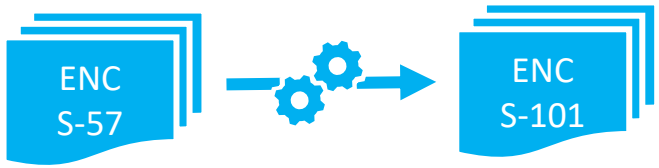
# Transition to S-100 with CARIS

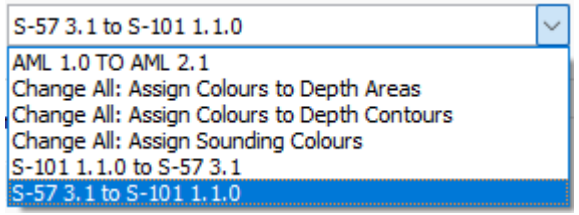
# Content

- Migration to S-100
- Key functionality
  - Mapping
  - Validation
- Other S-100 based product support
- Automated paper chart production
  - AutoChart

# S-100 migration and production

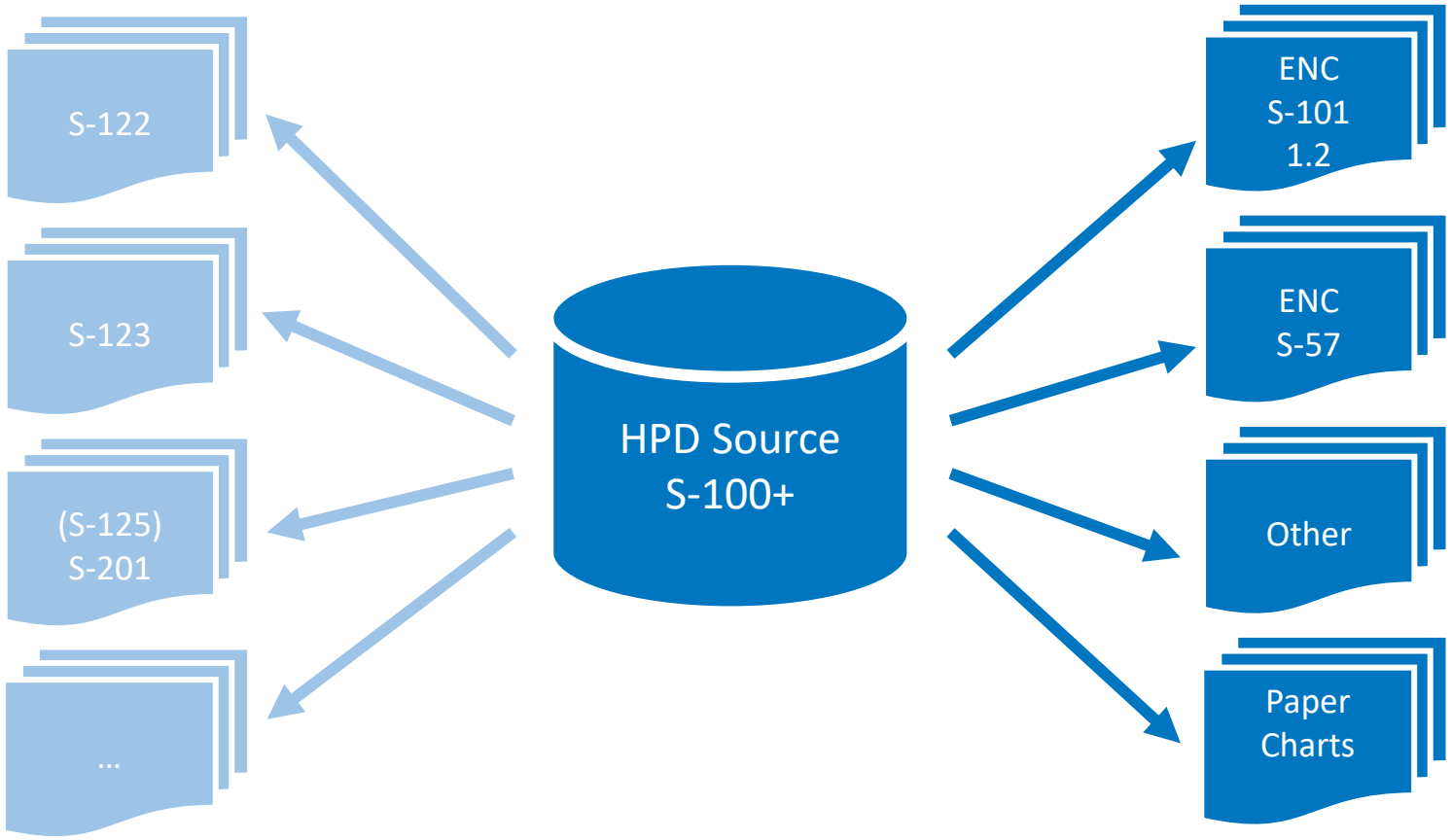
1. Create S-101 from existing data and products
   - Quick and easy using S-100 Composer or HPD
   - Good for testing and to get familiar with S-100/S-101
     - Also since S-101 specification still is under development




2. Migrate source database to S-100/S-101
   - Convert HPD Source database from S-57
   - Supporting existing products plus new S-100 products
   - Maintain history
     - S-57 features remain as historic data – with link from new S-100 features

# Available Now – Multifuel production




**Source data based on S-100 ed.5 (S-101 v2.0)**

**Supporting production of existing and new products**

# Migration steps

## Step 0 - Current/old Situation – S-57 based

## Step 1 - Add S-100 Feature Catalogue

HPD can now contain both S-57 and S-100 features

## Step 2 - Migrate Source data from S-57+ to S-100+

Maintaining S-57 source as historical data

## Step 3 - Add mapping/conversion for S-57 based products

Maintain/update existing S-57 based products

Including paper charts based on S-57

## Step 4 - Add S-100 Product Definitions

HPD can now produce S-100 products (e.g. S-101)

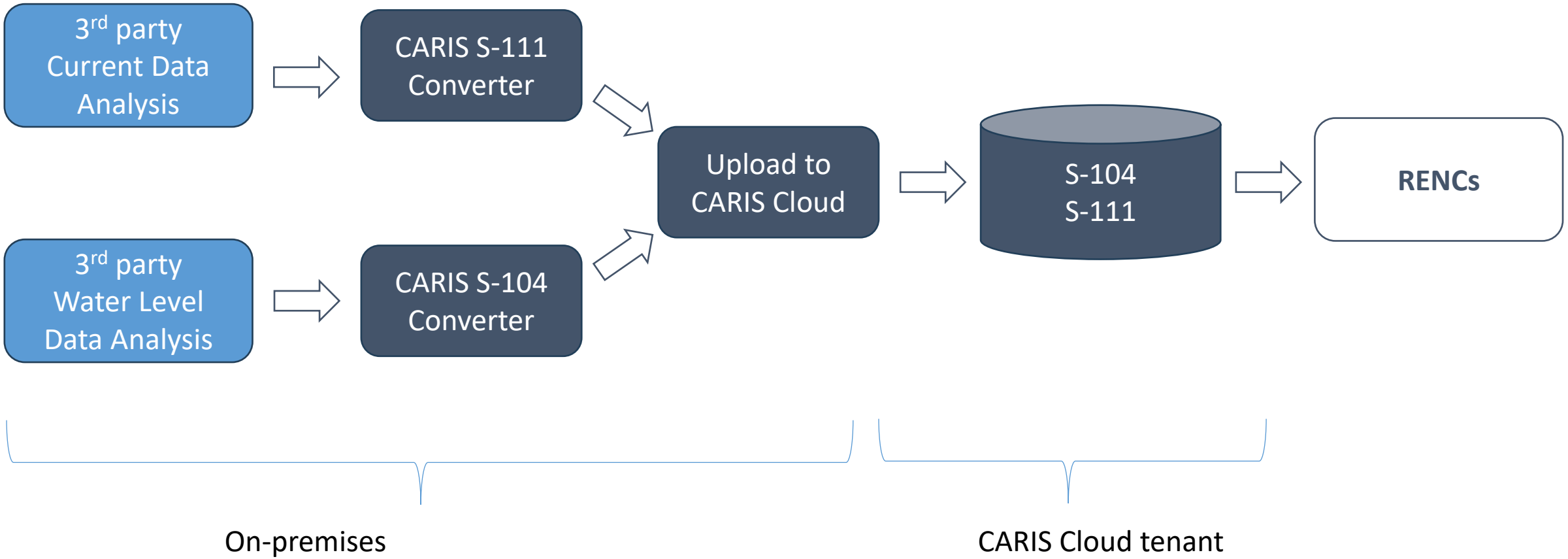
## Step 5 - Add more S-100 product definitions

HPD can now create and maintain more S-100 products

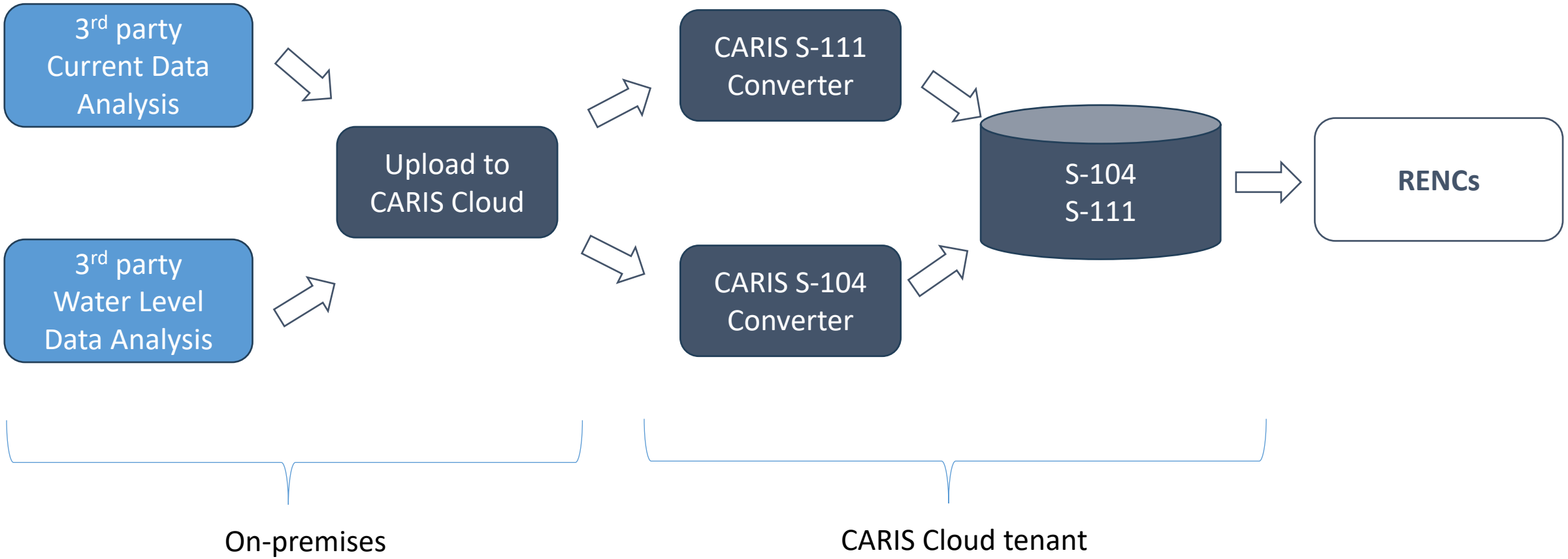
# Gridded S-100 production tool

- CARIS BASE Editor / BDB Manager with S-100 module
  - Maintain gridded **S-100** products (S-102) encoded in hdf5 format
  - Include S-100 Exchange Set Editor to create & edit **S-100 exchange sets**
  - Process to export to S-102 v3.0
  - Open S-104 & S-111 coming soon

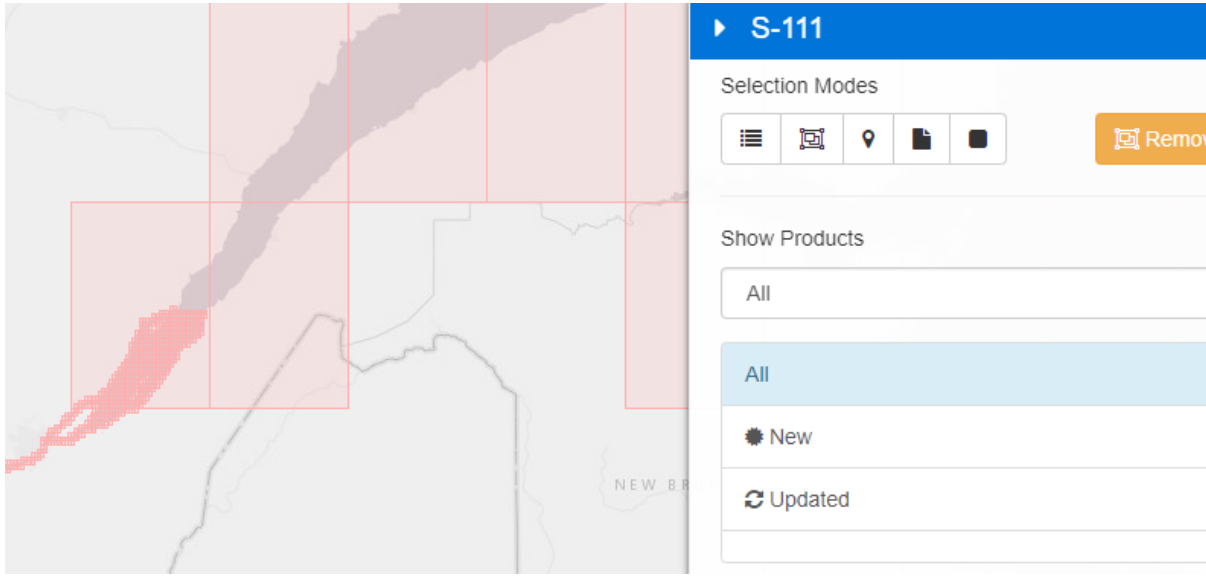
# S-104 & S-111 in CARIS Cloud



# S-104 & S-111 in CARIS Cloud



# S-104 & S-111




**S-104 & S-111 Converter**

- COTS functionality to export to HDF5
- Tailored code to import Current and water level data
- On-premises or in CARIS Cloud tenant

**Dissemination**

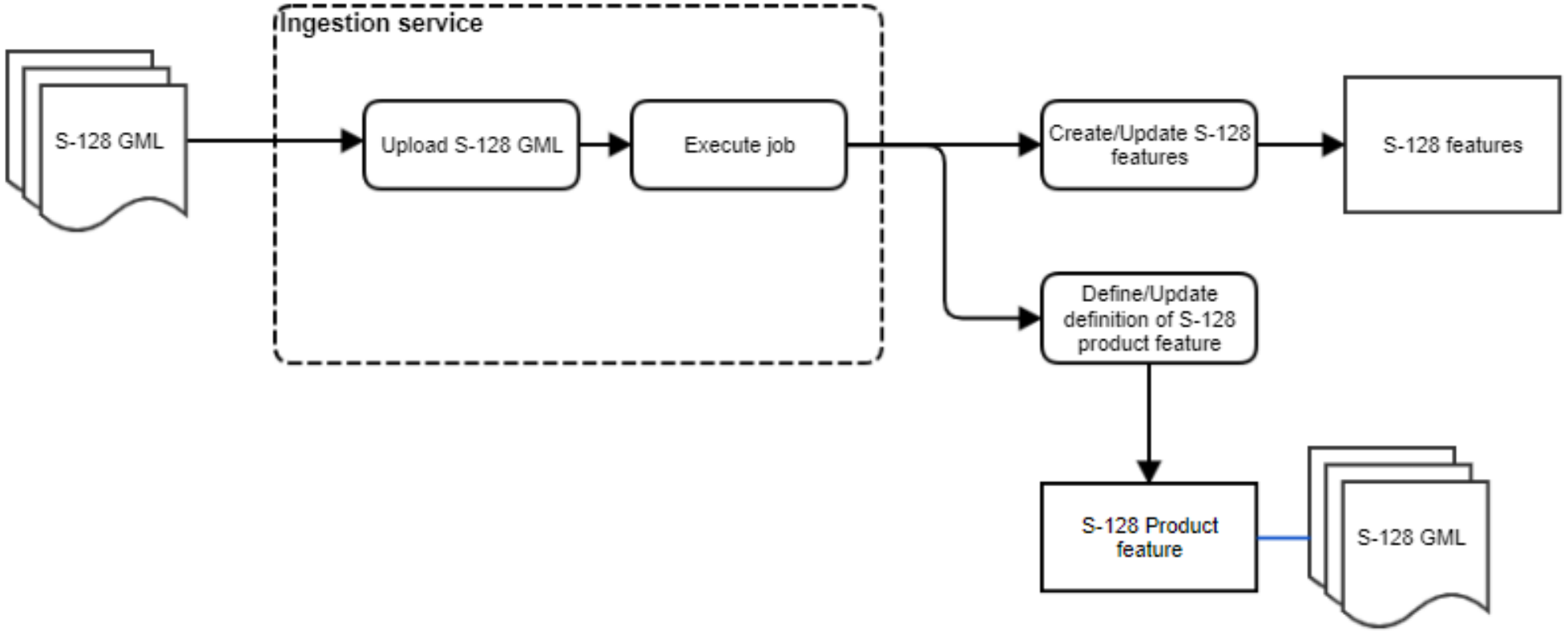
- COTS function included in **CARIS Cloud Bathy Data Service**

**Viewer**

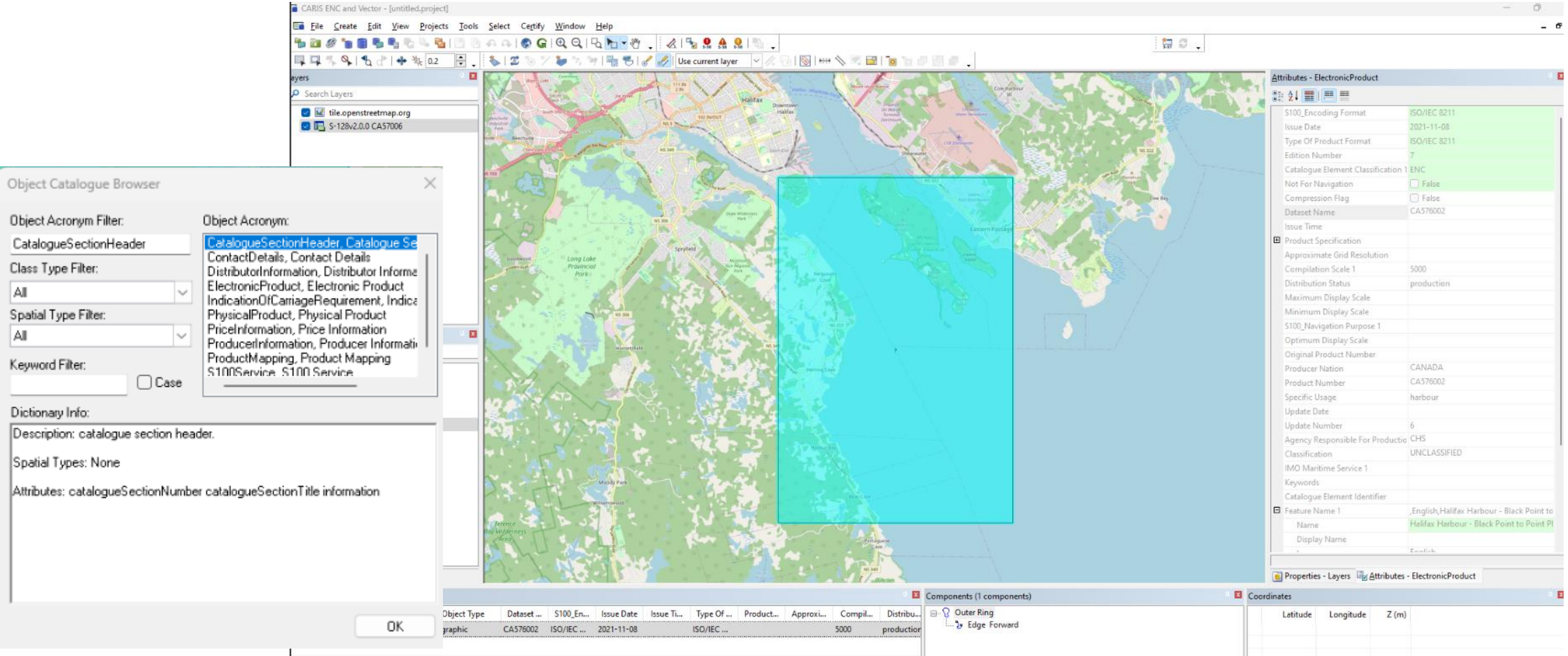
- Desktop CARIS tools (EasyView, BASE Editor, HPD Editors)

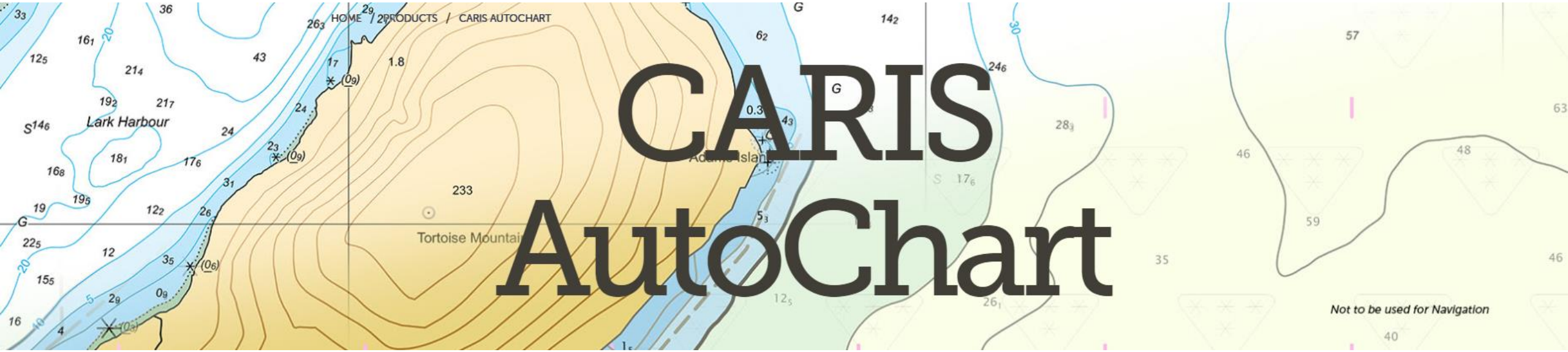
# S-128 Catalogue of Products in CARIS Cloud

- In development: Functionality to import S-128 products in a CARIS Cloud tenant
  - Extract ElectronicProduct, PhysicalProduct, S100Service



# S-128 in HPD & S-100 Composer



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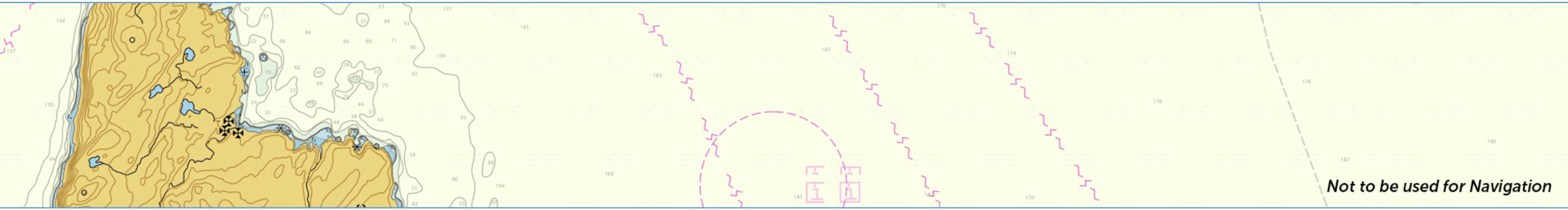
# CARIS AutoChart

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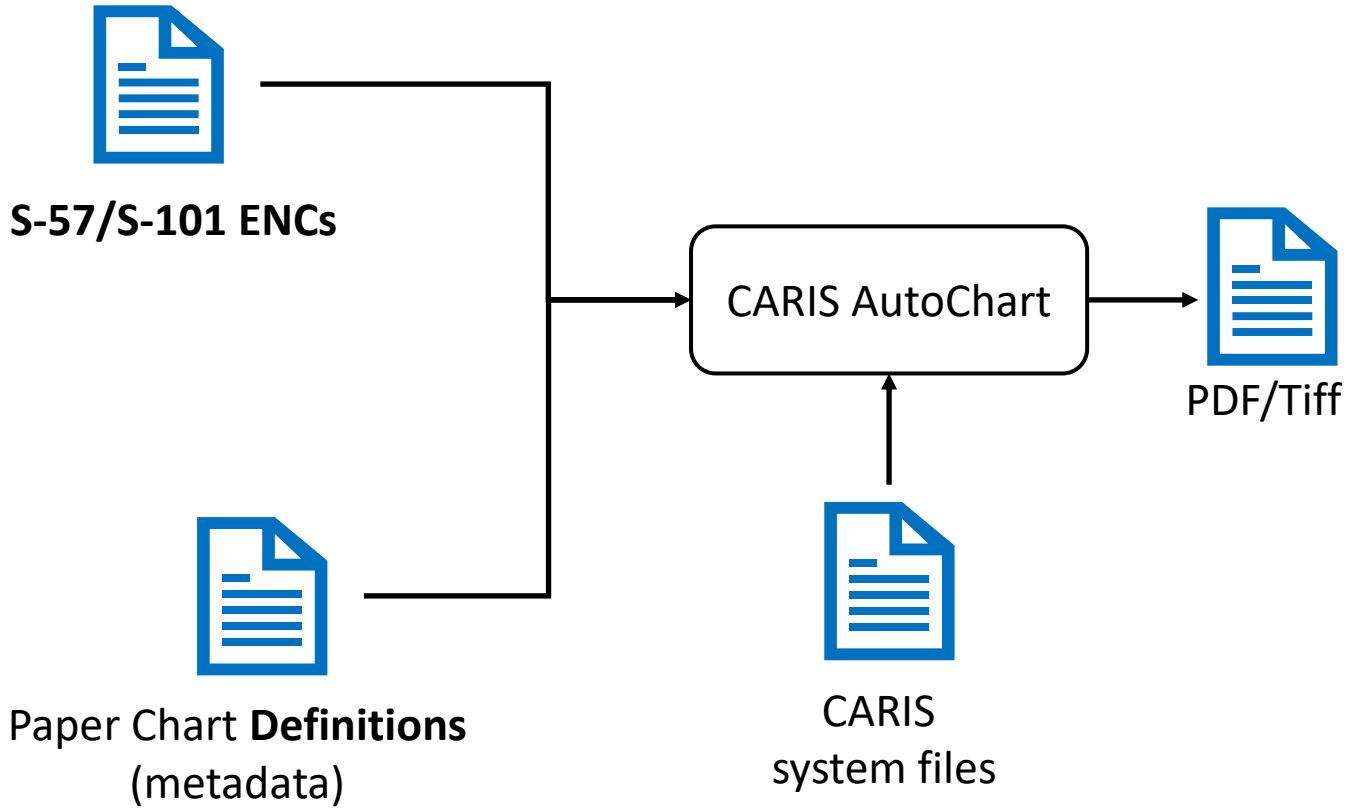
- Automate and streamline the nautical paper chart production workflow
  - Reduce Nautical Paper Chart Production Turnaround Time
  - Free up resources
  - Maintain Your Paper Chart Look and Feel

# What is CARIS Automated Chart Production?

- Automated production of paper charts
  - Several possible **Inputs**:  **S-57/S-101 ENCs**, HPD Source or HPD Products
  - PDF/TIFF output disseminated using CARIS Cloud Chart Data Service



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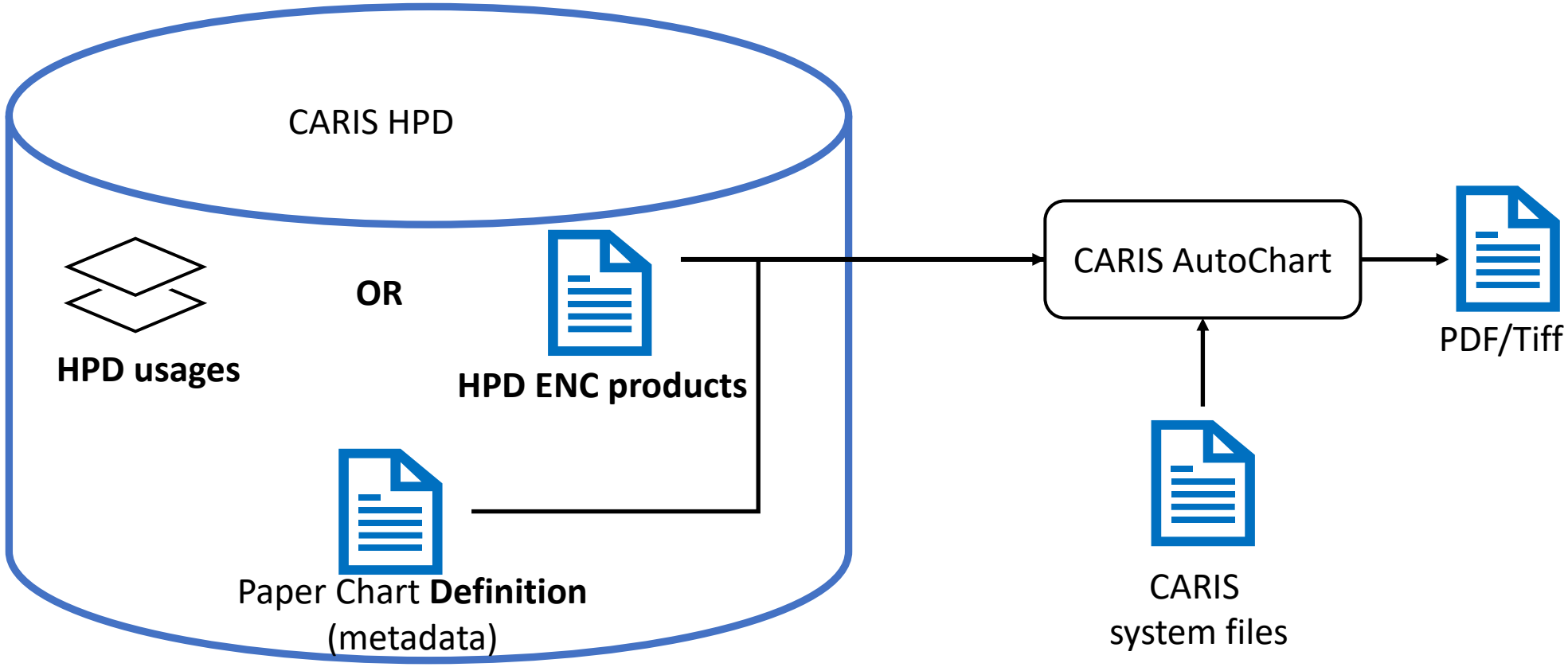

# From ENC data to IHO S-4 standard paper chart

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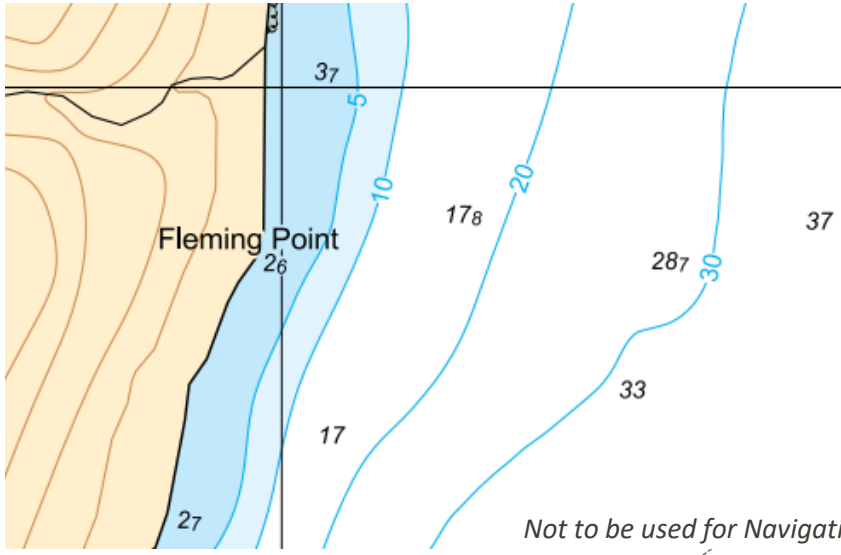



Sequence of **mapping rules**

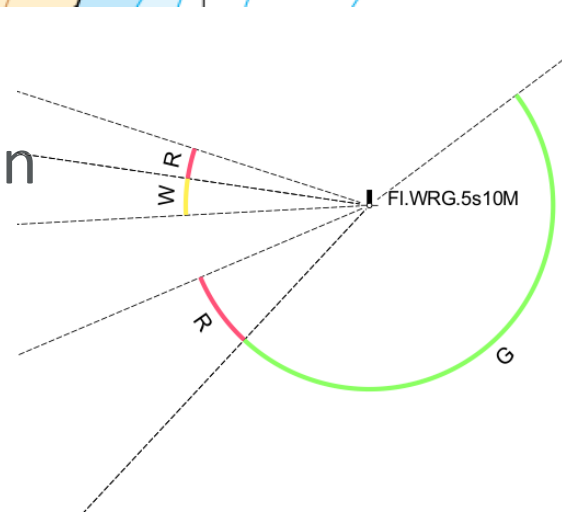
- Filter features not desired in the paper chart
- Add attribute information used by the symbolization
  - Extract information from collection attributes
  - Indicate an obstruction point is inside an obstruction area
  - Etc

**Annotation**

- Create placeholder or text features for the symbolization
  - Depth contour labels, light characteristics, …

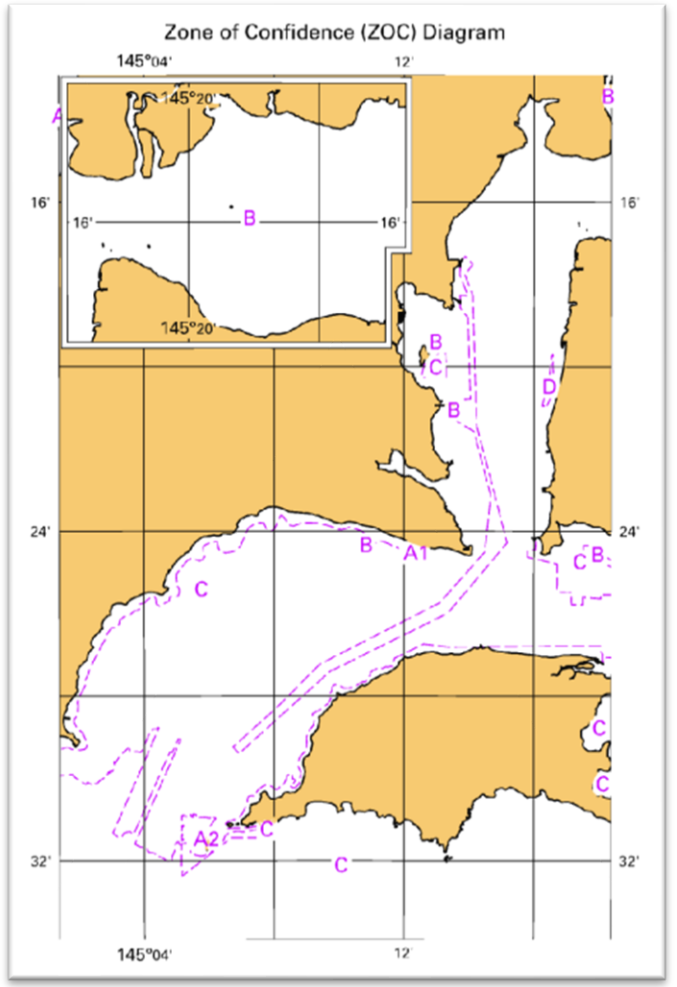
**Symbolization library**

- Rules to symbolize S-57 data according to IHO S-4
  - S-52 based rules and CARIS dynamic cartography rules

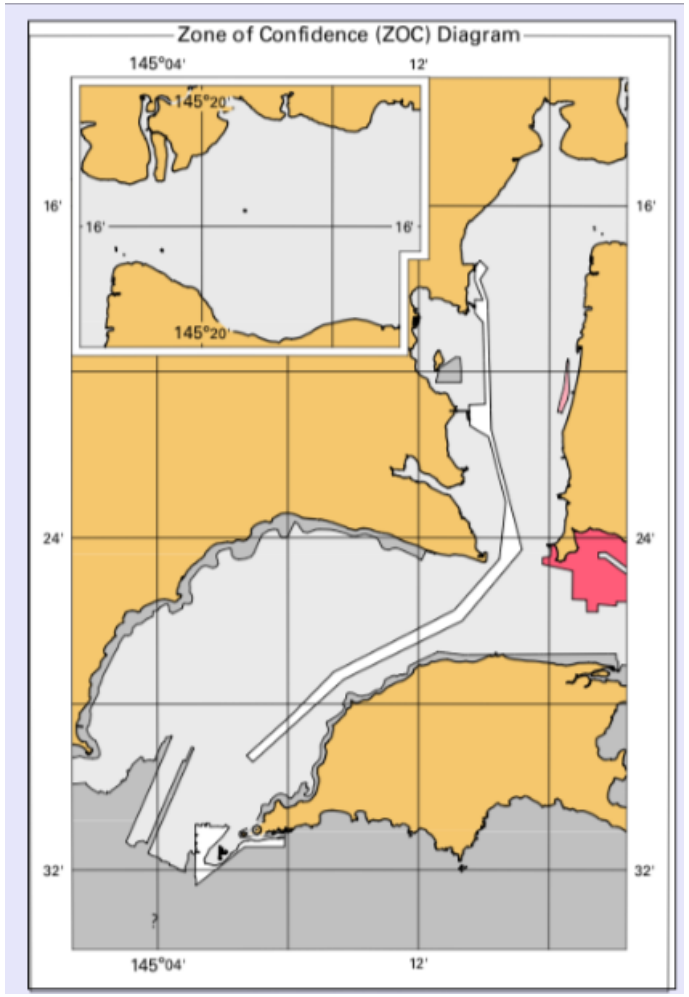


# Automated ZOC diagrams Creation

- ZOC diagram position specified in chart definition
- Customizable ZOC diagram configuration files
  - Feature catalogue, annotation, symbolization library, colours, marginalia style, border styles
- CARIS AutoChart generates automatically the ZOC diagram



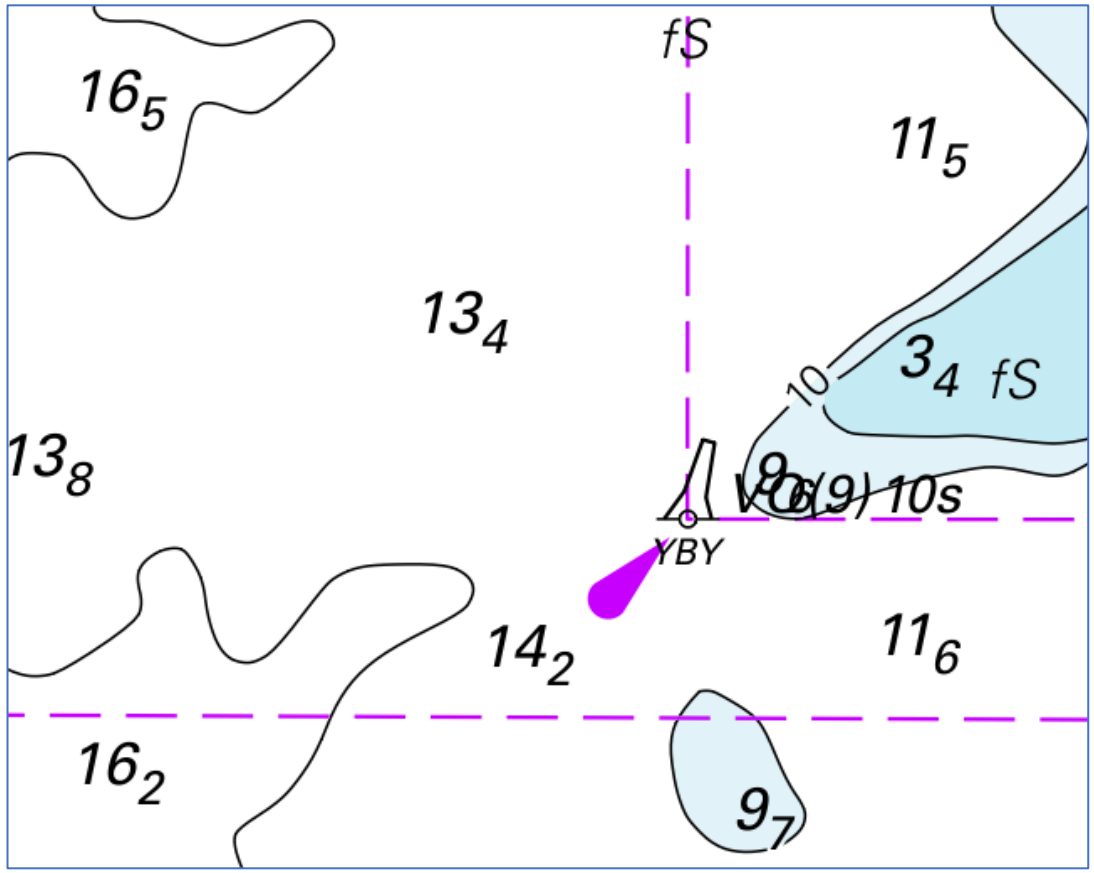

ZOC diagram with labels



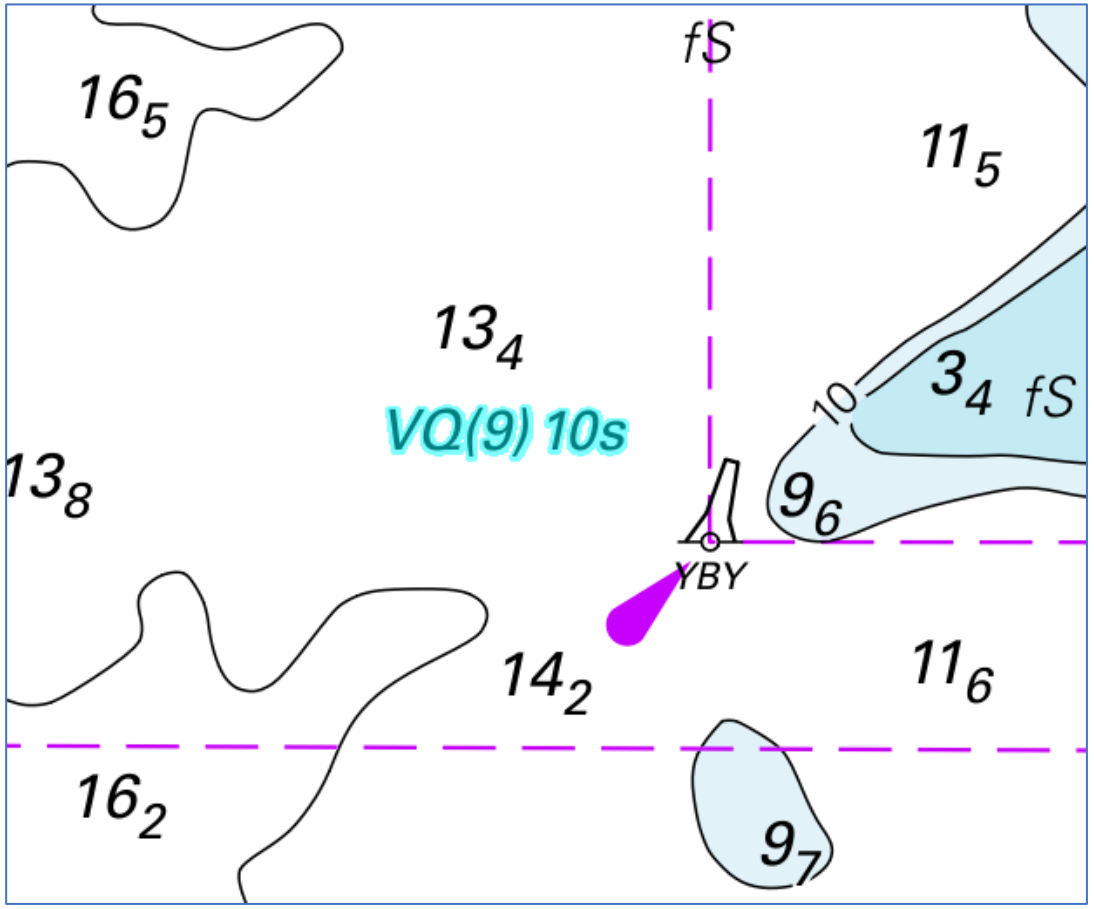

ZOC diagram with colours

# Label placement - example

**Before**




**After**




- Available in the fully automated CARIS AutoChart workflow
- Also available as an AutoChart command line process to execute independently on usages or products

# AutoChart – User Interface: Export Updates

- Results – Block Corrections are created for the charts in PDF format


- Note
  - If no changes are detected no new block will be created
  - If there are too many changes and their extent will not fit on the block correction (A4 page layout), no block will be created – instead, use the new updated full chart that is created too

# Thank you!

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