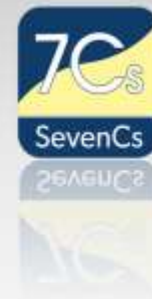# Inland ENC Harmonization Group Meeting XV
22 – 24 October 2019

Friedhelm Moggert-Kägeler, SevenCs

Introduction of SevenCs

Introduction SevenCs

- Located in Hamburg, founded in 1992

- 7Cs belongs to ChartWorld International group of companies

- *Digital Chart Agent, ECDIS Manufacturer, VAR, ENC and SENC distribution services*)

- Products and Services related to ENC, IENC, and ECDIS / Inland ECDIS

- Long term member of IHO/IENC Working Groups
  - S-100 Working Group, ENC Working Group
  - Contributor to S-100/S-101 Testbed
  - IEHG

SevenCs Software

Founded in **1992**

120+ Employees

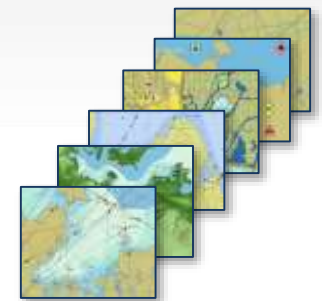**4** Office locations

Hamburg

Limassol

Tokyo

Singapore

SevenCs - Products and Services

- ECDIS Kernel software

- Web based solutions for electronic charts

- Chart Production/Validation Software

- Navigation Software (ECS, PPU)

- Software Development (e.g. ECDIS for ChartWorld)

- Training and Consulting

```
// Check for 'noShow
for (int i = 0; i <
{
    QString arg(my_arg
    if (arg == "noShow
```
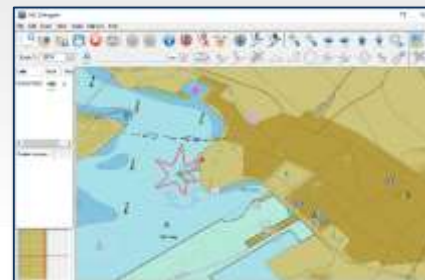
Inland ENC software / solutions
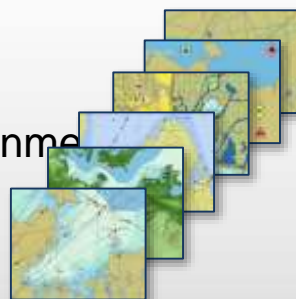
Inland ENC software / solutions

- SevenCs ENC Tools
    - ENC Designer, ENC Manager, ENC Optimizer (Chart Production, Distribution)
    - ENC Bathymetry Plotter (e.g. bIENC)
    - 7Cs Analyzer (ENC, IENC Validation)

- Nautilus S-100 Kernel SDK
    - Used by system manufacturers
    - Monitoring systems
    - Core component of SevenCs software

- WMS ChartServer
    - ENCs / IENCs in web-environment

SevenCs S-100/S-101 activities

S-100 / S-101 activities

- Active member of ENC and S-100 working groups

- Contribution to S-100/S-101 testbed

- Nautilus S-100 kernel (S-101, S-102, ...)

- S-101 Validation software (7Cs Analyzer)

- S-101 Reader and Writer Plugins for FME
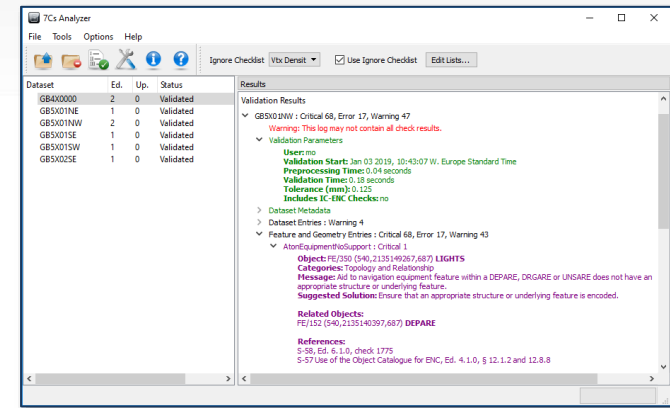
SevenCs Software

Latest developments

7Cs Analyzer

7Cs Analyzer

Overview:

- New Generation ENC Validation Solution

- Successor of ENC Analyzer

- 7Cs Analyzer was developed in cooperation with Nautical Dimensions, Australia

- First released in March 2019 (as Version 4.0)

- Includes new validation engine

- Based on SevenCs Nautilus S-100 kernel

- Modular approach

propelled by
NAUTILUS

7Cs Analyzer

Supported Standards and Products:

- IHO S-100 (Ed. 4.0.0, December 2018)

- IHO S-101 (Ed. 1.0.0 December 2018)

- IHO S-57 Ed. 3.1

- ENC Product Spec. 2.0, Use of the Object Cat.

- **IHO S-58 Validation Checks (Ed. 6.1 Sept. 2018)**

- Product Spec. for all Inland ENCs Editions

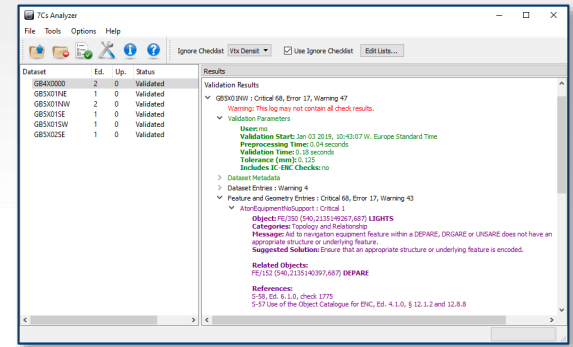- **Recommended IENC Validation Checks 2.4**

- bENC/bIENC 1.0

SevenCs Software

7Cs Analyzer

Features:

- Validates base datasets, sequential updates

- Validation of exchange sets

- Includes hundreds of individual checks

- Integrated command line mode for batch processing

- Ignore checks function

- Integrates with ENC Designer and SeeMyENC free viewer
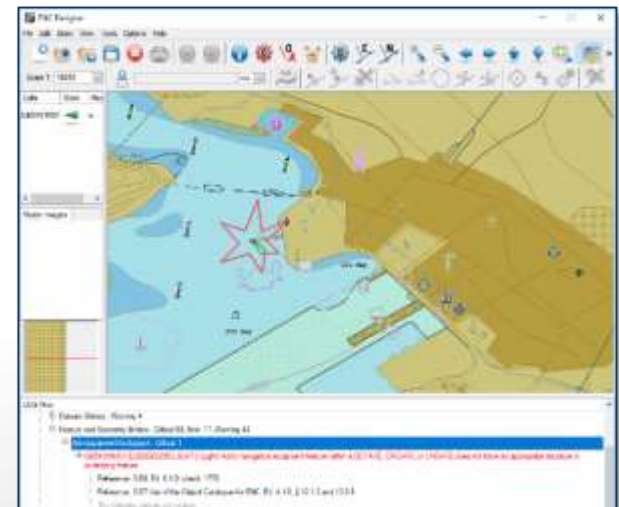
7Cs Analyzer in action
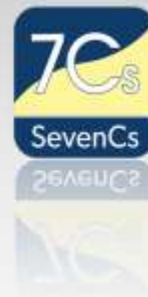
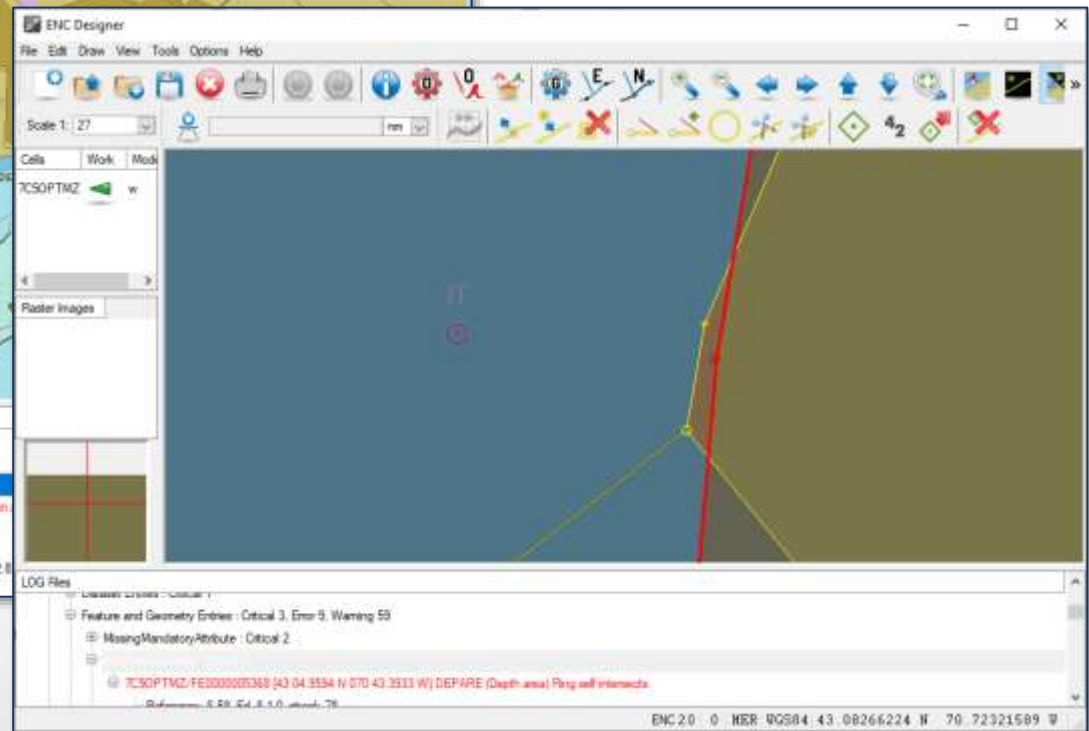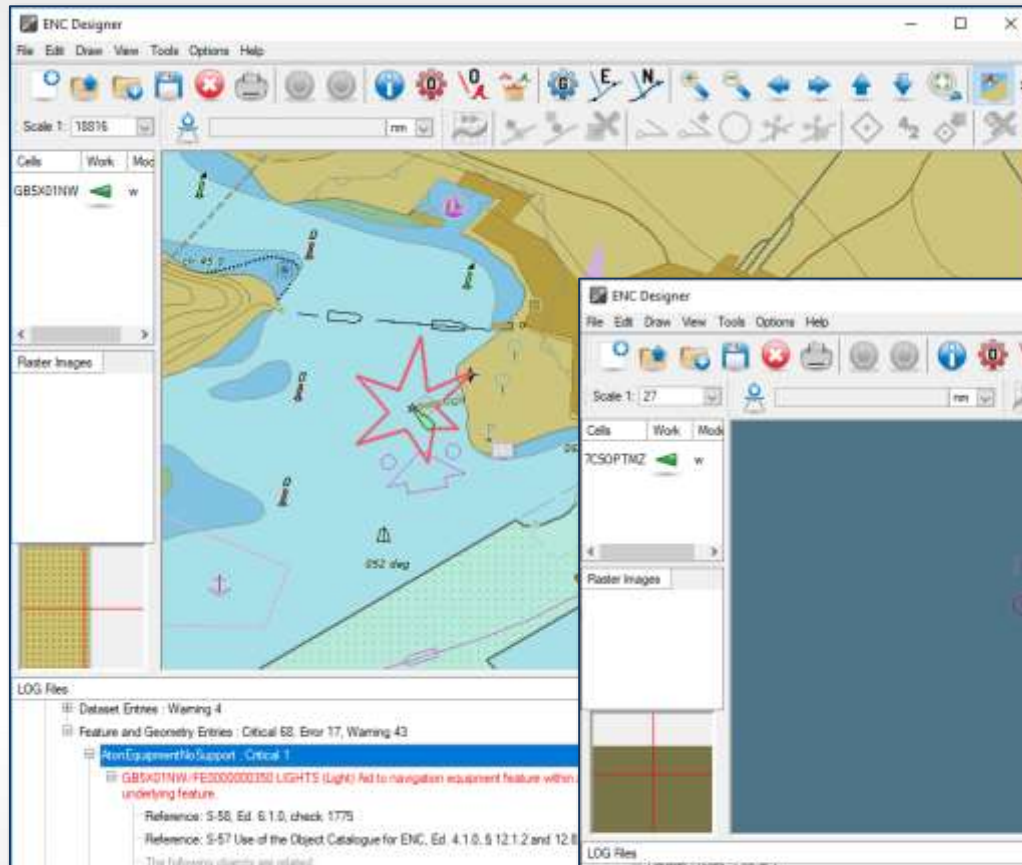Results in log window: **Critical**, **Error**, or ~~Warning~~
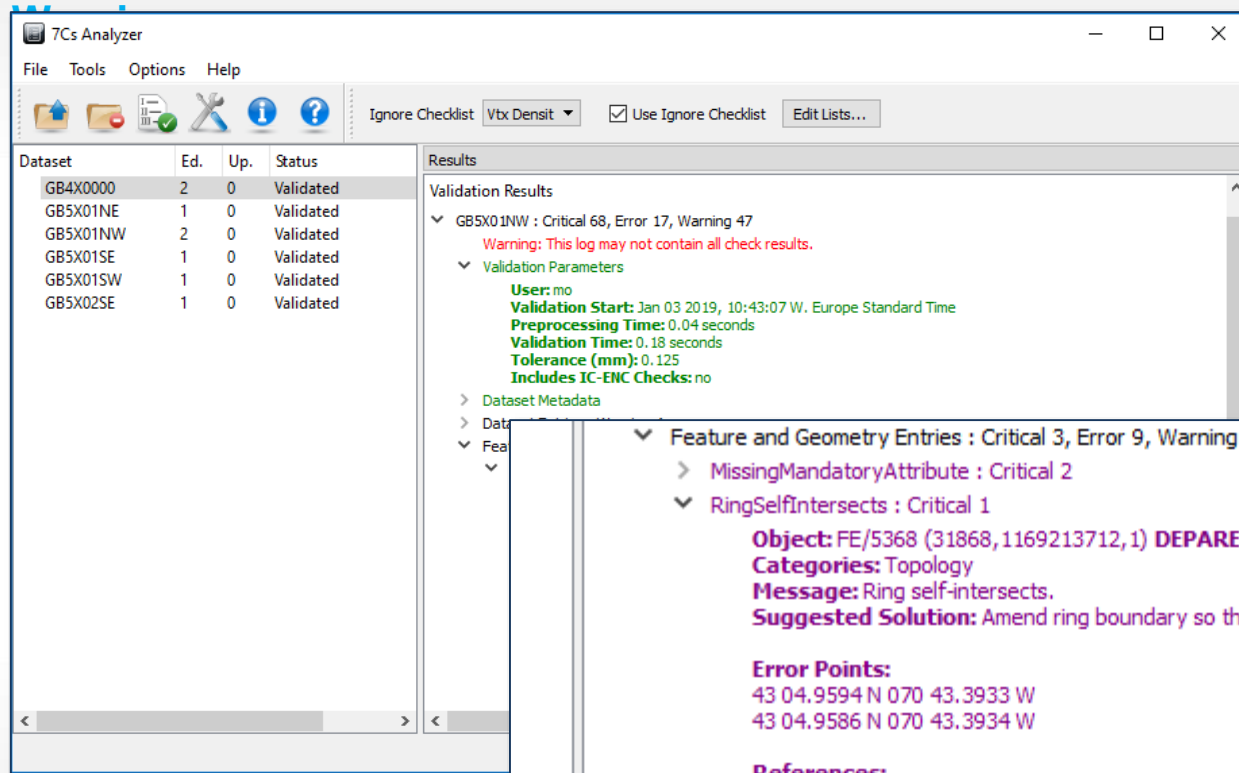
Indivudual message references relevant S-58

check

7Cs Analyzer in action

Review in ENC Designer

SevenCs Software

7Cs Analyzer in action

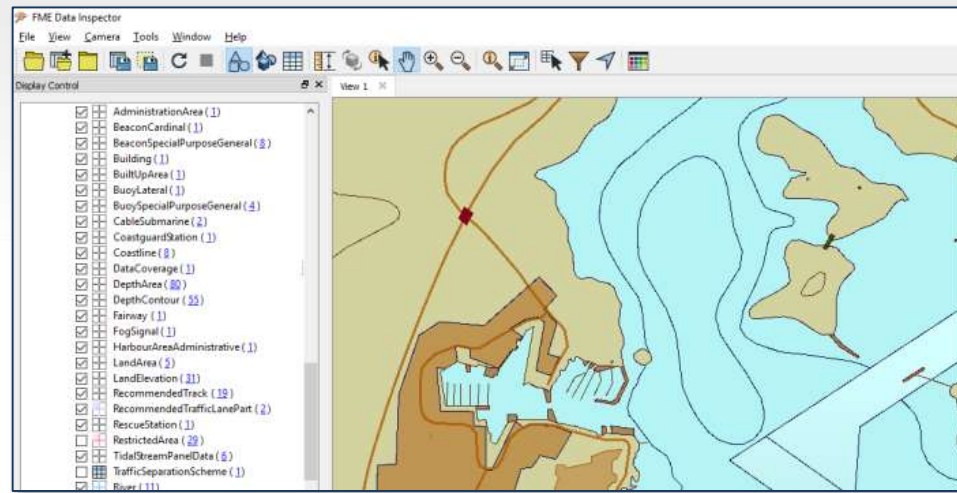Review in SeeMyENC

SevenCs Software
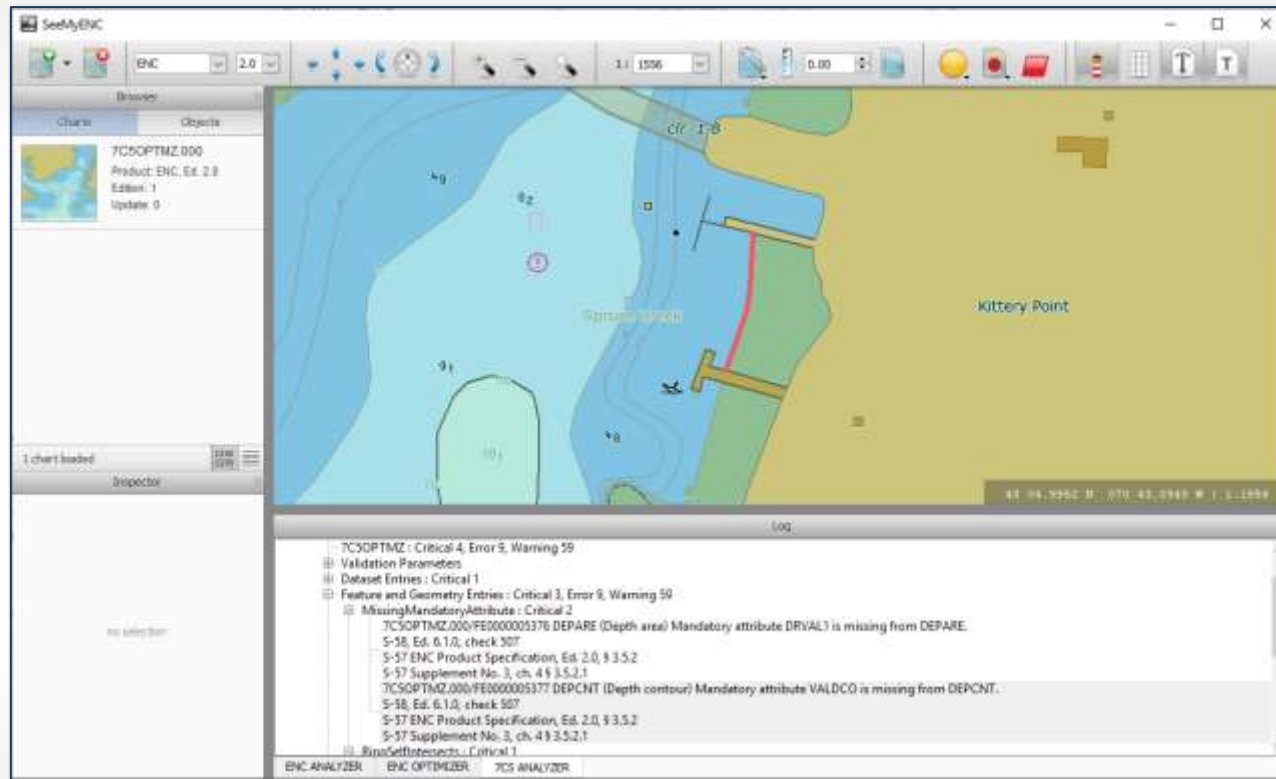
7Cs Analyzer Version 4.1

7Cs Analyzer new Version 4.1

Highlights:

- Planned release: Q1 2020

- Includes AML validation

- User defined custom checks

- Integrates a Custom Checks Wizzard for easy definition of custom checks

- shape export function of validatin results for further use in third party production systems
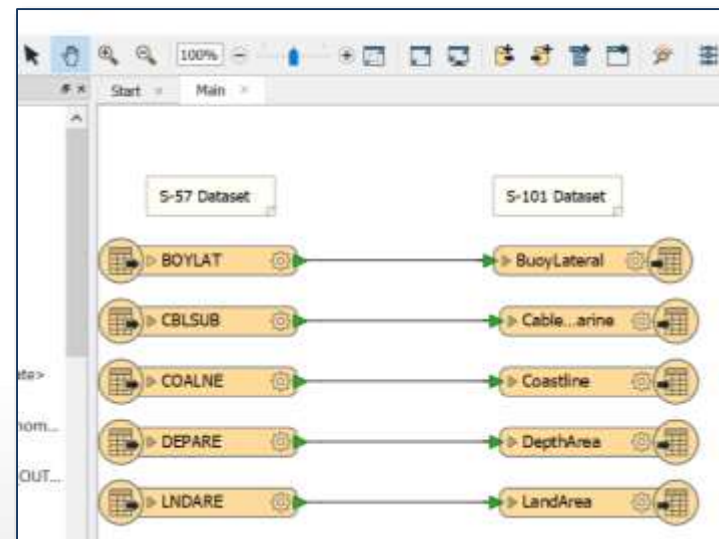
S-101 Plugins for FME

S-101 Plugins for FME

Data conversion with FME
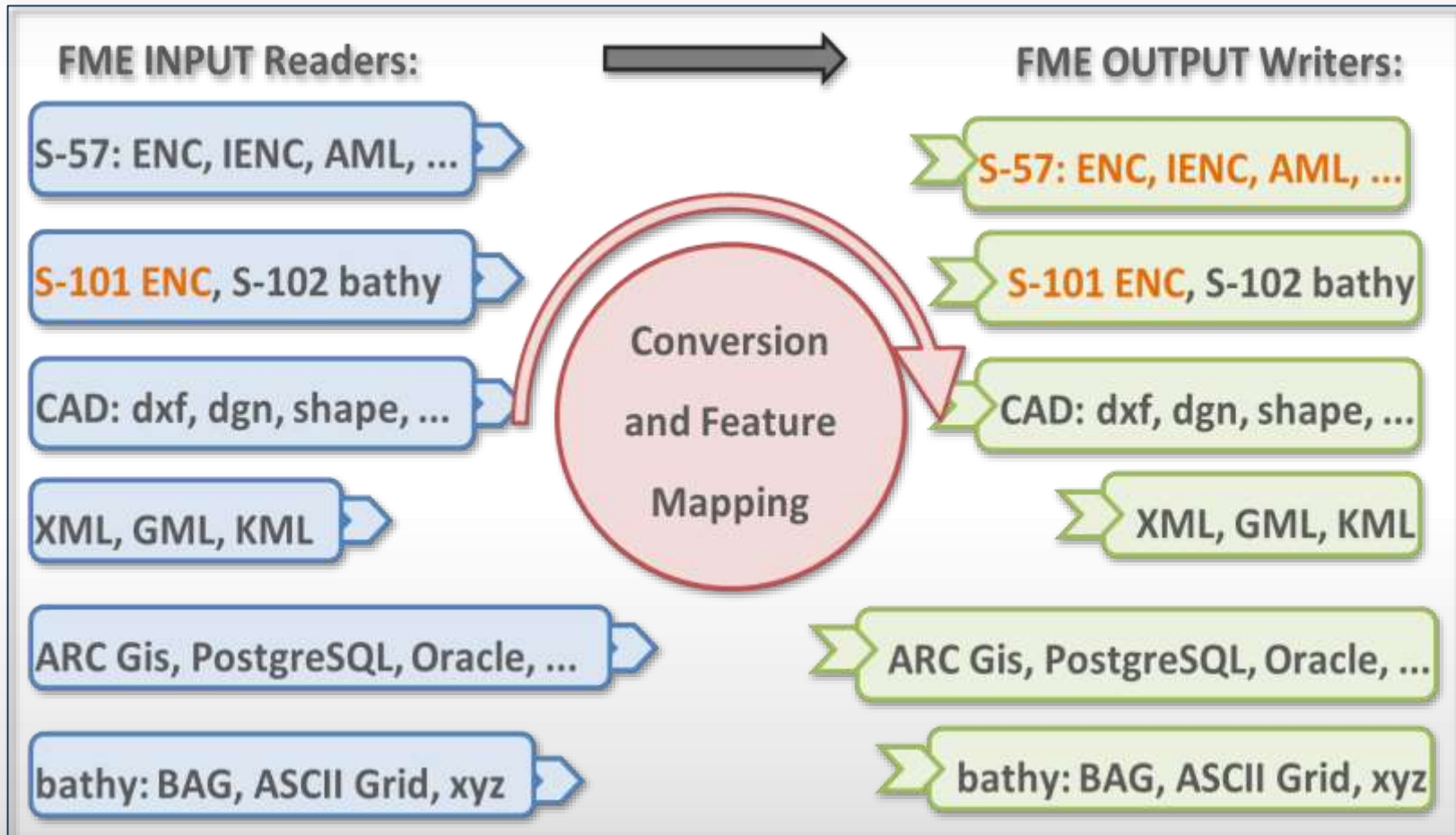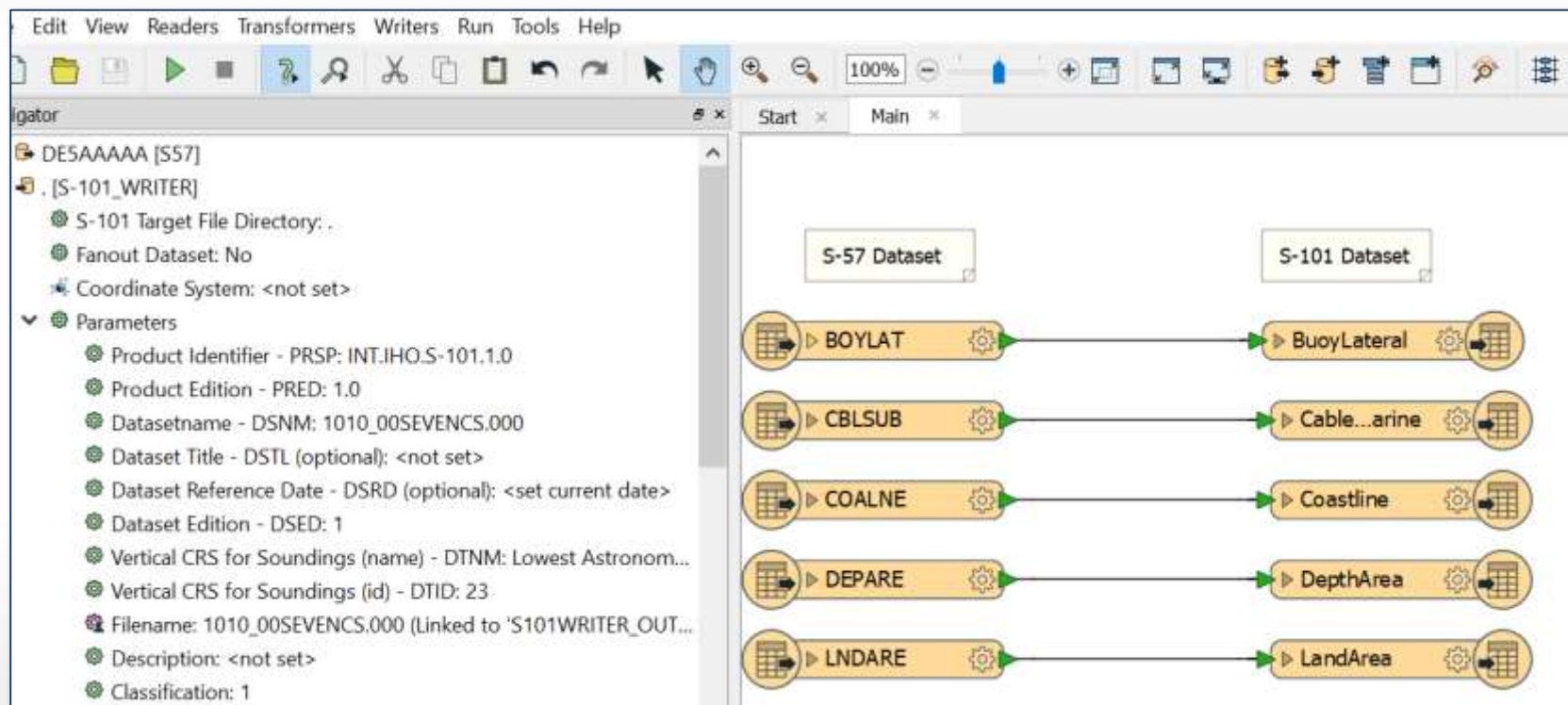
S-101 Plugins for FME

- Import and display of S-101 data

- S-101 data analysis, feature and attribute queries

- Data conversion and processing

- Create S-101 data

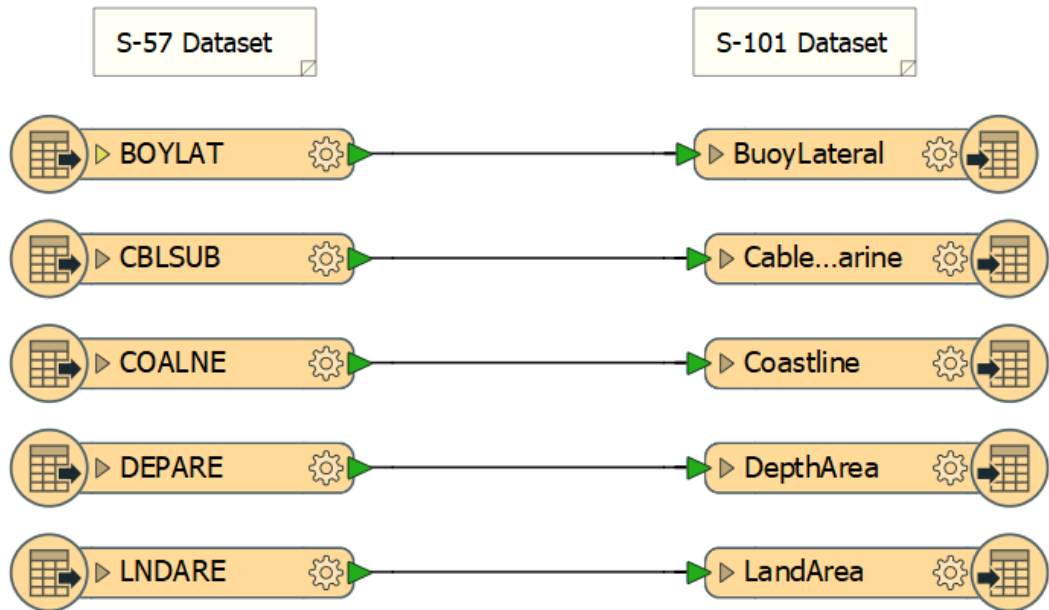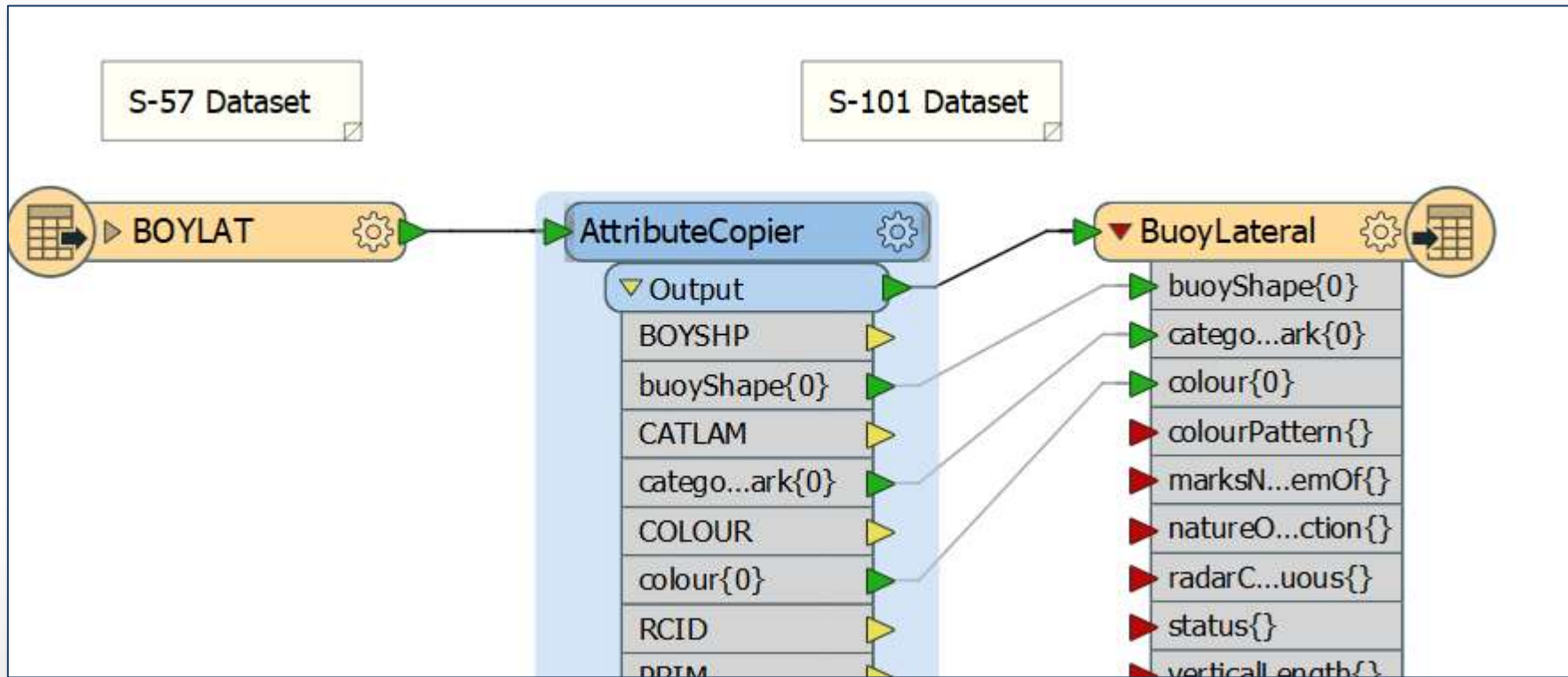- Backwards conversion to S-57

- Creation of testdata

- etc.

SevenCs Software

ENC conversion: S-57 to S-101

drag and drop configuration of translation workflow

S-57 Dataset

S-101 Dataset

▷ BOYLAT ⚙ ▶ ——————————▶ ▷ BuoyLateral ⚙ ➡

▷ CBLSUB ⚙ ▶ ——————————▶ ▷ Cable...arine ⚙ ➡

▷ COALNE ⚙ ▶ ——————————▶ ▷ Coastline ⚙ ➡

▷ DEPARE ⚙ ▶ ——————————▶ ▷ DepthArea ⚙ ➡
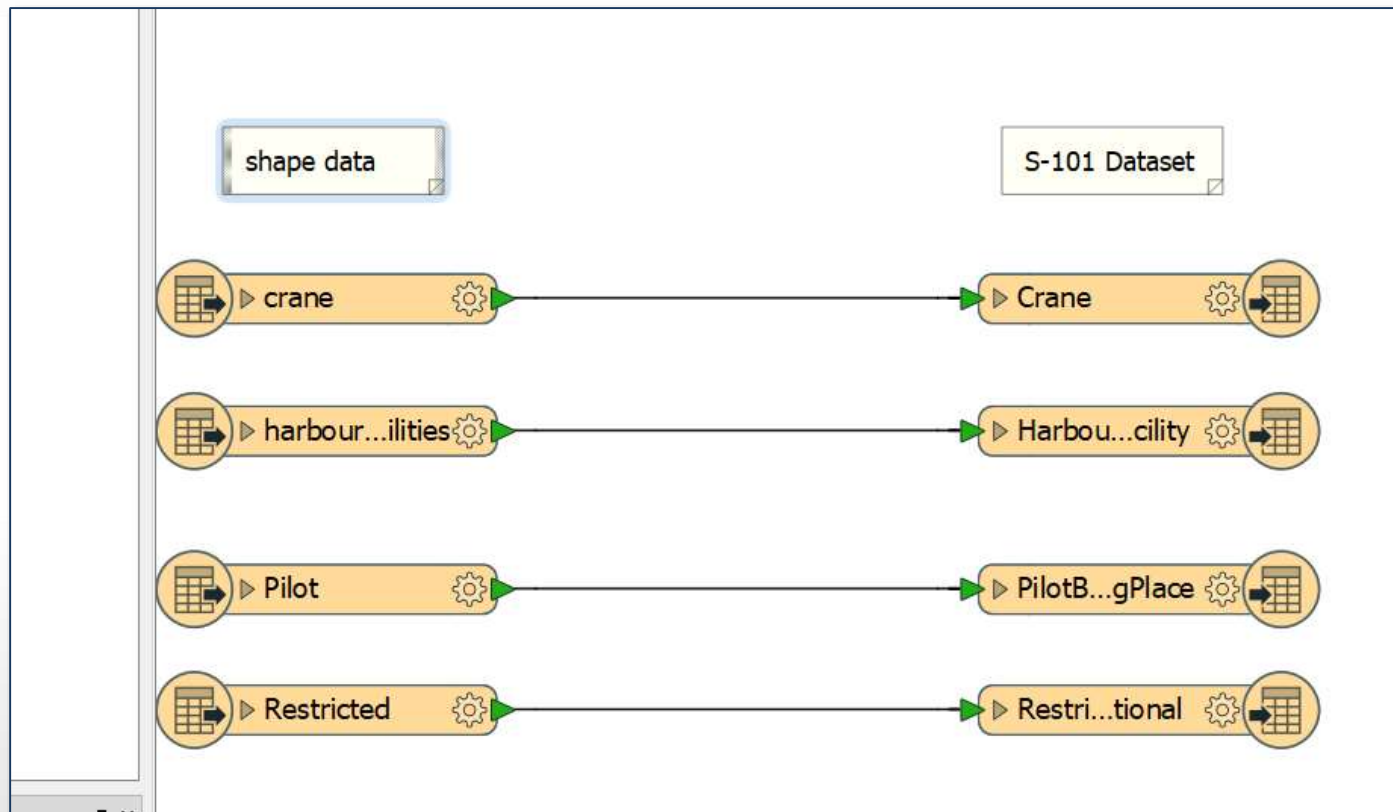
▷ LNDARE ⚙ ▶ ——————————▶ ▷ LandArea ⚙ ➡

ENC conversion: S-57 to S-101

Feature and attribute mapping

GIS data conversion: shape to S-101

Feature mapping

S-101 multiplicity of attributes
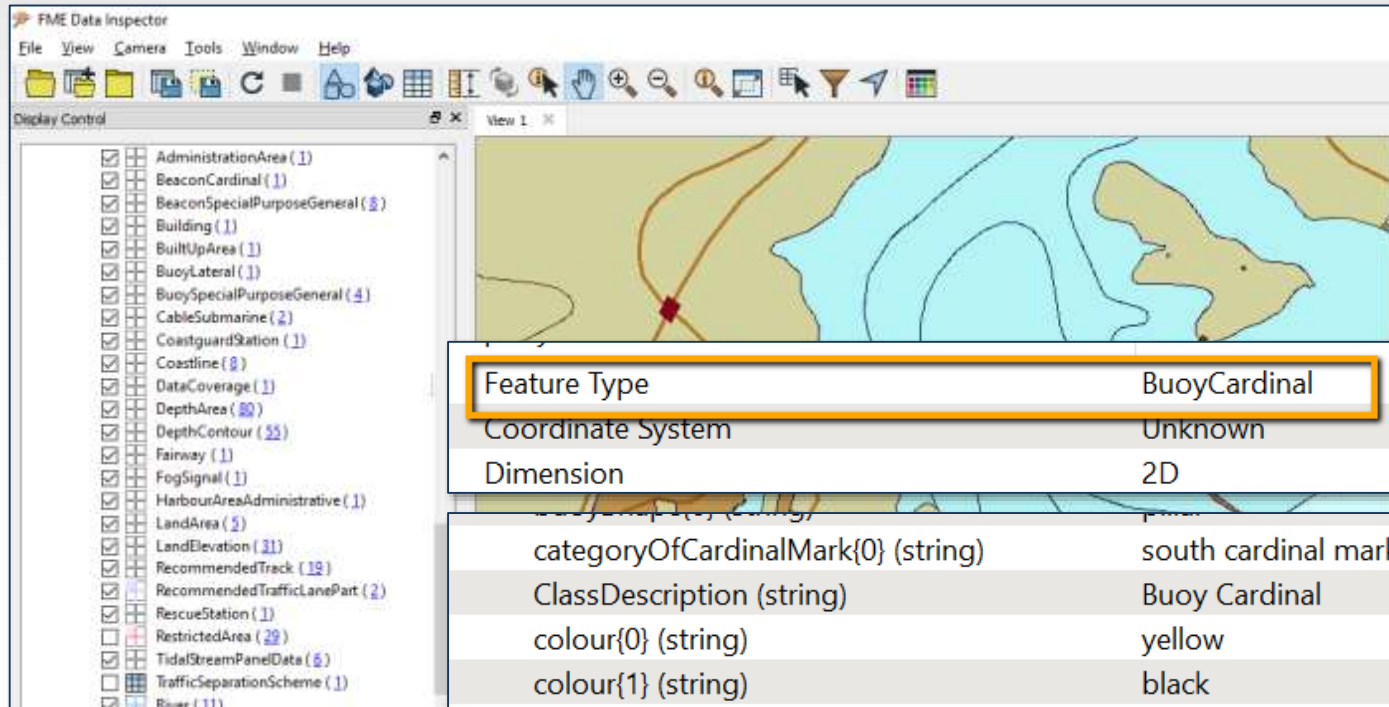
S-101 complex attributes

Thank you!

Contact: mo@sevencs.com