

**7Cs Analyzer Edition 4.0**

# **New Generation for Validation of S-57 and S-100/S-101 data**



**ChartWorld**  
Group

# 7Cs Analyzer

- 7Cs Analyzer is an application for the validation of S-57 and S-100 datasets.
- It helps ensure that datasets are compliant with the relevant S-57 and S-100 product specifications and standards.



# General Information

- 7Cs Analyzer based on Nautilus is S-100 ready
- Development from scratch (since 2014)
- Considered to be an ENC Analyzer Upgrade
- First official release Q1 2019
- Support customers get Base Module (S-57) as usual
- New licenses preferably as annual subscription

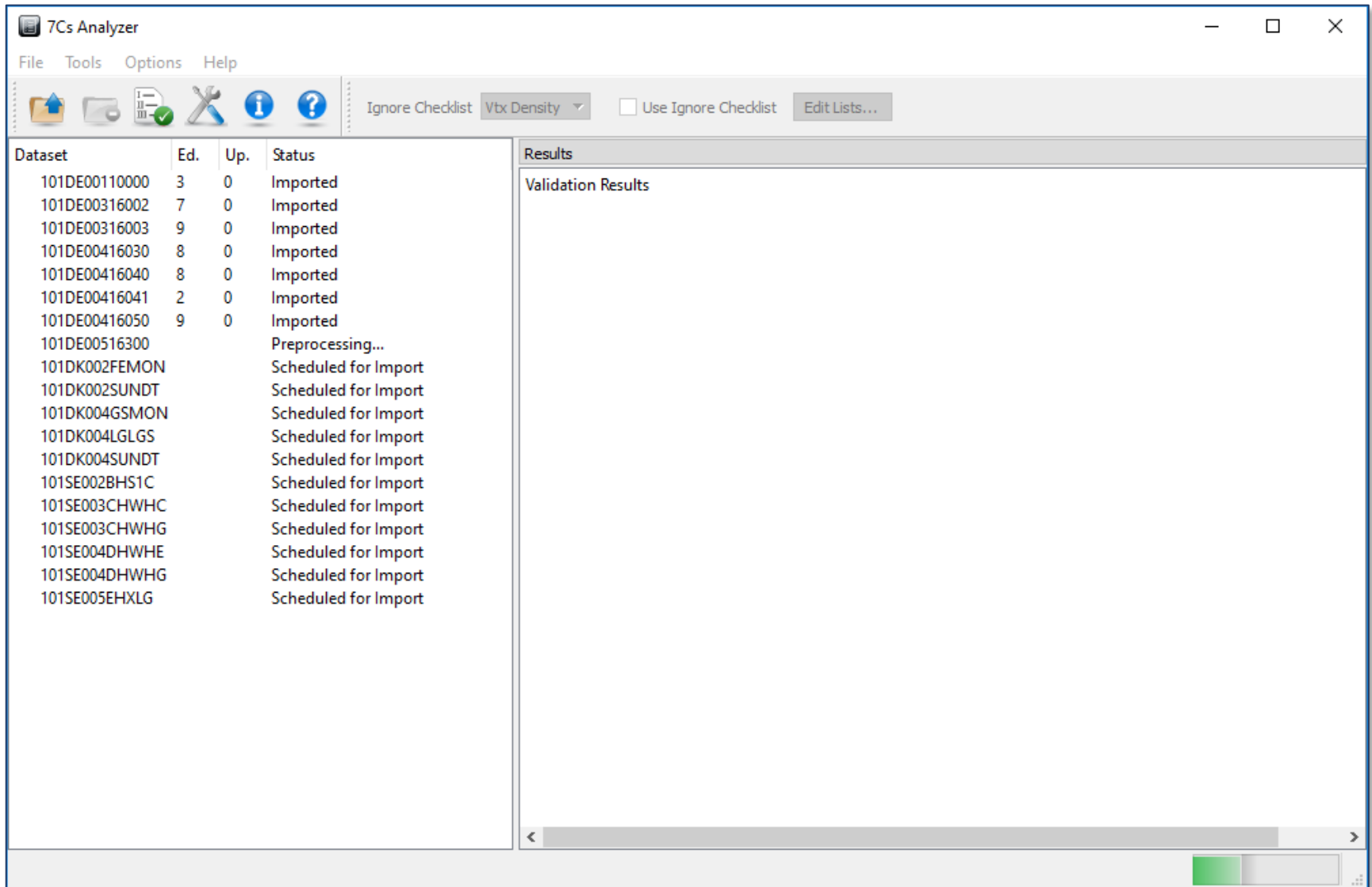
# Supported Standards/Products

- Products
  - ENC (S-57, S-101),
  - IENC (S-57, 2.0, 2.1, 2.2, 2.3, 2.4)
  
- Validation Standards
  - S-58 ENC Validation Checks Ed. 6.1.0 (Sept. 2018)
  - Recommended Validation Checks for Inland ENC
  
- Related Standards
  - S-57, Use of the Object Catalogue
  - S-100, S-101

# Highlights

- Validation of S-57 and S-101 nautical chart products
- Compliant with latest Ed. of IHO S-58 ENC Validation Checks
- Compliant with Recomm. Inland ENC Validation Checks 2.4
- Integrated command line mode for batch processing
- Advanced editor for definition of checks users want to ignore
- Simplified validation log output
- Improved consistency in check naming and log messages

# The Graphical User Interface

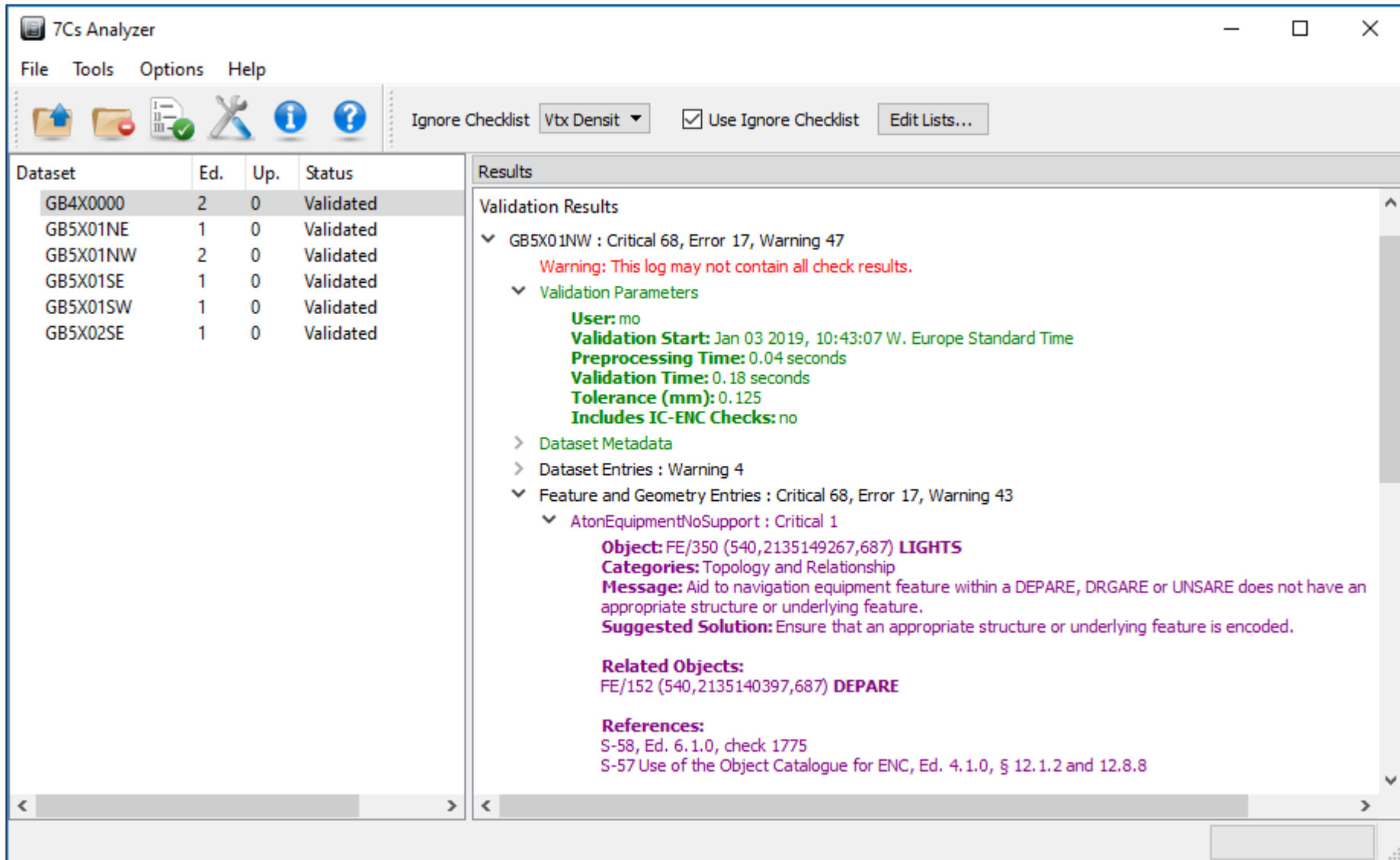


The screenshot shows the 7Cs Analyzer application window. The title bar reads "7Cs Analyzer". The menu bar includes "File", "Tools", "Options", and "Help". The toolbar contains icons for file operations and help. The main interface is divided into two panes:

- Dataset List:** A table with columns "Dataset", "Ed.", "Up.", and "Status".
- Results Pane:** A section titled "Results" containing "Validation Results".

Dataset	Ed.	Up.	Status
101DE00110000	3	0	Imported
101DE00316002	7	0	Imported
101DE00316003	9	0	Imported
101DE00416030	8	0	Imported
101DE00416040	8	0	Imported
101DE00416041	2	0	Imported
101DE00416050	9	0	Imported
101DE00516300			Preprocessing...
101DK002FEMON			Scheduled for Import
101DK002SUNDT			Scheduled for Import
101DK004GSMON			Scheduled for Import
101DK004LGLGS			Scheduled for Import
101DK004SUNDT			Scheduled for Import
101SE002BHS1C			Scheduled for Import
101SE003CHWHC			Scheduled for Import
101SE003CHWHG			Scheduled for Import
101SE004DHWHE			Scheduled for Import
101SE004DHWHG			Scheduled for Import
101SE005EHXLG			Scheduled for Import

# The Graphical User Interface



The screenshot displays the 7Cs Analyzer application window. The title bar reads "7Cs Analyzer". The menu bar includes "File", "Tools", "Options", and "Help". The toolbar contains icons for file operations and help. The main interface is split into two panes. The left pane shows a table of datasets, and the right pane shows detailed validation results for a selected dataset.

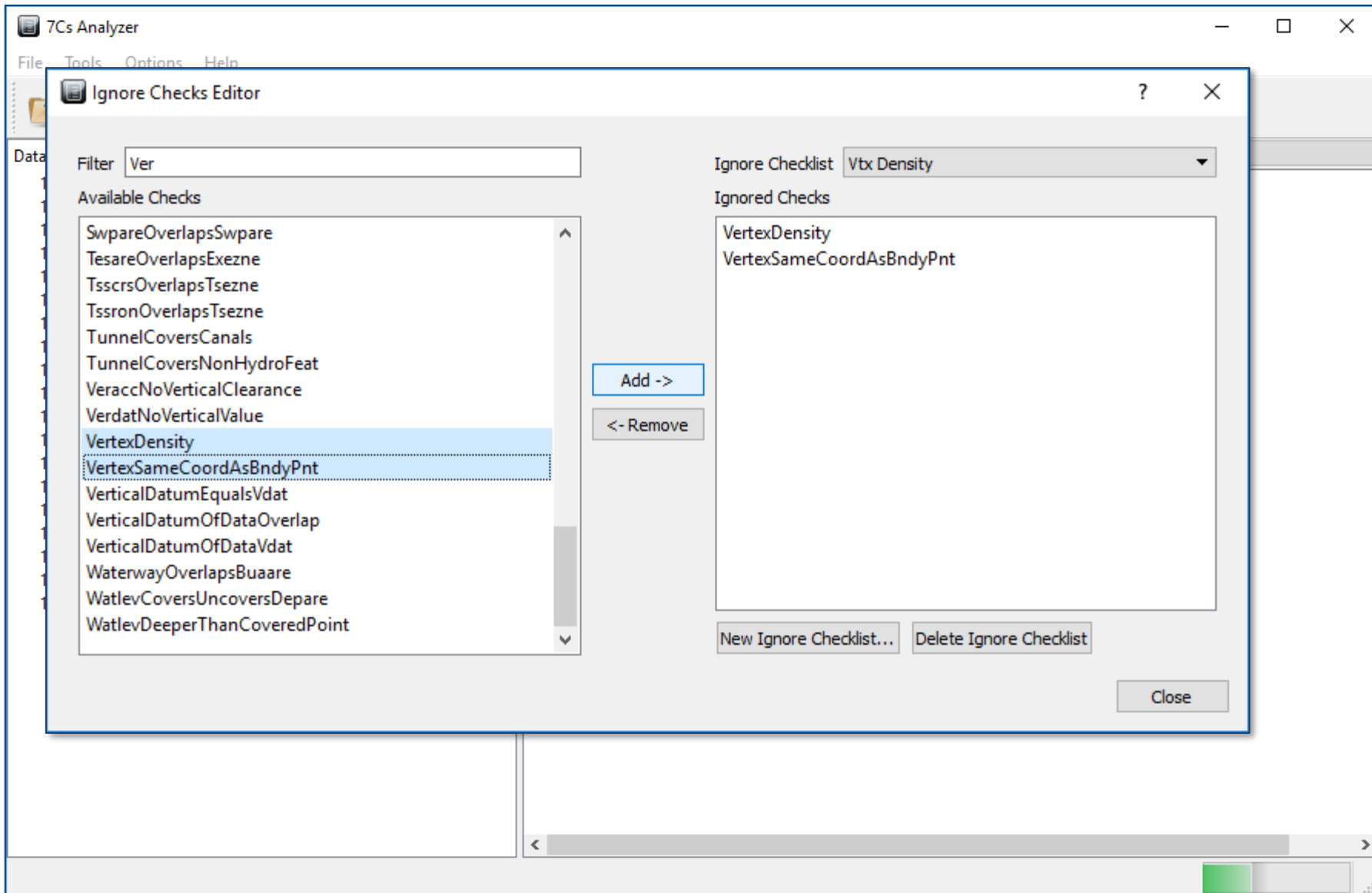
Dataset	Ed.	Up.	Status
GB4X0000	2	0	Validated
GB5X01NE	1	0	Validated
GB5X01NW	2	0	Validated
GB5X01SE	1	0	Validated
GB5X01SW	1	0	Validated
GB5X02SE	1	0	Validated

**Results**

Validation Results

- GB5X01NW : Critical 68, Error 17, Warning 47
  - Warning: This log may not contain all check results.
  - Validation Parameters
    - User: mo
    - Validation Start: Jan 03 2019, 10:43:07 W. Europe Standard Time
    - Preprocessing Time: 0.04 seconds
    - Validation Time: 0.18 seconds
    - Tolerance (mm): 0.125
    - Includes IC-ENC Checks: no
  - Dataset Metadata
  - Dataset Entries : Warning 4
  - Feature and Geometry Entries : Critical 68, Error 17, Warning 43
    - AtonEquipmentNoSupport : Critical 1
      - Object: FE/350 (540,2135149267,687) **LIGHTS**
      - Categories: Topology and Relationship
      - Message: Aid to navigation equipment feature within a DEPARE, DRGARE or UNSARE does not have an appropriate structure or underlying feature.
      - Suggested Solution: Ensure that an appropriate structure or underlying feature is encoded.
      - Related Objects: FE/152 (540,2135140397,687) **DEPARE**
      - References: S-58, Ed. 6.1.0, check 1775  
S-57 Use of the Object Catalogue for ENC, Ed. 4.1.0, § 12.1.2 and 12.8.8

# The Graphical User Interface





# Review in ENC Designer

The screenshot displays the ENC Designer interface. The main window shows a map with various navigation features, including a red star-shaped light symbol and several buoys. The map is overlaid with a grid and various symbols. The left sidebar shows the 'Cells' panel with 'GB5X01NW' selected, and the 'Raster Images' panel. The bottom panel shows the 'LOG Files' section with the following entries:

- Dataset Entries : Warning 4
- Feature and Geometry Entries : Critical 68, Error 17, Warning 43
  - AtonEquipmentNoSupport : Critical 1
    - GB5X01NW/FE000000350 LIGHTS (Light) Aid to navigation equipment feature within a DEPART, DRGARE or UNSARE does not have an appropriate structure or underlying feature.
      - Reference: S-58, Ed. 6.1.0, check 1775
      - Reference: S-57 Use of the Object Catalogue for ENC, Ed. 4.1.0, § 12.1.2 and 12.8.8
      - The following objects are related:

# XML Log File Export

```
<?xml version="1.0" encoding="ISO-8859-1"?>
- <LogDocument Toolname="7Cs Analyzer" >
  <LogGroup Title="7Cs Analyzer © 4.0.0" </LogGroup>
  <LogGroup Title="GB5X01NW : Critical 68, Error 17, Warning 162" </LogGroup>
  + <LogGroup Title="Validation Parameters">
  + <LogGroup Title="Dataset Metadata">
  + <LogGroup Title="Dataset Entries : Warning 4">
  - <LogGroup Title="Feature and Geometry Entries : Critical 68, Error 17, Warning 158">
    + <LogGroup Title="AtonEquipmentNoSupport : Critical 1">
    - <LogGroup Title="InvalidFeatureGeom : Critical 65">
      - <LogEntry Severity="critical">
        <Category>Data Model</Category>
        - <Message>
          - <![CDATA[
            DEPARE must not be of geometry type Line.
          ]]>
        </Message>
        <Reference>S-58, Ed. 6.1.0, checks 20a and 517c</Reference>
        <Reference>S-57, Ed. 3.1, Part 3 § 3.9, 4.2.1 and 6.2</Reference>
        <Reference>S-57 ENC Product Specification, Ed. 2.0, § 3.3 and 3.9</Reference>
        <Reference>S-57 Use of the Object Catalogue for ENC, Ed. 4.1.0, § 15</Reference>
        <Reference>S-57 Supplement No. 3, ch. 3 § 3.3</Reference>
        + <ObjName>
      </LogEntry>
```

# Summary

- 7Cs Analyzer based on Nautilus is S-100 ready
- 7Cs Analyzer is fully compliant to the latest Edition 6.1 of S-58 ENC Validation Checks.
- 7Cs Analyzer is already capable of validating S-101 datasets to the extent that validation rules have been defined, and S-58 checks are applicable.
- 7Cs Analyzer performs hundreds of individual checks and uses the same validation engine for both S-57 and S-101 data products.
- S-101 module will be charged extra
- New licenses preferably as annual subscription

Thank you for your attention!  
Any questions?

