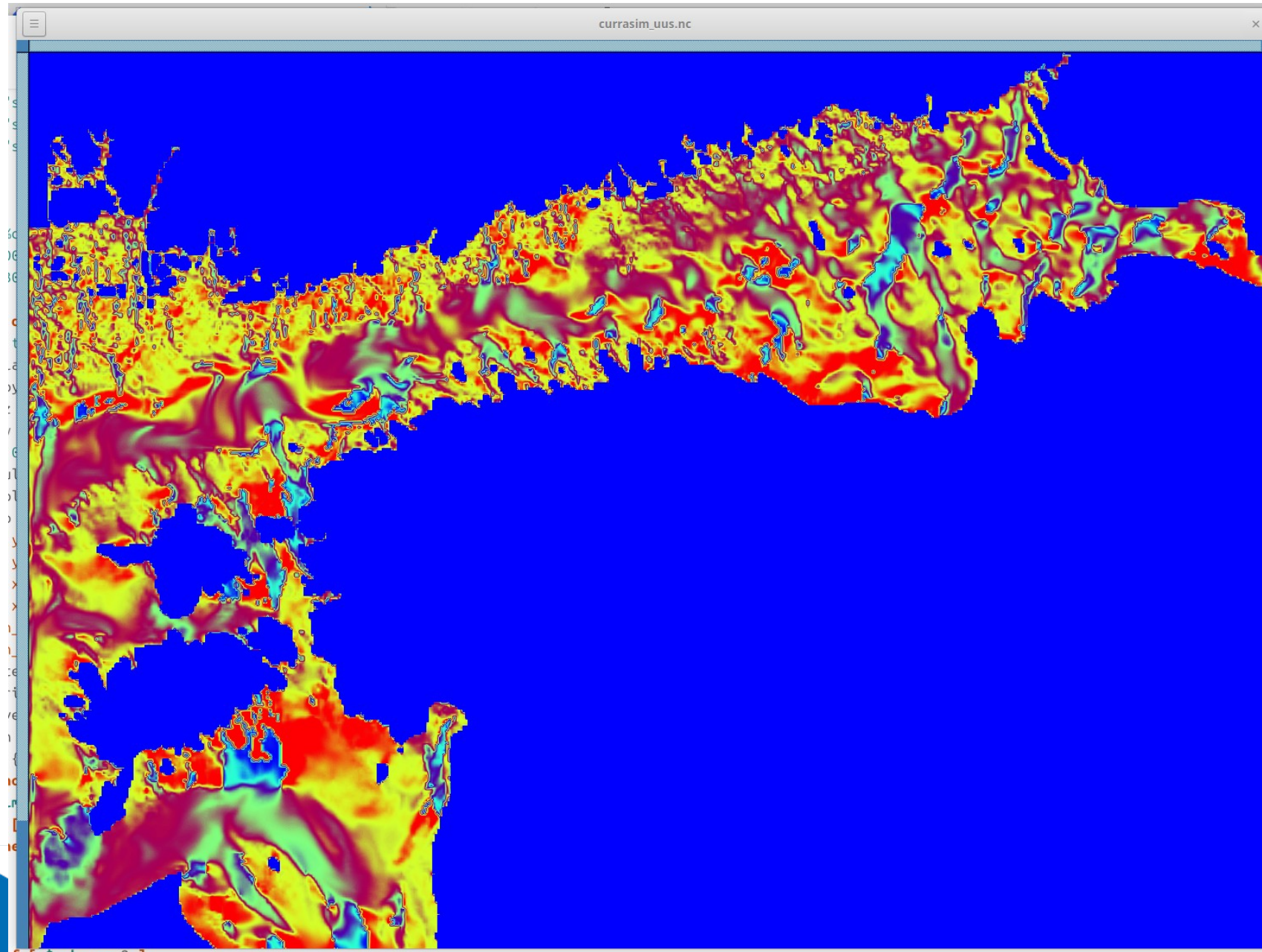
Nemo currents model E-W direction



Currents model : strength in knots



Currents model : direction 0-359 deg



S-104 ; S-111 production in Estonia

How the datasets are prepared :

No commercial software involved, only free and open source

Linux scripts using Gdal (Geospatial data library), GMT (Generic Mapping Tools) and Hdfql (Hdf query language)

The scripts work automatically in HIS (Hydrographic Information System) server .

Datasets are transferred to PRIMAR test environment also automatically



S-104 ; S-111 production in Estonia

S-104 workflow :

Nemo (SSH layer) -> XYZ file -> TIN from the XYZ (need to refine the model, as 1 km is too coarse) -> GRID at about 400 m resolution -> masking the GRID with land areas and EEZ border -> divide final GRID into 4 parts (in one part it was too big for PRIMAR) -> these parts to XYZ files -> reverse the XYZ (because S100 grids start from lower left corner, not upper left) -> Add metadata to XML -> using Hdfql create hdf5 files from XYZ and metadata -> create dataset from hdf5 files and metadata.



S-104 ; S-111 production in Estonia

S-111 workflow :

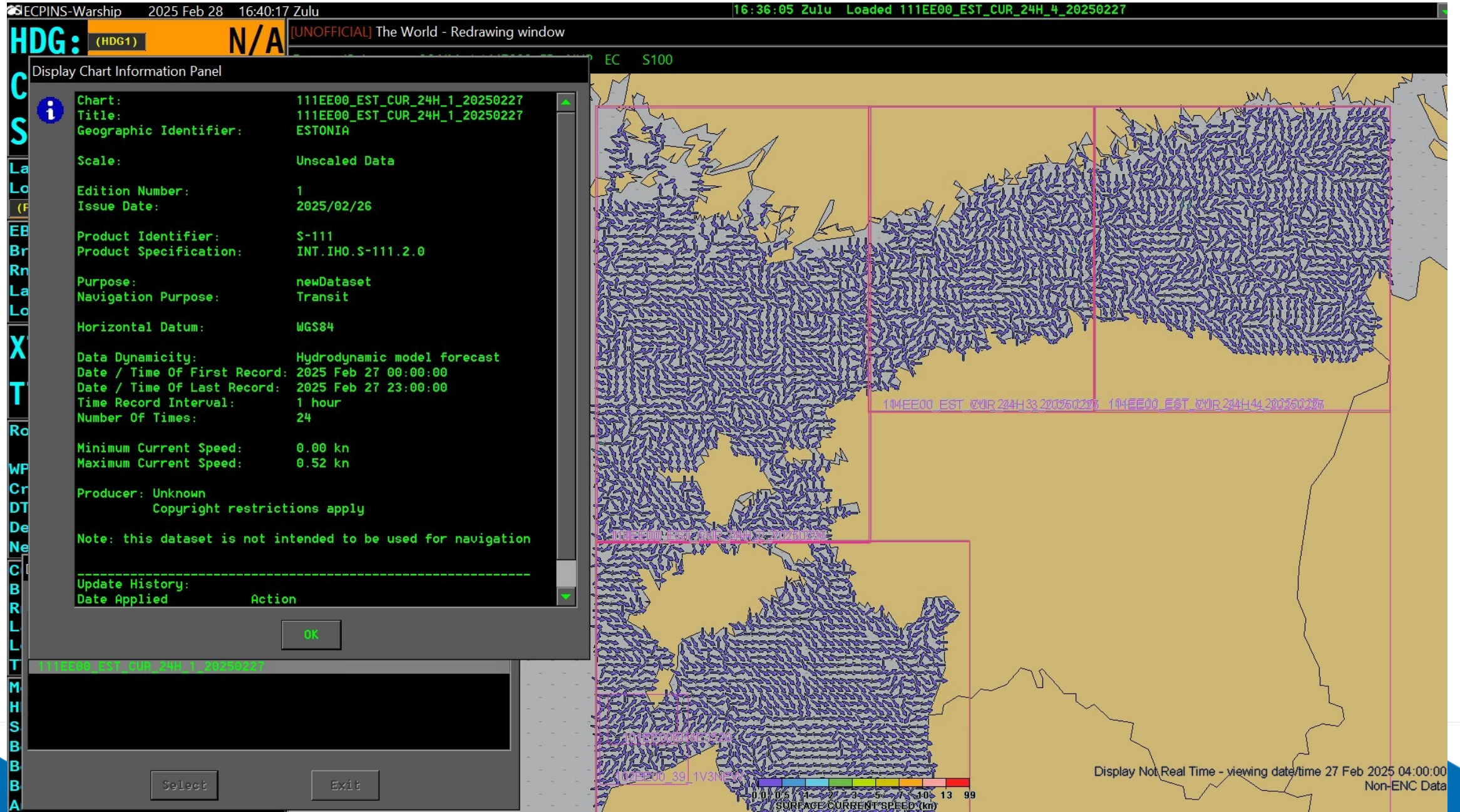
Nemo (SSU and SSV layers) -> create strength (HYPOT) and direction (ATAN2) grids from the SSH and SSV -> masking the grids with EEZ border -> divide the grids into 4 parts (in one part it was too big for PRIMAR) -> these parts to XYZ files -> reverse the XYZ (because S100 grids start from lower left corner, not upper left) -> direction file from ± 0 -180 deg to 0-359 deg -> Add metadata to XML -> using Hdfql create hdf5 files from XYZ and metadata -> create dataset from hdf5 files and metadata.



S-104 ; S-111 production in Estonia

Nimi	Suurus	Liik	Muutmise kuupäev	Nimi	Suurus	Liik	Muutmise kuupäev
✓ S-104	--	Kaust	N 02 jaan 2025 09:47:56	✓ S-111	--	Kaust	N 02 jaan 2025 09:49:49
✓ DATASET_FILES	--	Kaust	N 02 jaan 2025 09:48:04	✓ DATASET_FILES	--	Kaust	N 02 jaan 2025 09:49:55
✓ EE00	--	Kaust	T 18 märts 2025 12:51:57	✓ EE00	--	Kaust	T 18 märts 2025 12:55:55
104EE00_EST_WL_24H_1.H5	2,0 MB	Dokument	T 18 märts 2025 12:51:47	111EE00_EST_CUR_24H_1.H5	3,3 MB	Dokument	T 18 märts 2025 12:55:49
104EE00_EST_WL_24H_2.H5	2,0 MB	Dokument	T 18 märts 2025 12:51:51	111EE00_EST_CUR_24H_2.H5	3,1 MB	Dokument	T 18 märts 2025 12:55:51
104EE00_EST_WL_24H_3.H5	1,8 MB	Dokument	T 18 märts 2025 12:51:54	111EE00_EST_CUR_24H_3.H5	2,1 MB	Dokument	T 18 märts 2025 12:55:53
104EE00_EST_WL_24H_4.H5	1,8 MB	Dokument	T 18 märts 2025 12:51:57	111EE00_EST_CUR_24H_4.H5	2,8 MB	Dokument	T 18 märts 2025 12:55:55
CATALOG.XML	10,9 kB	Märgistus	T 18 märts 2025 12:51:57	CATALOG.XML	10,7 kB	Märgistus	T 18 märts 2025 12:55:55

S-111 in PRIMAR test ECDIS



S-104 ; S-111 production in Estonia

Way on :

Currently both datasets are uploaded to PRIMAR test environment, each new edition replaces the old one (edition numbers are increasing).

Plans to move to production environment – S-104, S-111 and S-102, so they can be used under PRIMAR licenses.

Only obstacle right now – we have not yet set prices to the datasets : it is needed for the production environment.

Signatures are not really needed, PRIMAR adds their one.



Thank you !

