

Teledyne CARIS perspectives on S-100

Juan Carballini



CARIS continue support for S-100!

- We are ready to support organizational adoption of S-100
- Embedded in standards development
- Trusted technology partner
- Access tools, training, and professional services



Collaboration & partnership

- Learn from each other - successes and failures!
- Coordinate efforts
- Leverage existing implementation approaches, workflows and infrastructure
- We all need to get there together for this foundation piece to be established

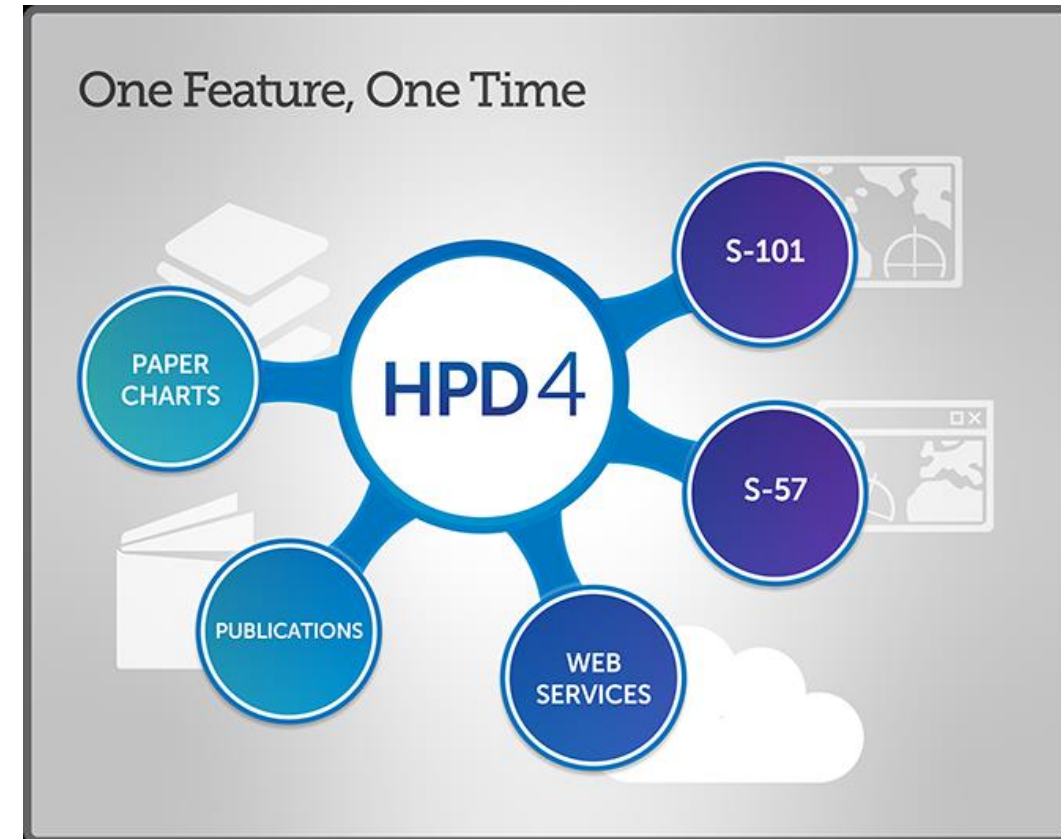


CARIS' Juan Carballini with S-100 workshop participants and SOHMA Authorities



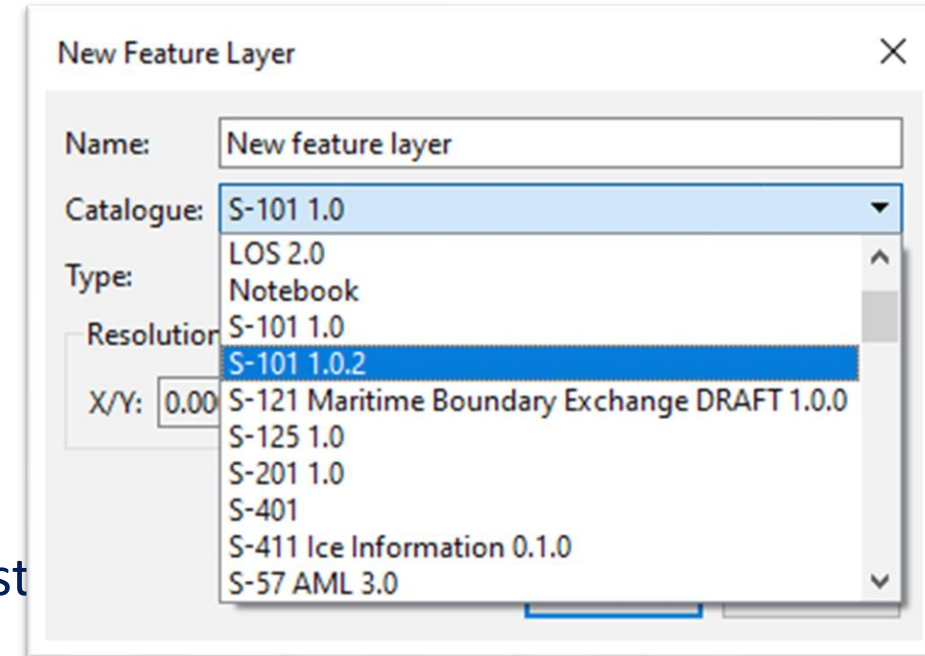
S-100 tools

- Enabling S-100 production
 - HPD needs the S-100 module
 - S-57 Composer needs the S-100 module per application instance.
- Once acquired, S-101 configuration is ready for use, with other specifications easily added to the product folio.
- BDB powers S-102 and other raster overlay product creation



S-100 tools

- S-100 module provides functionality to
 - Edit S-100 vector features
 - Convert S-57 ENC <-> S-101 ENC
 - S-100 vector HPD Source database
 - Export S-101 new editions and updates
 - Create and edit S-101 exchange sets
- BDB & CARIS Cloud provides
 - S-102 datasets
 - Bathy Data Service is the distribution pipeline to push raster ENC and other stakeholders
- Opening S-100 datasets are supported in all CARIS desktop applications

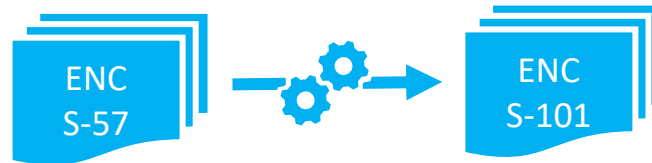


S-100 Migration

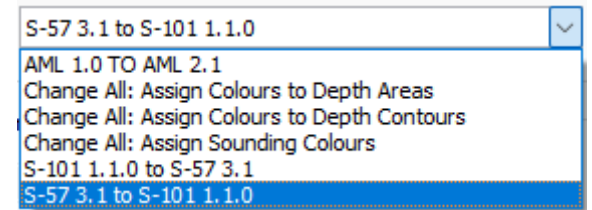
To S-101 and beyond

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



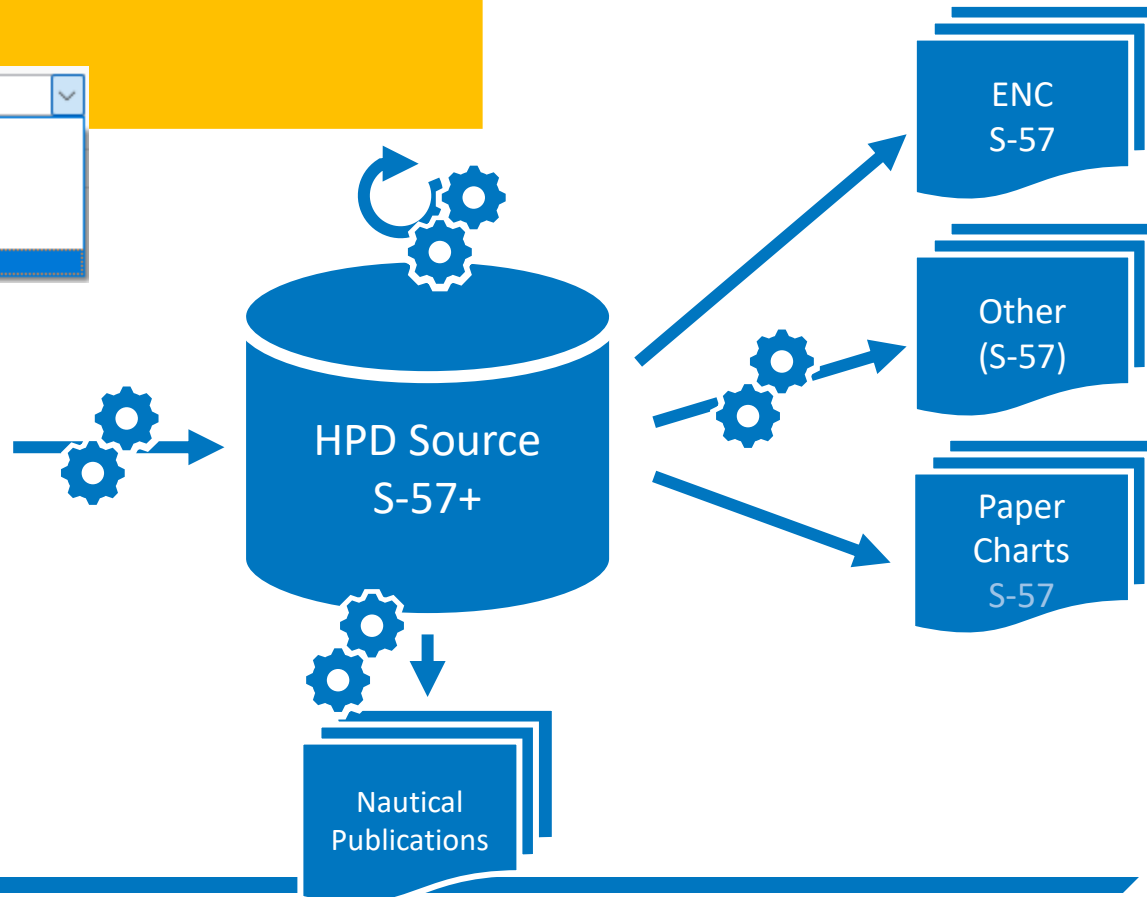
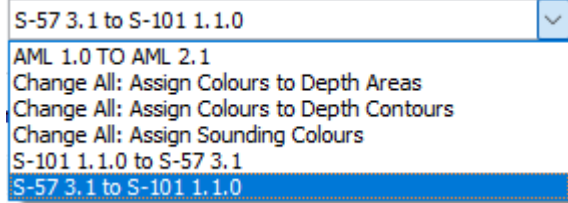
2. Migrate source database to S-100/S-101
 - Convert HPD Source database from S-57
 - Supporting existing products plus new S-100 products
 - Maintain history
 - S-57 features remain as historic data – with link from new S-100 features



Mapping to/from S-57 and S-101

Mapping available:

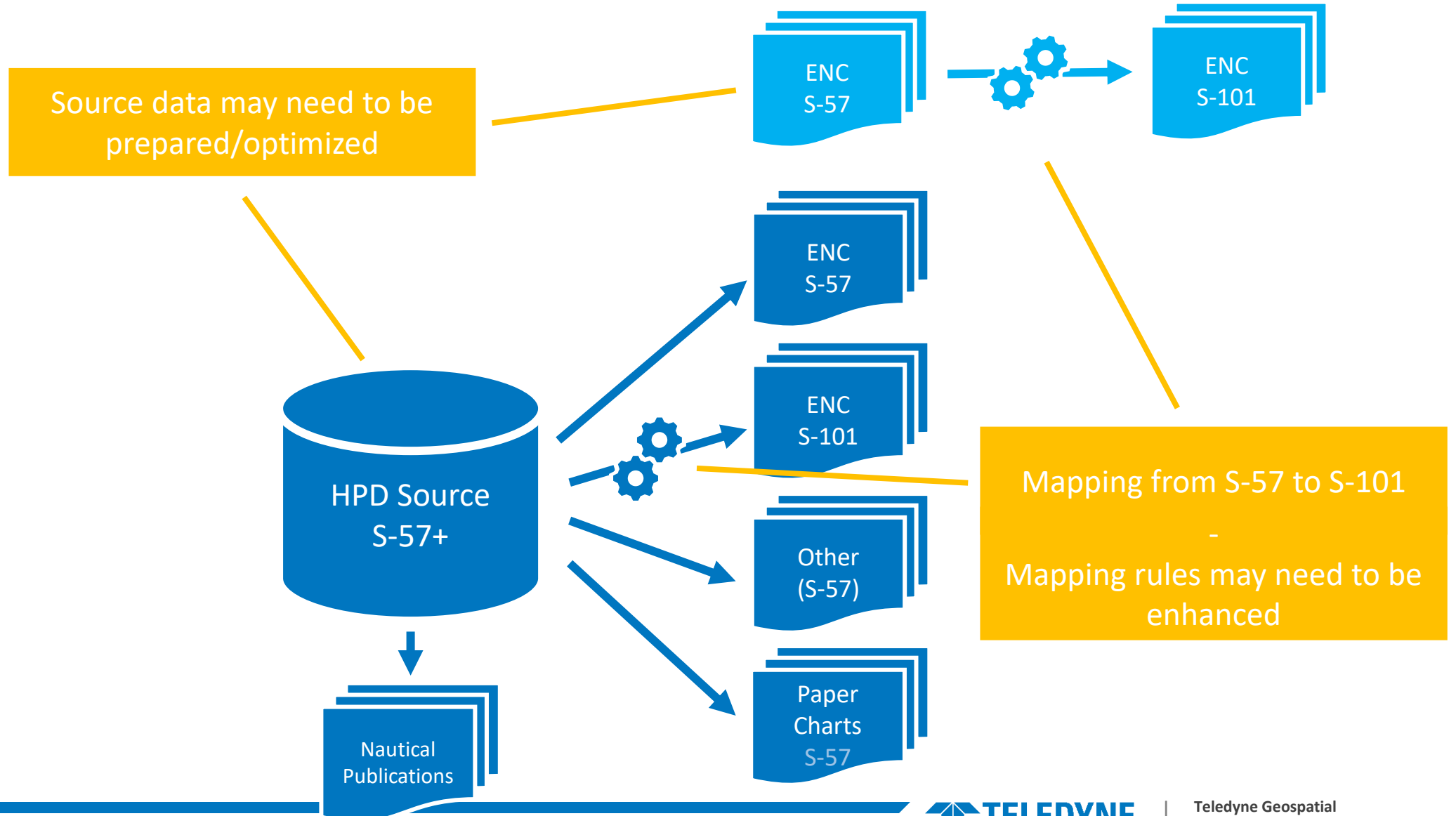
- During Import
- On existing (source and product) data
- During product creation and updating
- During export



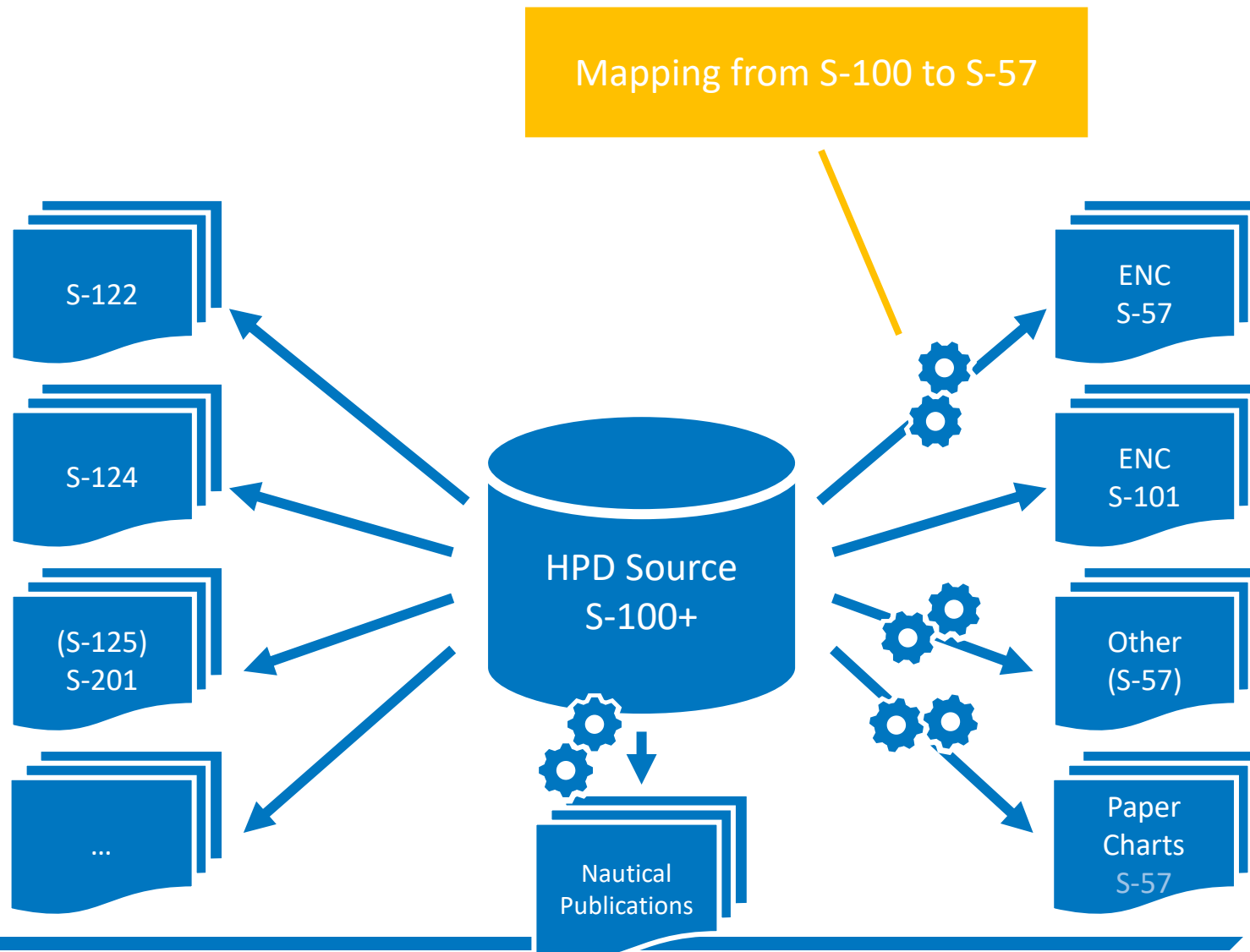
Setup mapping as part of product definition possible

–
Automatically used when creating and updating products

1. Producing S-100 from S-57



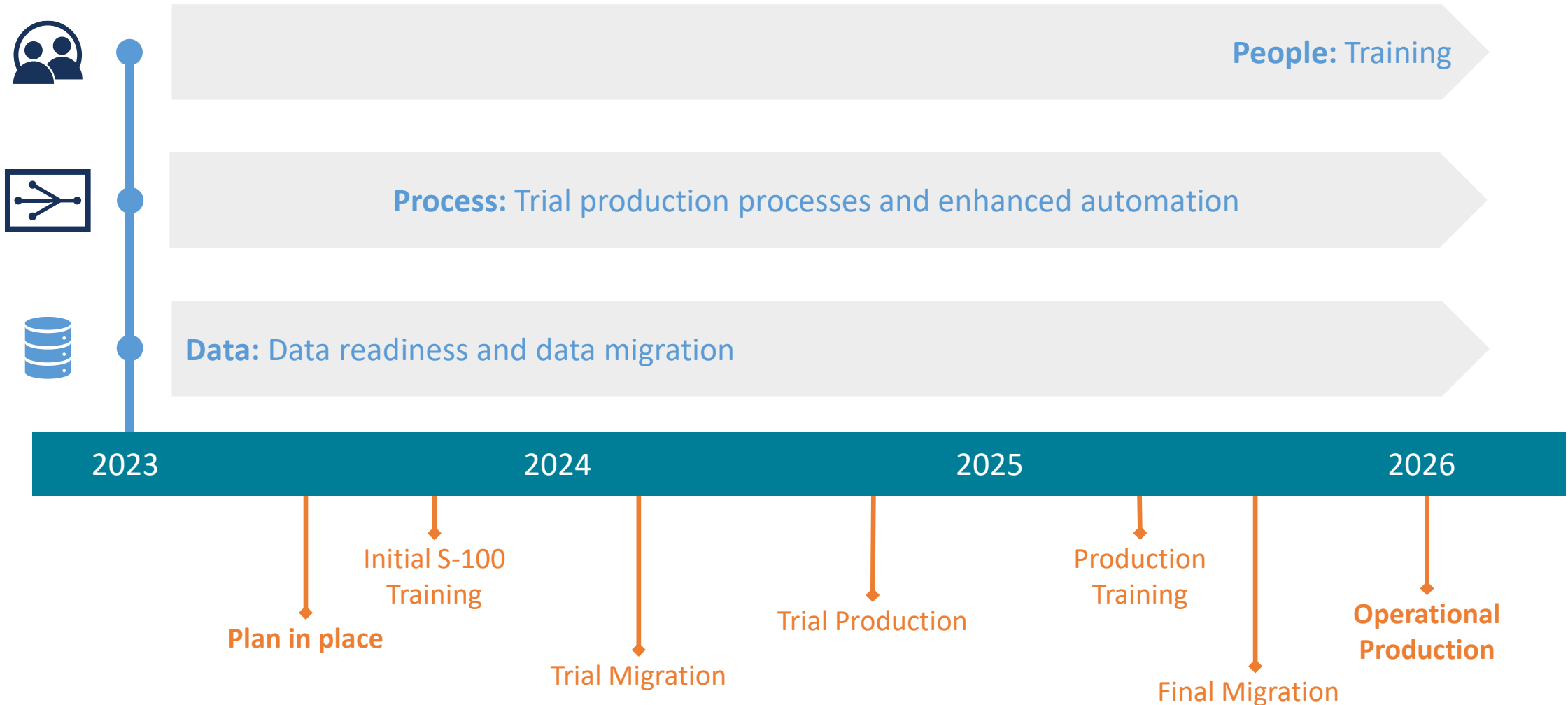
2. More products from S-100 Source



Also possible to add own/other products in CARIS

- Feature Catalogues are customizable
- Product definitions are customizable

Plan to achieve dual-fuel production

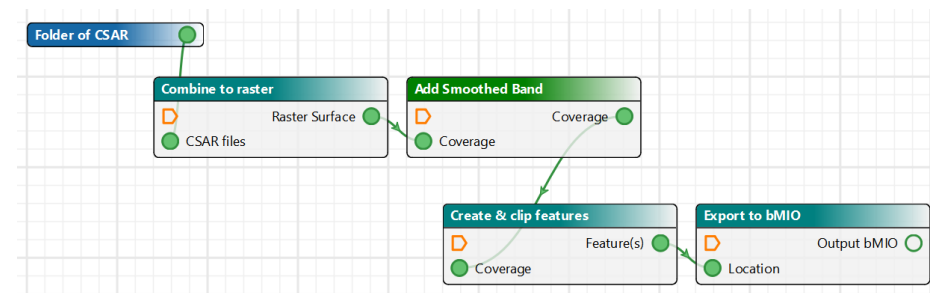
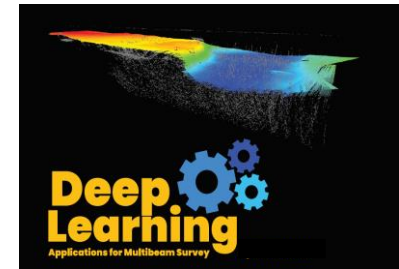


Automation

With more products – The more automation should be considered

Automation

- The goal is to have automation underpinning the entire Ping to Chart workflow
- Automate through:
 - APIs, Process Models and Batch processing
 - Process Server to manage and run CARIS and user defined processes
 - Use of AI techniques
- Benefits
 - Faster and repeatable results
 - On-demand products and services
 - Reduced human effort
 - Produce multi-disciplinary products



CARIS HPD ENC Automation

S-57 ENCs *and* S-101 ENCs

(*and other S-100 products*)

Automate ENC production and updating straight from HPD Source

- By-pass manual Editor steps – Reducing the need for HPD Product Editor
- HPD Builder license required

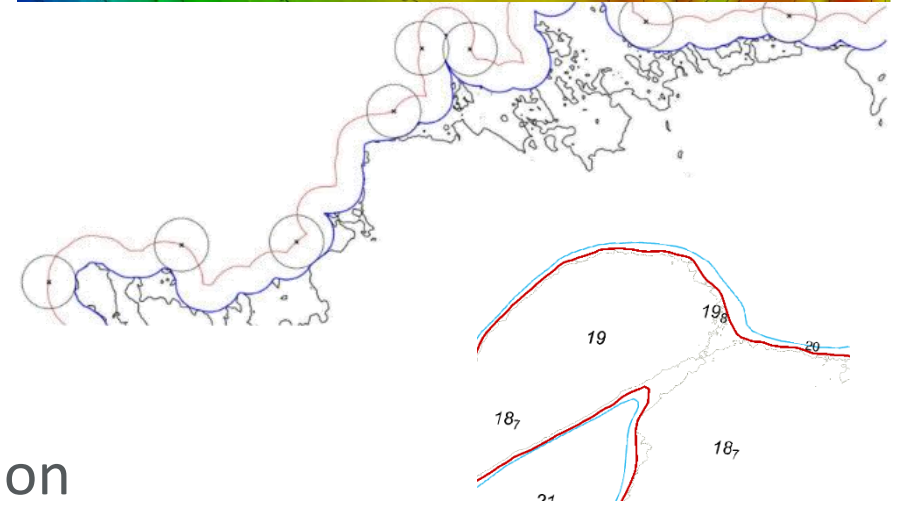
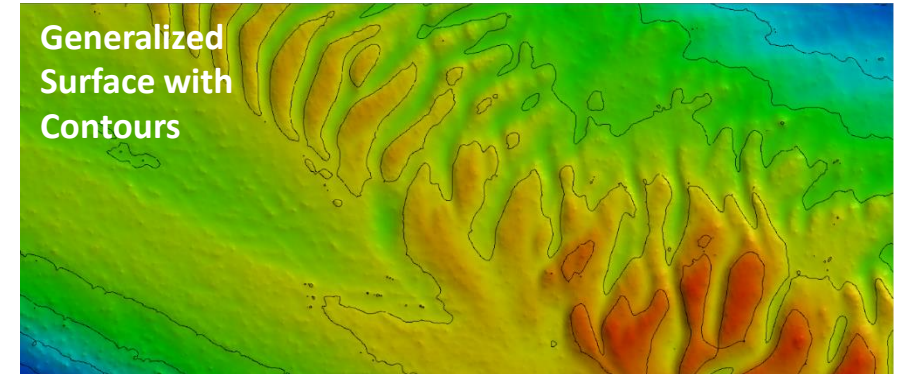
New set of CARIS Processes for ENC Automation

Supports the ENC lifecycle

- Create ENC products
- Update ENC contents
- Manage ENC contents
- Export ENC products
- Process ENC Exchange Sets

Bathy Compilation - Automate chart feature creation

- Produce contours that are ready for charting
- Generalize
 - Surfaces
 - E.g. using Rolling Coin algorithm Developed by the Traficom
 - Features
 - E.g. Contours using safe-side contour smoothing
- Sounding Selection
- Saved as S-57 (or S-101) features ready for production



Automated Paper Charts

Mix automated CARIS portrayal tools with workflow automation and webservices

Advanced (customizable) Portrayal capabilities

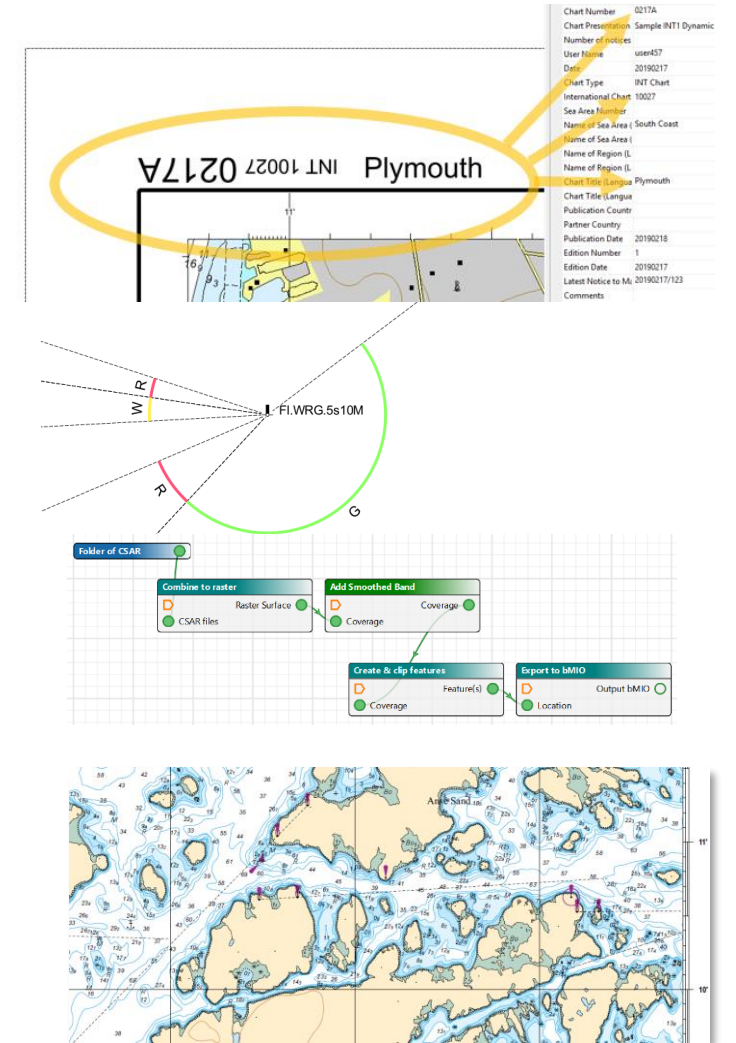
- Automatic INT1 portrayal of S-57/S-101 data
 - + New advanced dynamic portrayal capabilities
- Automatic feature labeling/text
- Automatic borders and marginalia
- Automatic masking
- ...

Automated processes/workflows capabilities

- Data from ENC's (S-57/S-101) or HPD source
 - I.e. same source data used for ENC's, INT charts, Small Craft Charts, List of Lights, etc.
- Automatic creation of updated products

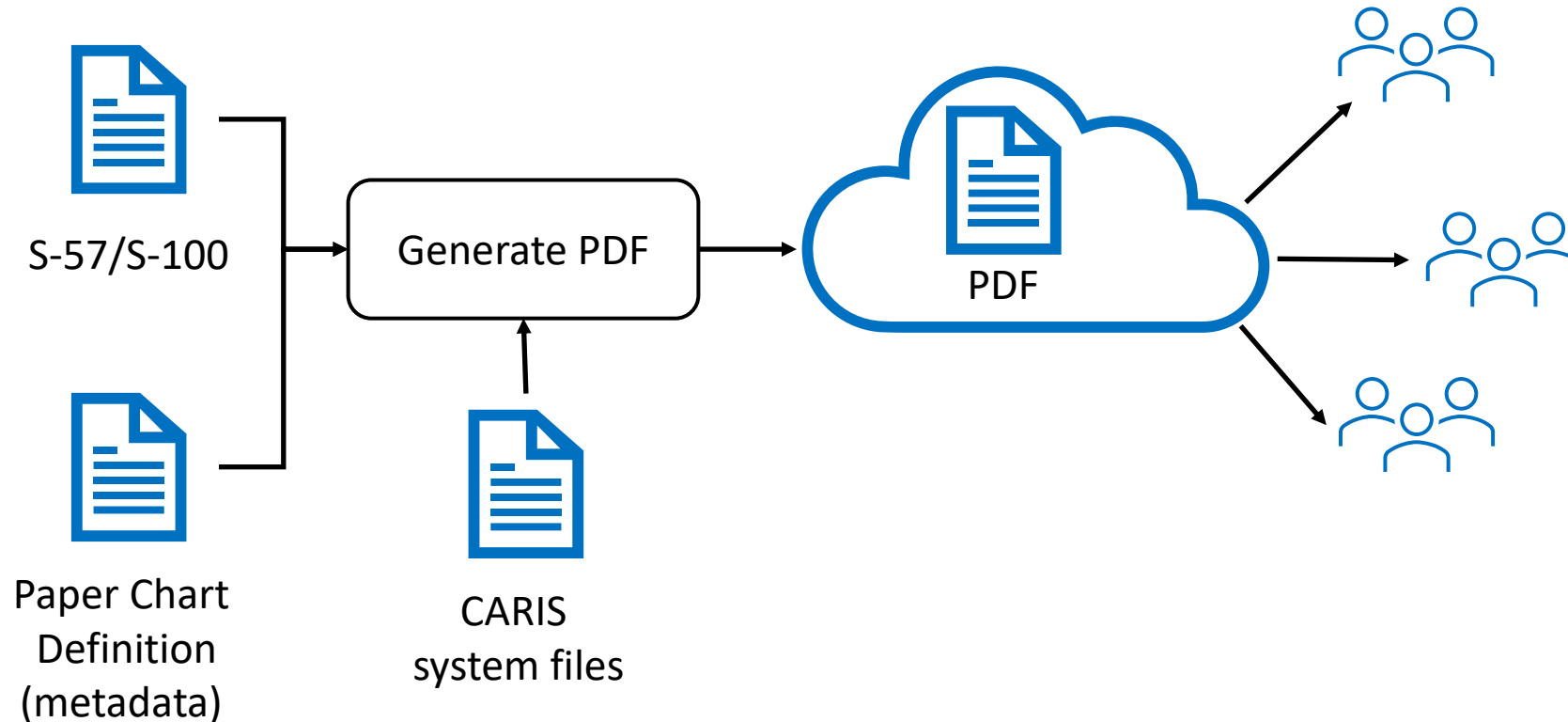
Webservice for the end users

- Controlled access to service
- Allow users to chose their chart and subscribe to updates



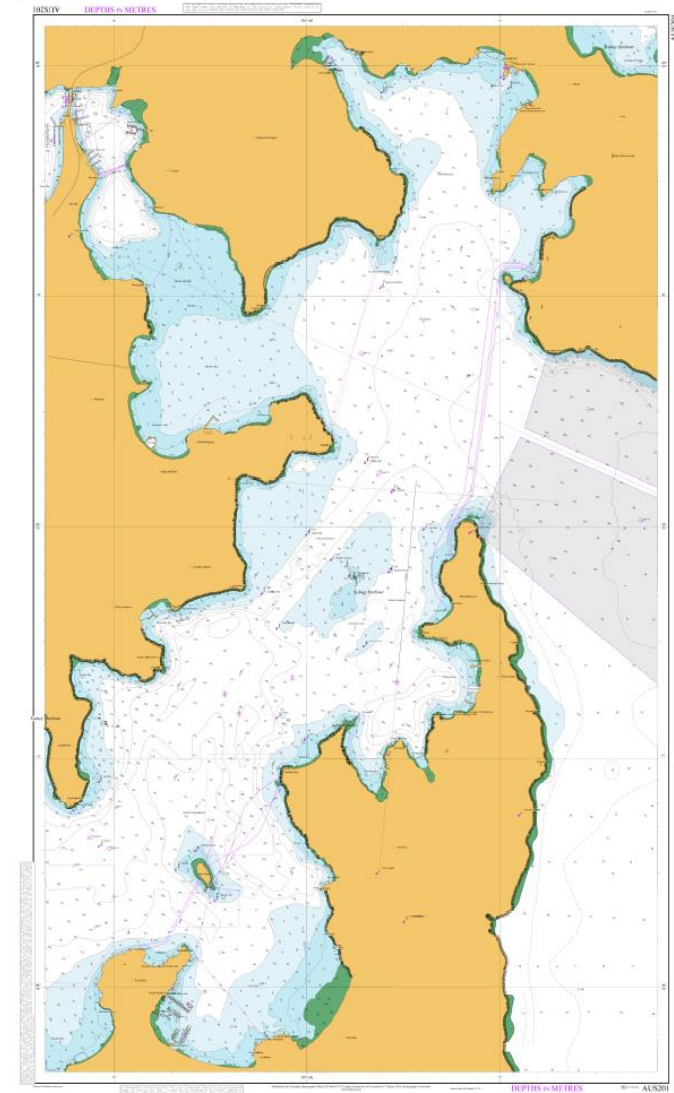
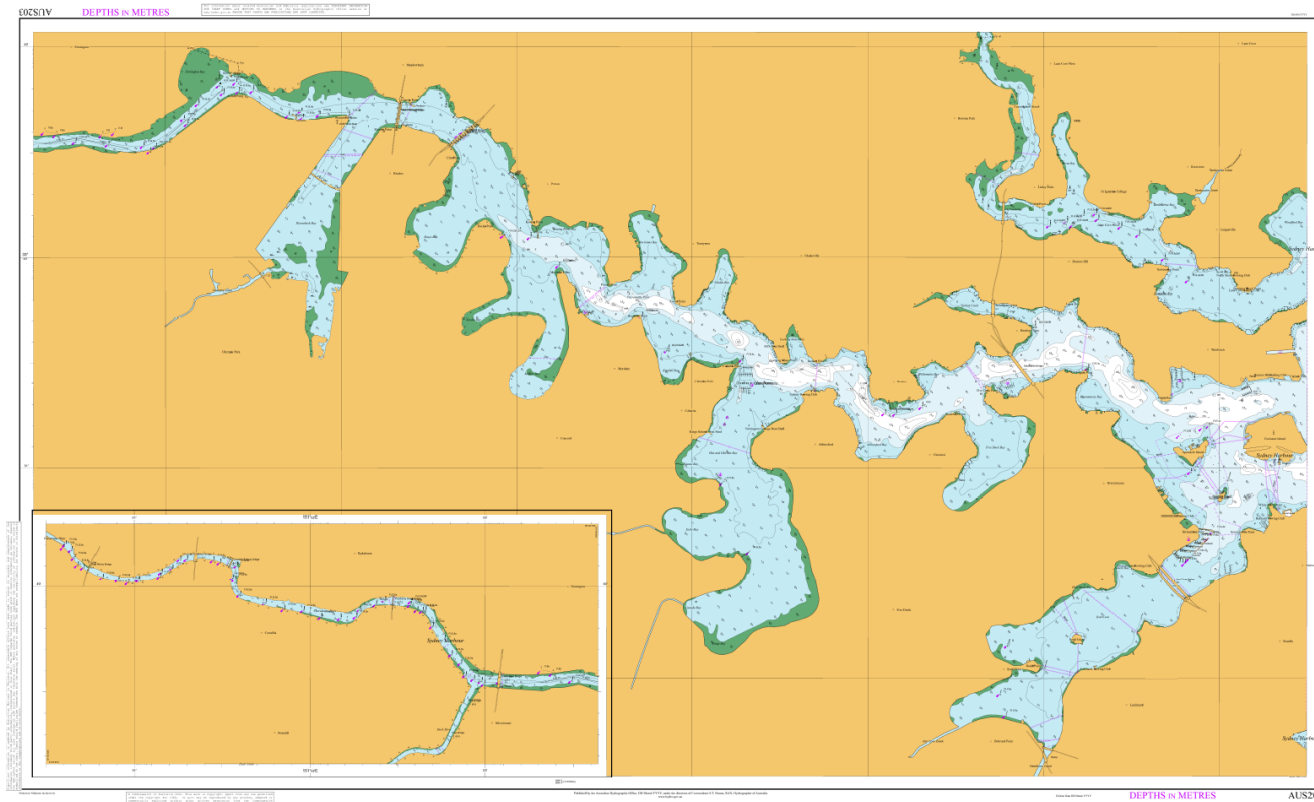
Product on Demand – Automatic paper chart creation

Utilizing CARIS' advanced automated (and customizable) portrayal rules



New development aiming at reducing manual work

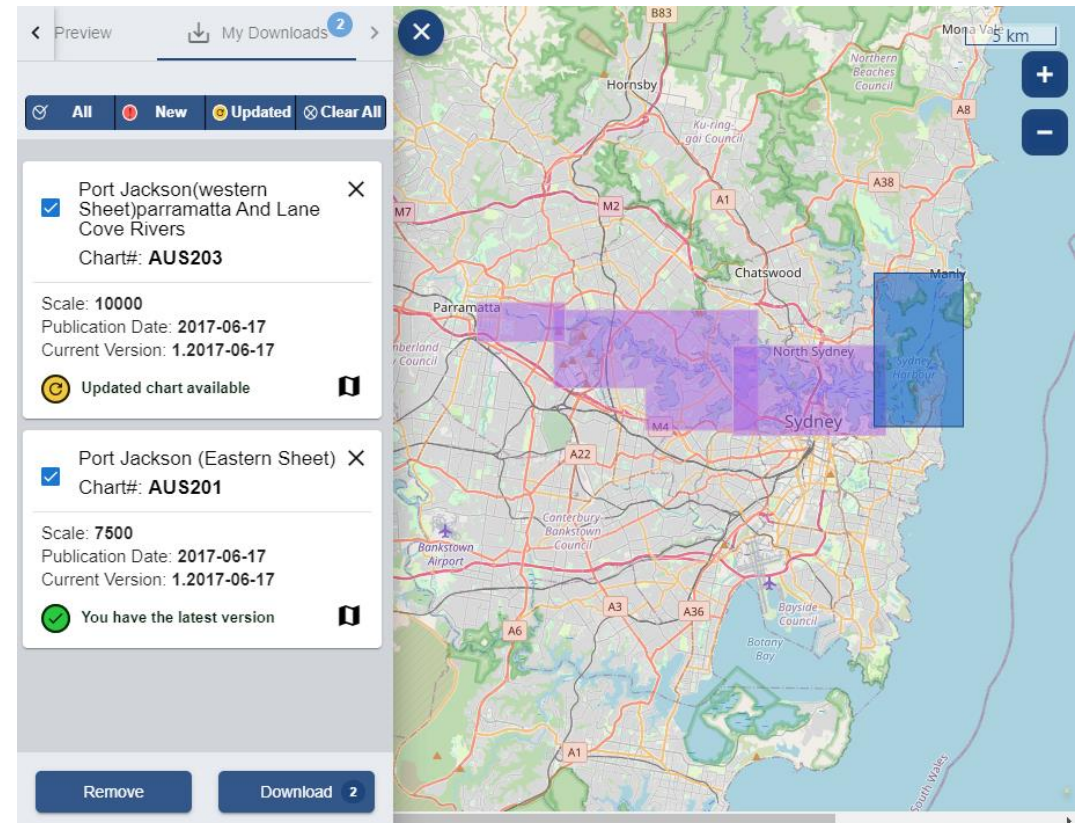
Using existing national colour and symbols



Self-service download

Possible to utilize HOs chart catalogue

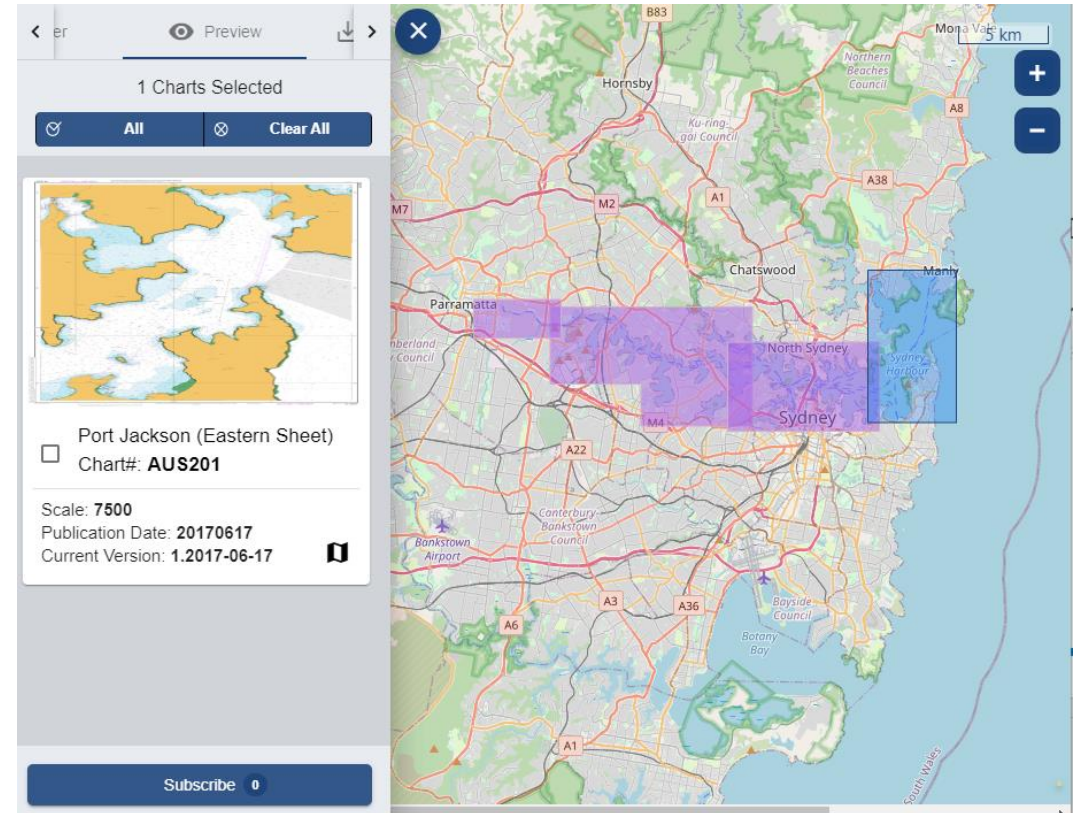
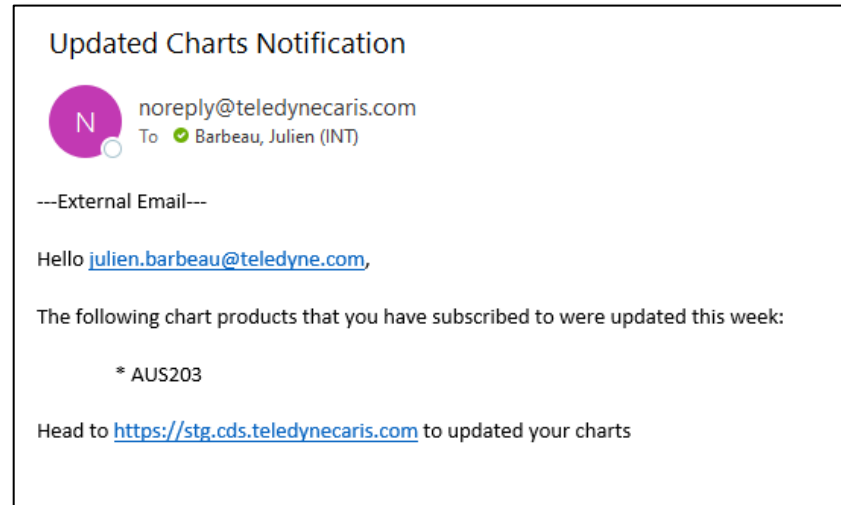
- E.g. use existing chart boundaries, scales
- Ensuring products are suitable for navigation



Users subscribe to products

Allowing users to subscribe to the charts

- Getting notified about updates



CARIS Cloud

Accelerate Delivery through Automation

Bathymetry, Currents, ENCs, Paper Charts & more

February 2023



CARIS Bathymetry Data Service

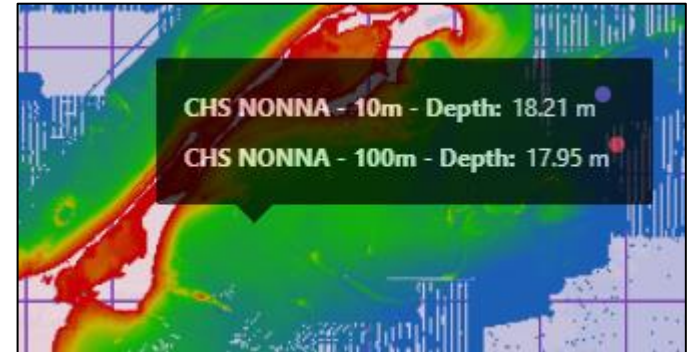
Cloud hosted service for data services

- Including OGC standard services WMS, WMTS, WCS, WFS

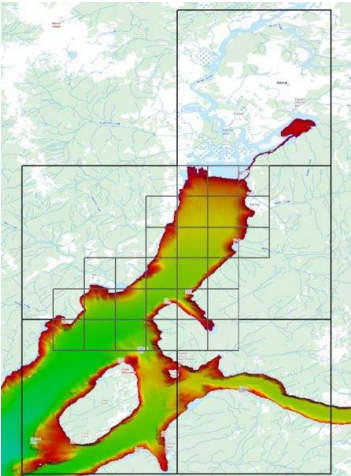
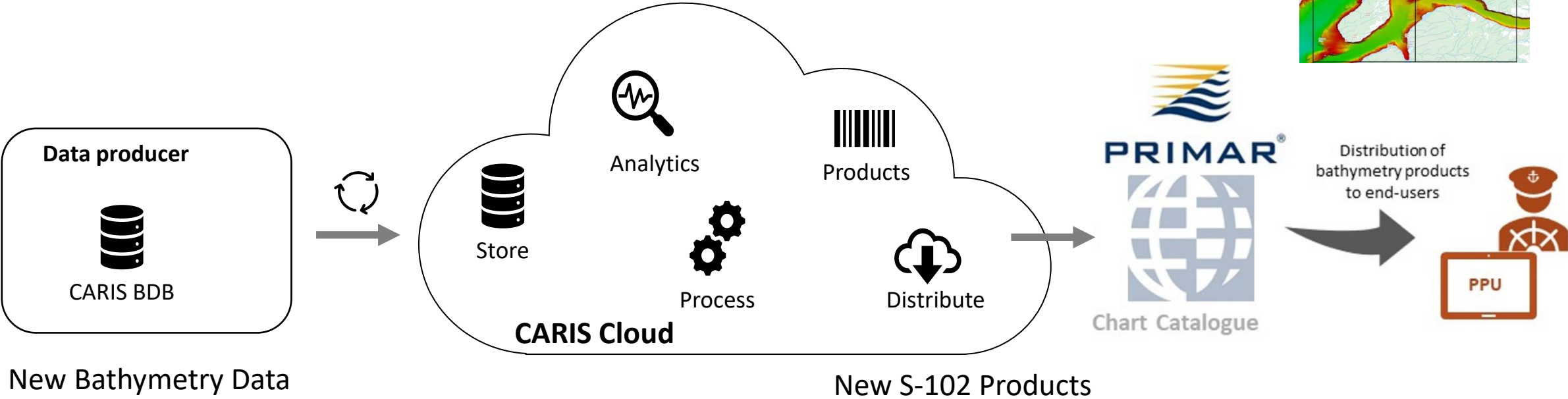
Product and download services

- S-100 support including
 - S-101 (and S-57) ENCs
 - S-102 Bathymetry Surface products
 - S-111 Surface Currents
 - ...
- Combined bathymetry in BAG, ASCII, CSAR, GeoTIFF

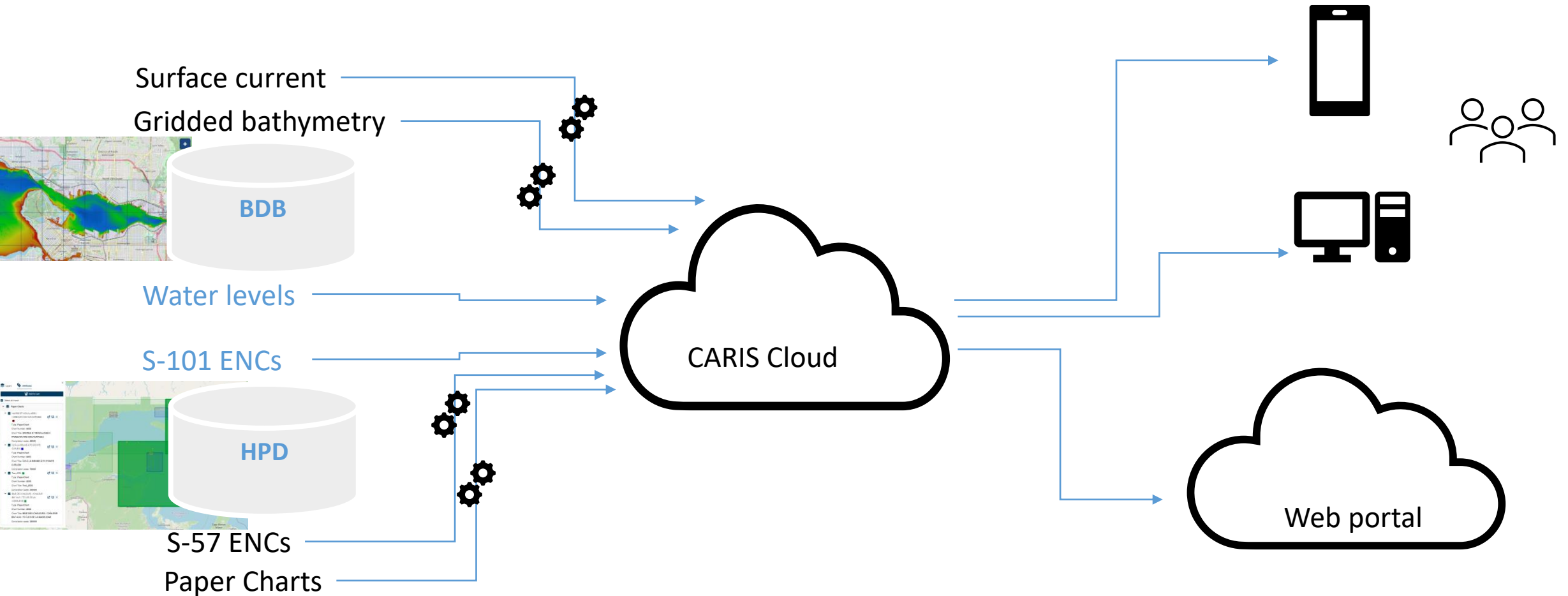
Works seamlessly with CARIS database solutions



S-100 as a Service



Turn-key production to cloud services connection



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Example of Branded Viewer: CHS NONNA

The screenshot displays the CHS NONNA web viewer interface. At the top, the header includes the Canadian flag and the text "Fisheries and Oceans Canada / Pêches et Océans Canada" and "Canadian Hydrographic Service - NONNA - Service Hydrographique du Canada". The main map area shows a bathymetric view of the North American Basin with a red grid overlay. A "Layers" panel on the left lists several layers, including "CHS NONNA - 10m", "CHS NONNA - 10m Bathymetry", "CHS NONNA - 10m Cell Limits", "CHS NONNA - 100m", "CHS NONNA - 100m Bathymetry", "CHS NONNA - 100m Cell Limits", "CHS NONNA - Packages", and "CHS NONNA - 10m Package Limits". A "Download" panel on the right shows the selection of products to package and download, including "Not for Navigation - 10m" and "Not for Navigation - 100m". The "Packaged products to download" section shows 77.375 kB selected. The interface also includes a scale bar (500 km), coordinates (lat: 71.305, lon: -102.620), and navigation controls.

Layers

- CHS NONNA - 10m (hidden at this zoom level)
- CHS NONNA - 10m Bathymetry
Transparency: 0
-100 0 10 15 30 100 1000 6000 (m)
- CHS NONNA - 10m Cell Limits
Transparency: 0
- CHS NONNA - 100m
- CHS NONNA - 100m Bathymetry
Transparency: 0
-100 0 10 15 30 100 1000 6000 (m)
- CHS NONNA - 100m Cell Limits
Transparency: 0
- CHS NONNA - Packages
- CHS NONNA - 10m Package Limits
Transparency: 0

Download

Products to package and download

- Select all 12
- Not for Navigation - 10m
 - ASCII 2
 - BAG 2
 - CSAR 2
 - GeoTIFF 2
- Not for Navigation - 100m
 - ASCII 1
 - BAG 1
 - CSAR 1
 - GeoTIFF 1

Packaged products to download (77.375 kB selected)

- Select all 3
- Not for Navigation - Packages
 - ASCII 1
 - CSAR 1
 - GeoTIFF 1

Cancel Download

Disclaimer
© Fisheries and Oceans Canada / Pêches et Océans Canada - NOT TO BE USED FOR NAVIGATION / NE PAS UTILISER POUR LA NAVIGATION
- NOTE: This data portal is a part of a pilot project. / Ce portail de données fait partie d'un projet pilote.

Attributions
- World Ocean Base: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
- World Ocean Reference: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors
- Powered by Teledyne Geospatial

Training and consulting

- Instructor led courses
 - Onsite or remote
 - HPD, S-57/S-100 Composer, Workflow Automation
- E-learning
 - S-100 theory and concepts workshop
 - **S-101 Production Course**
- Webinars
 - Recent ones for Automating ENC and Paper Chart workflows
- Consulting

 CARIS S-100 Online Workshop

CARIS S-100 Online Workshop with CARIS S-57 Composer

Teledyne CARIS is pleased to present this short online training program which looks at the International Hydrographic Organization (IHO) S-100 Standard, and the related S-101 Electronic Navigational Chart (ENC) Product Specification which is being developed to support the creation of next generation ENC products.

This workshop shows examples of creating and processing S-100 products in [CARIS S-57 Composer](#) but no software is required in order to participate.

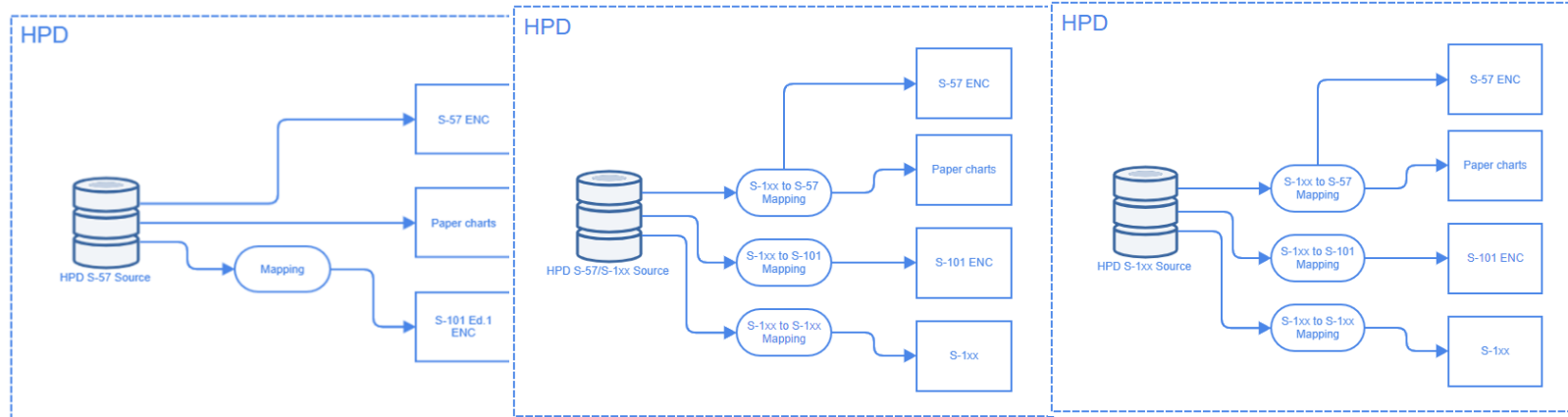
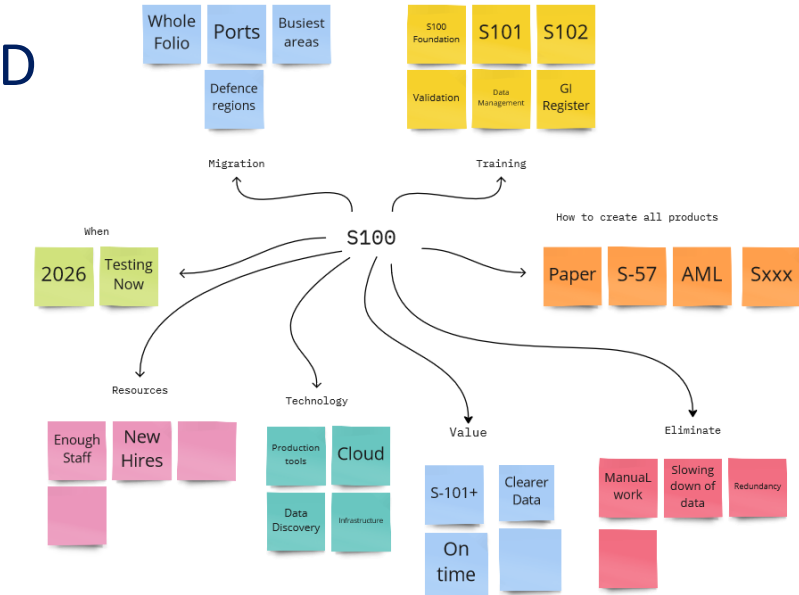
- Information: workshop [description and requirements](#)
- Length: 8 hours (estimated - completion time will vary)
- Cost: \$300 USD** for 90 days access to the course - [registration information](#)
- **The cost is currently waived for CARIS software users who are not...

[Register](#) [Login](#)



S-100 Sandbox

- A Cloud based, secure environment for S-100 enabled HPD
- A customizable environment that we manage for you
 - With relevant to your CARIS system files
 - Your test data and data model
- Subject matter expert guide to facilitate your S-100 aims
- Single or multi use environments



Thank you!

Juan.Carballini@Teledyne.com

