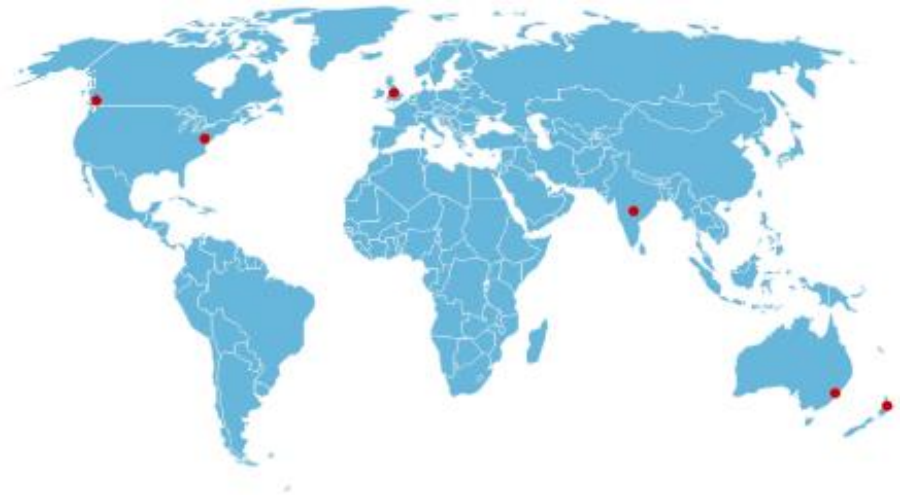
IIC TECHNOLOGIES

S-100 UPDATE

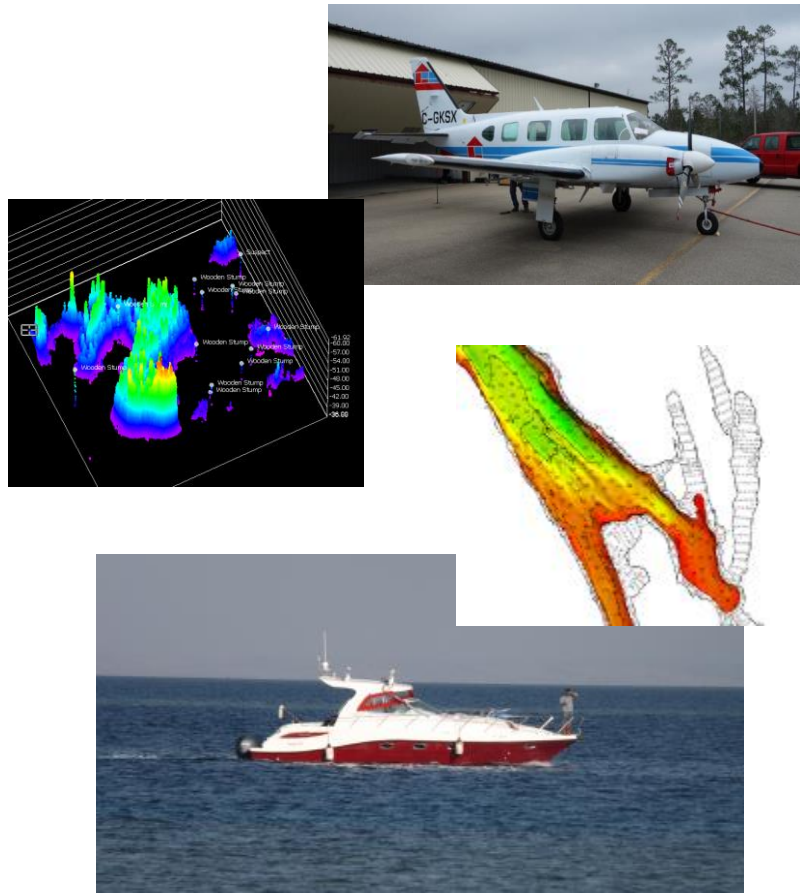
IIC Technologies Overview

- Established in 1993
- Full-Spectrum Geospatial Services and Solutions Provider
- Dedicated Innovation Center (R&D and Software Solutions)
- Global presence
- 1000+ geospatial specialists



Marine Services

- Full range of services:
  - Bathymetric surveys
  - Data processing
  - Product generation
  - Ongoing product maintenance
  - Specialized software solutions
  - Training
- Resource Pool of trained staff. Able to provide surge capacity across multiple disciplines.
- Trusted service provider to 30+ national hydrographic agencies
- Active industry expert contributor to IHO and OGC standard development: S-52, S-57, S-58, S-64, and the whole S-100 series
- Over 40 projects supporting S-100 development

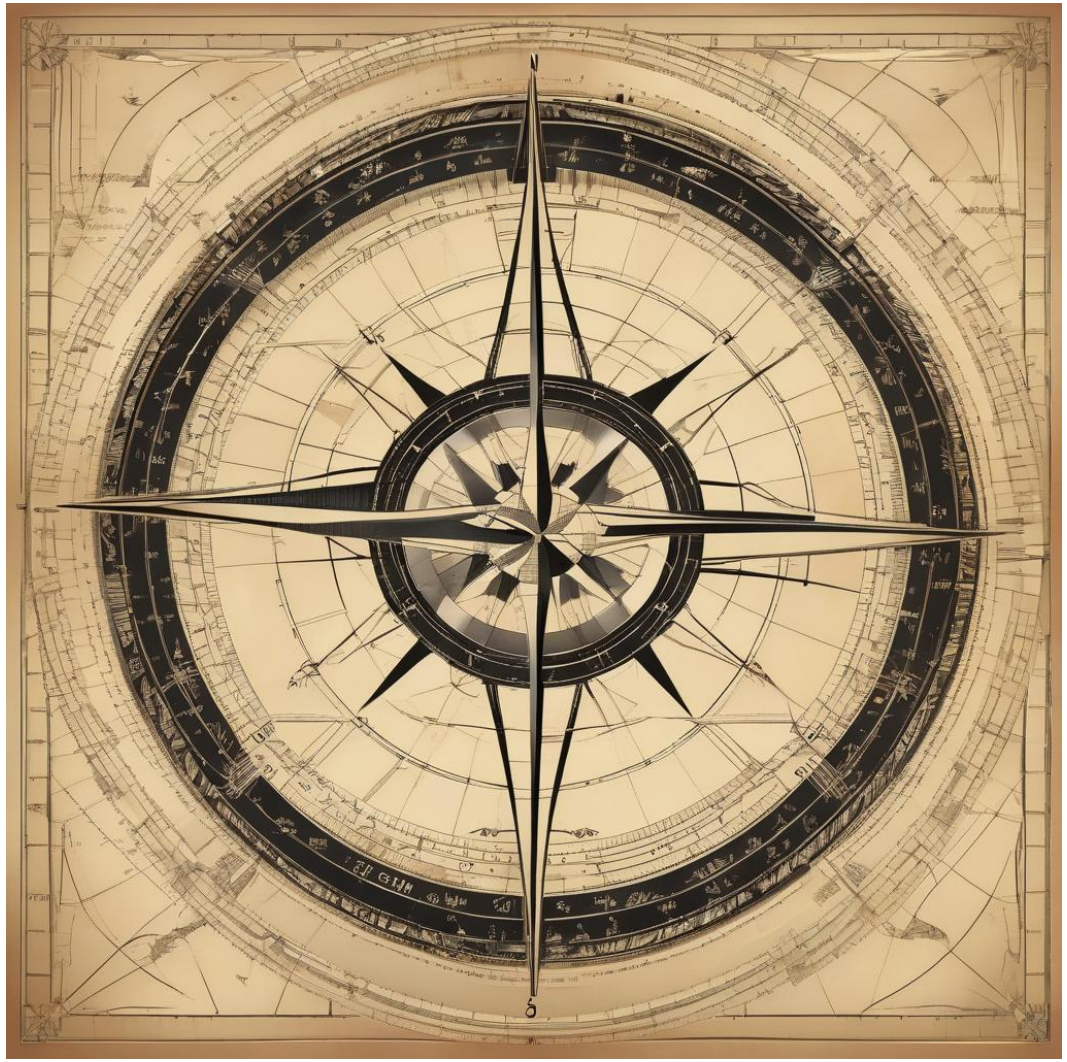


Our S-100 Approach

IIC TECHNOLOGIES

- We have assembled a full stack S-100 implementation
- Combines COTS applications with our own tools, built from the framework itself
- We support ISO8211, GML and HDF5 S-100 outputs. We use interfaces with open source components for interoperability and ease of data migration
- Extensive use made of open source toolkits and open standards.

- We offer a full range of data prototyping and migration activities. These are usually supplemented with a gap analysis:
  - “How close is my existing data to S-XXX product specification”
  - How can I continue to produce my existing publications whilst also producing S-XXX
  - Is my data “valid”? How well does it match “other” data I may have?



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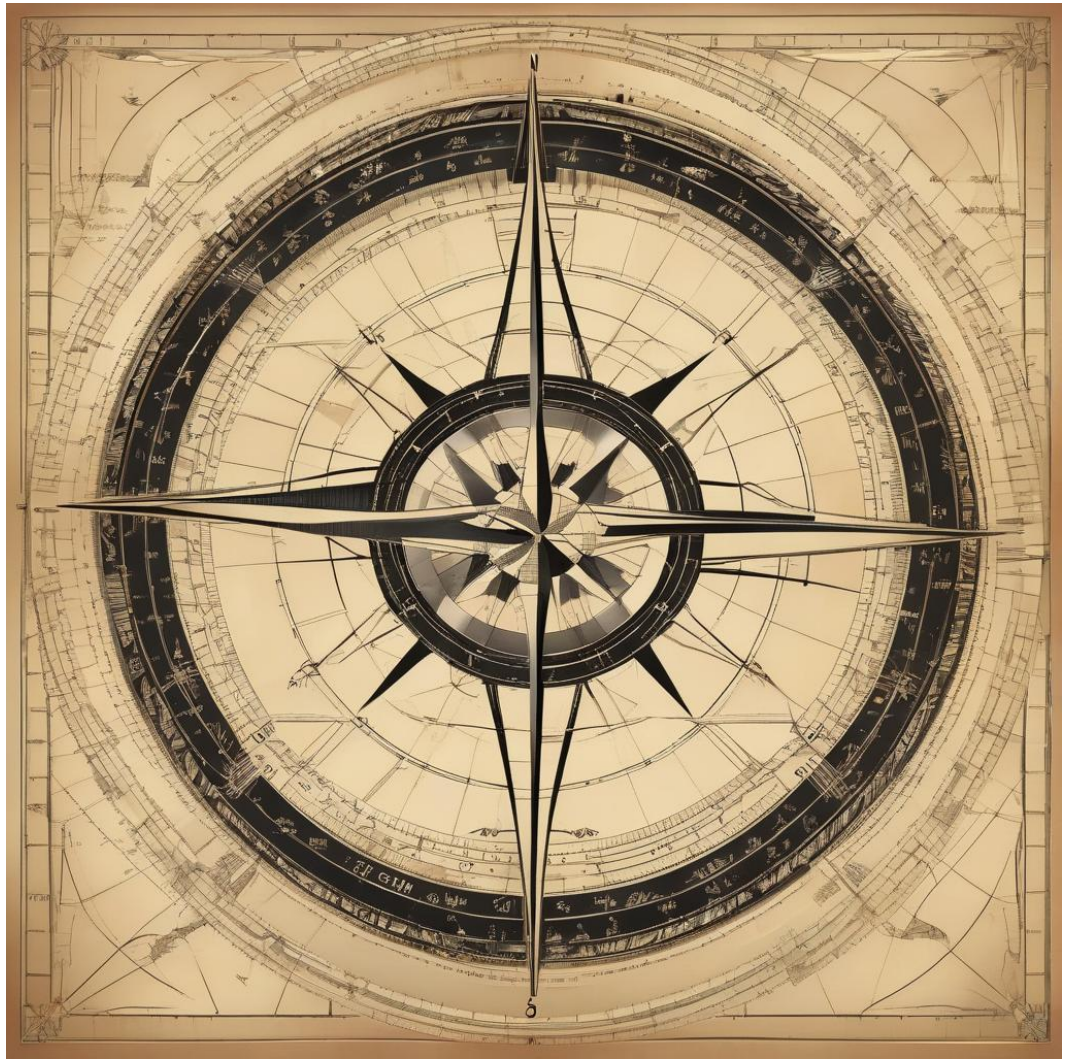
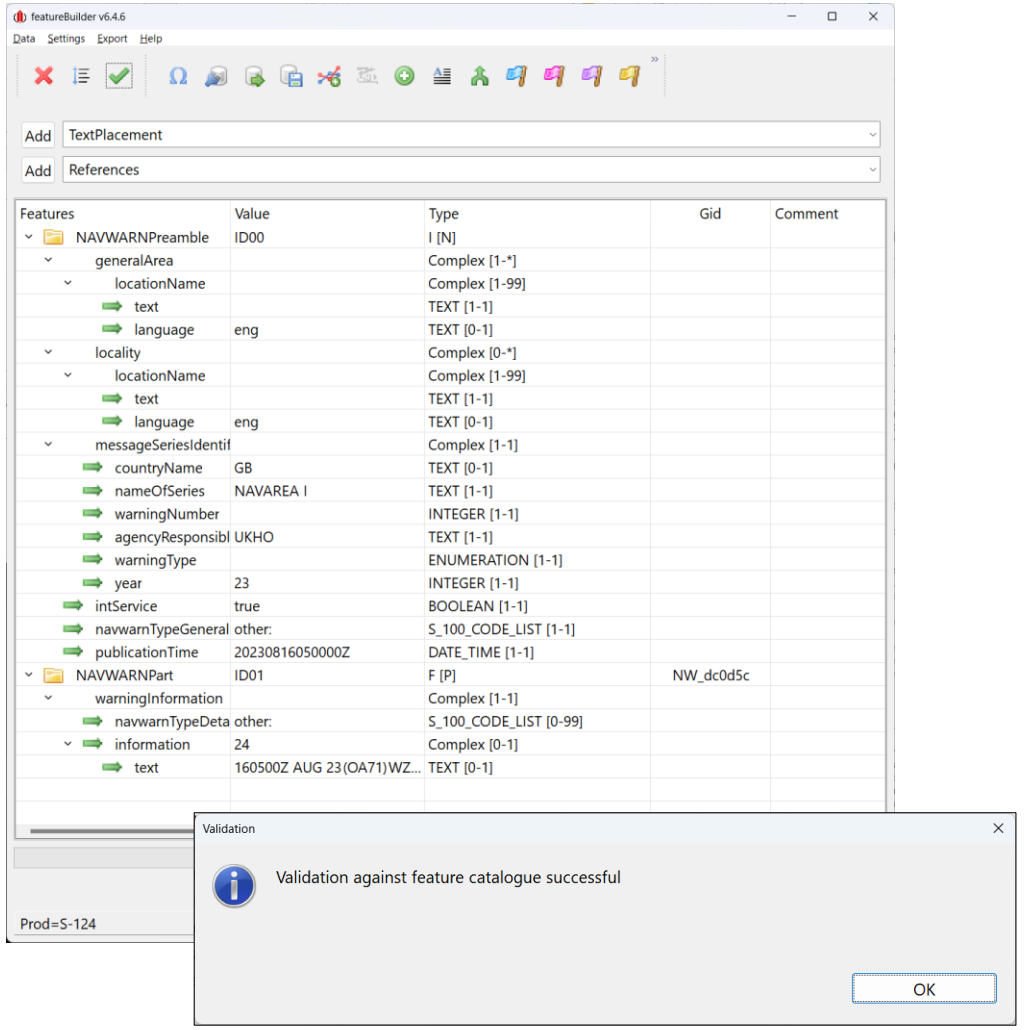


S-100 Migration - https://s100.iictechnologies.com/

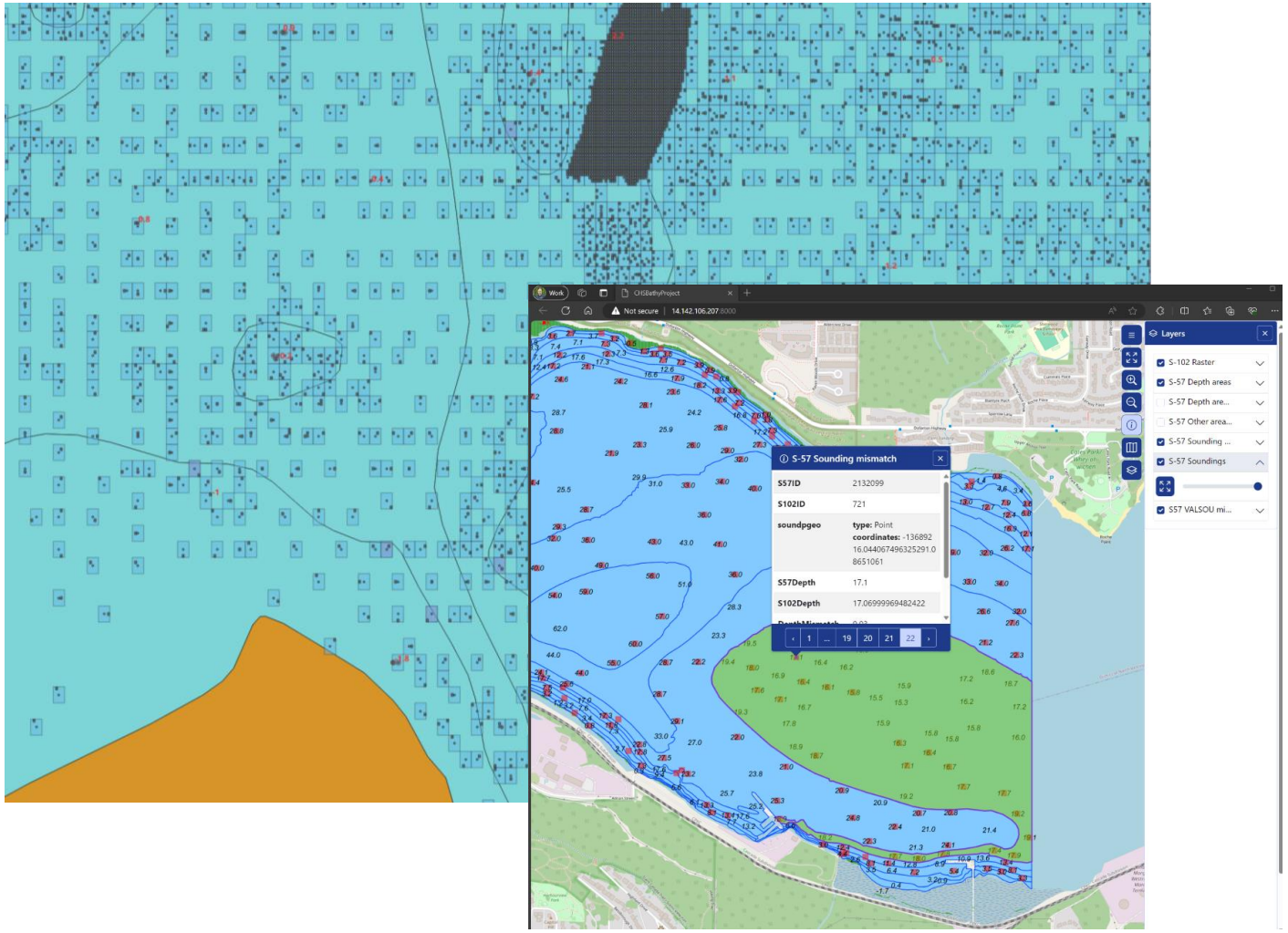
IIC TECHNOLOGIES

- Our S-100 Model and Data Editing Tools.
  - Work from pure S-100 feature catalogues
  - Interfaces to open source PostGIS databases with no proprietary formats
  - Generates GML natively from any S-100 feature catalogue structure. Also generates GeoJSON (ready for Web Services implementations)
  - Database structure also has programming API to build data migration applications.
- Supporting Tools
  - Feature catalogue builder including auto-generation from simple textual descriptions.
  - UML to feature catalogue support
  - Feature catalogue validation and differencing
  - Exchange Catalogue generation, S-100 Part 17
  - Part 15, Security Scheme, we have a free application for digital signature production
  - API access for all components

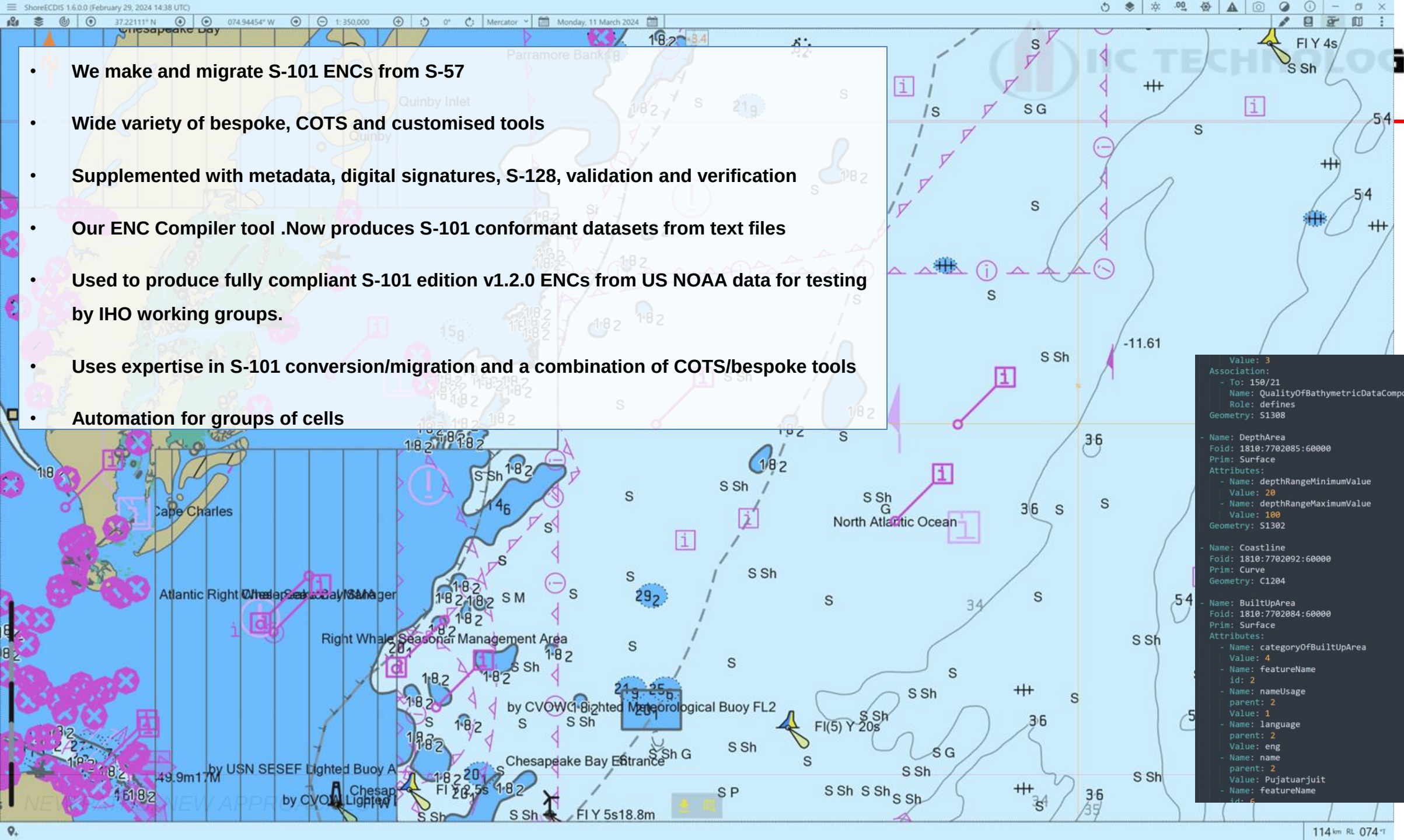


Reconciliation (Verification) of S-102 with S-101.

- We can now read, insert into database, and produce gridded HDF5 products.
- Includes reconciliation with other datasets, particularly S-101, including depth related attribution (valueOfSounding, DRVAL1 etc..)
- Uses a combination of open source tools and libraries.



- We make and migrate S-101 ENCs from S-57
- Wide variety of bespoke, COTS and customised tools
- Supplemented with metadata, digital signatures, S-128, validation and verification
- Our ENC Compiler tool .Now produces S-101 conformant datasets from text files
- Used to produce fully compliant S-101 edition v1.2.0 ENCs from US NOAA data for testing by IHO working groups.
- Uses expertise in S-101 conversion/migration and a combination of COTS/bespoke tools
- Automation for groups of cells



3.9 Vessel Traffic Services Zone Schedules

3.9.1 Bay of Fundy

Note: Latitude and longitude positions given for the Bay of Fundy Vessel Traffic Services Zone are in NAD83.

The Bay of Fundy Vessel Traffic Services zone comprises all Canadian waters contained within the area bounded by a line drawn in a 270° True direction from Chebogue Point in position 43°43'54.3"N, 066°07'08.0"W; thence through the following positions:

43°43'54.3"N 066°26'28"W, 43°58'45.3"N 066°27'43"W, 44°09'30.3"N 066°47'01"W,

44°11'50.3"N 066°49'31"W, 44°14'57.3"N 066°52'40"W, 44°17'21.2"N 066°55'08"W,

44°22'30.2"N 067°18'58.1"W, 44°29'50.2"N 067°15'08.1"W, 44°35'30.2"N 067°08'13"W,

44°42'00.2"N 066°58'22"W, 44°46'35.6"N 066°54'09.2"W thence along the Canada/USA boundary line to the shore at 45°11'30.5"N 067°17'00.6"W; thence following the Canadian shores of New Brunswick and Nova Scotia back to the beginning at Chebogue Point, including Fishing Zone 2.

Table 3-2 - Sectors and Boundaries for the Bay of Fundy

Sector	Boundaries
	The outer limit of the zone, and a line joining the following positions: 45°03'29.2"N 066°27'32.8"W,

3.9 Annexes des zones de services de trafic maritime

3.9.1 Baie de Fundy

Note : Les positions exprimées en latitude et en longitude, pour la zone STM de la baie de Fundy, sont données en NAD83.

La zone de Services de trafic maritime de la baie de Fundy comprend toutes les eaux canadiennes à l'intérieur de la zone délimitée par une ligne tirée dans une direction de 270 (vraie) depuis la pointe Chebogue, par 43°43'54.3"N 066°07'08"W; de là, en passant par les positions

43°43'54.3"N 066°26'28"W, 43°58'45.3"N 066°27'43"W, 44°09'30.3"N 066°47

44°11'50.3"N 066°49'31"W, 44°14'57.3"N 066°52'40"W, 44°17'21.2"N 066°55

44°22'30.2"N 067°18'58.1"W, 44°29'50.2"N 067°15'08.1"W, 44°35'30.2"N 067

44°42'00.2"N 066°58'22"W, 44°46'35.6"N 066°54'09.2"W de là, longeant la fr

et les États-Unis jusqu'à la rive, à la position 45°11'30.5"N 067°17'00.6"W; de

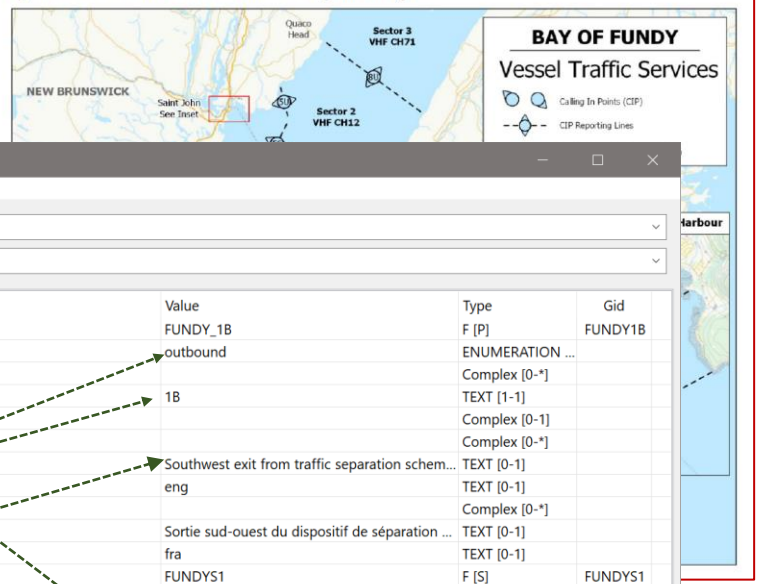
canadienne du Nouveau-Brunswick et de la Nouvelle-Écosse jusqu'au point d

Chebogue, y compris la zone de pêche no. 2.

Tableau 3-2 - Secteurs et limites pour la baie de Fundy

Secteur	Limites

Figure 3-4 - Vessel Traffic Services - Bay of Fundy



- **We Digitise Existing Publications.**
- **Conforms to S-100 models, manual or automated processing**
- **Complex mappings from books to S-100 product specifications.**
- **Scalable resource solutions.**

featureBuilder v4.5

Data Settings Export Help

Add VesselTrafficServiceArea

Add NauticalInformation

Features	Value	Type	Gid
RadioCallingInPoint	FUNDY_1B	F [P]	FUNDY1B
trafficFlow	outbound	ENUMERATION ...	
featureName		Complex [0-*]	
name	1B	TEXT [1-1]	
textContent		Complex [0-1]	
information		Complex [0-*]	
text	Southwest exit from traffic separation schem...	TEXT [0-1]	
language	eng	TEXT [0-1]	
information		Complex [0-*]	
text	Sortie sud-ouest du dispositif de séparation ...	TEXT [0-1]	
language	fra	TEXT [0-1]	
VesselTrafficServiceArea	FUNDYS1	F [S]	FUNDYS1
requirementsForMaintenanceOfListeningWatch	none	TEXT [1-1]	
featureName		Complex [0-*]	
language	fra	TEXT [0-1]	
name	Baie de Fundy Secteur 1	TEXT [1-1]	
featureName		Complex [0-*]	
language	eng	TEXT [0-1]	
name	Bay of Fundy Sector 1	TEXT [1-1]	
textContent		Complex [0-1]	
information		Complex [0-*]	
text	La limite extérieure de la zone et une ligne j...	TEXT [0-1]	
language	fra	TEXT [0-1]	
information		Complex [0-*]	
language	eng	TEXT [0-1]	
text	The outer limit of the zone, and a line joinin...	TEXT [0-1]	
RadioCallingInPoint	FUNDY_5B	F [P]	
trafficFlow	outbound	ENUMERATION ...	
textContent		Complex [0-1]	
information		Complex [0-*]	
text	North entrance to traffic separation scheme ...	TEXT [0-1]	
language	eng	TEXT [0-1]	
information		Complex [0-*]	
text	Sortie nord du dispositif de séparation du tra...	TEXT [0-1]	
language	fra	TEXT [0-1]	
featureName		Complex [0-*]	
name	5B	TEXT [1-1]	
VesselTrafficServiceArea	FUNDYS2	F [S]	FUNDYS2
requirementsForMaintenanceOfListeningWatch	none	TEXT [1-1]	

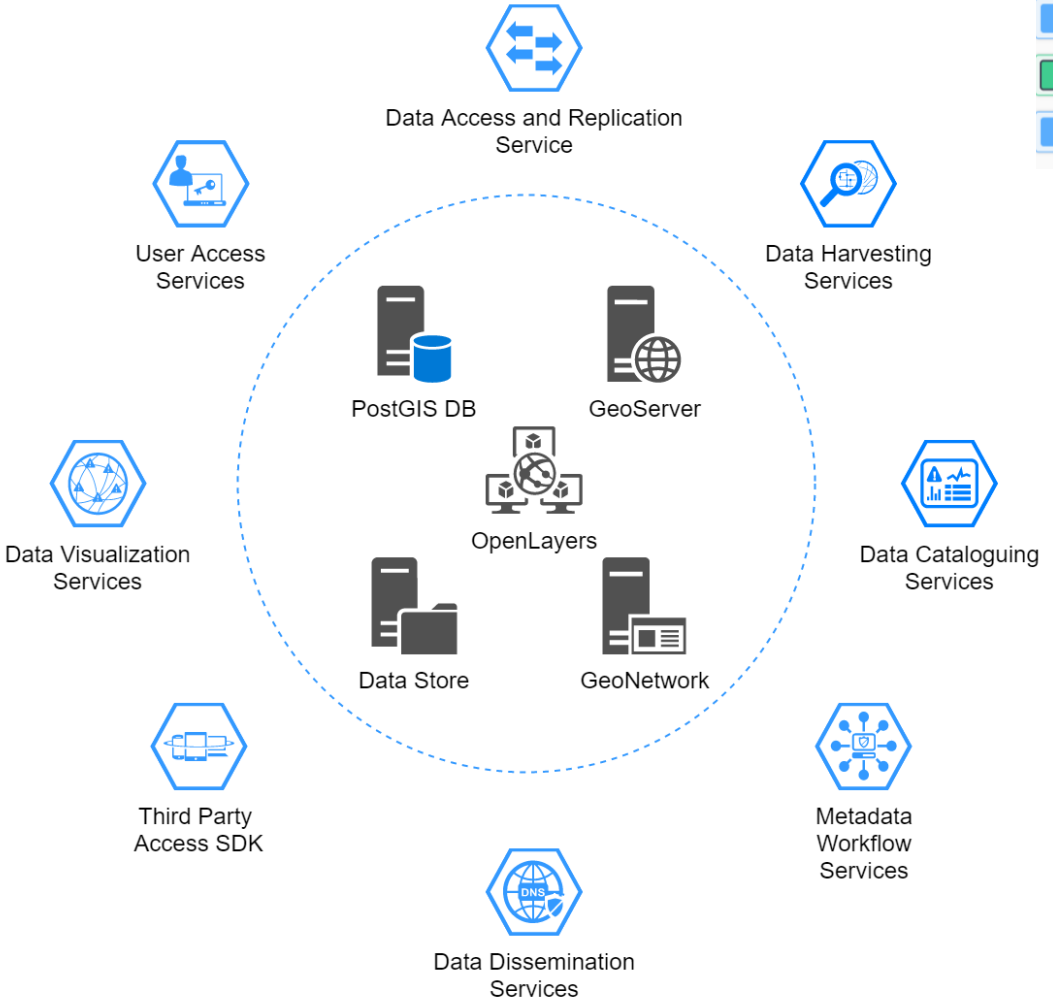
Relations

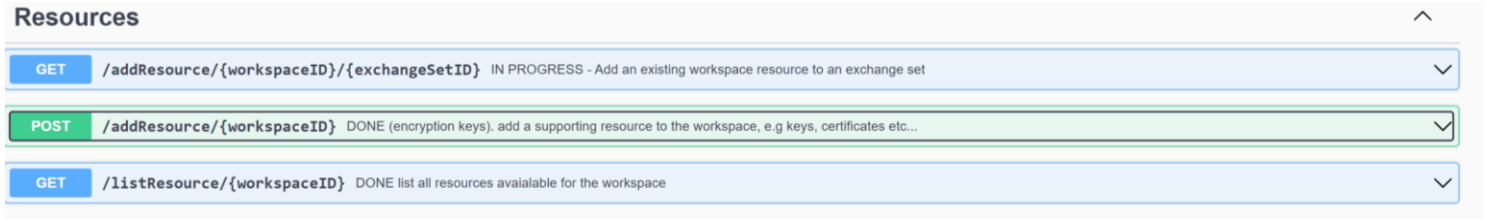
OK Cancel

5B	2	-	North entrance to traffic separation scheme - Outward traffic only	A point at 45°02'45.3"N 066°09'35.4"W.
6	2	Saint John Harbour light and whistle Buoy J	-	A line joining: 45°13'30.4"N 066°05'45.1"W; 45°12'55.3"N 066°02'36.9"W; 45°12'59.3"N 066°00'28.2"W.

			Trafic entrant seulement.	
5B	2	-	Sortie nord du dispositif de séparation du trafic - Trafic sortant seulement	Un point par
6	2	Feu et bouée lumineuse « J » à sifflet du Port de Saint-Jean	-	Une ligne jo 45°13'30.4" 45°12'55.3" 45°12'59.3"
				Une ligne jo

IIC's S-100 Nautilus Cloud





- A set of reusable components with defined interfaces
- Can be used to build up S-100 solutions or host entire services
- Integrate commercial off the shelf software, management of S-100 products together, metadata, digital signatures, data encryption, distribution
- Configurable
- Open Standards for maximum interoperability

Thank You!