

S-57 to S-101 Converter

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Overview

- **Delivery Content**
- **Demo**
- **Findings**

Scope

- Covered by TSMAD22_DIPWG3-11.2A_S-101_Open_Source_Translator.pdf
- Prove that S-57 can be converted
- Provide test data to industry
- Open source
 - Co-funded between Esri and NOAA
- Still evolving

Delivery Content

- **MS Visual Studio 2010 projects**
 - Developed in C++ and C#
 - Can be compiled for both 32-bit and 64-bit OS
 - .NET 4 dependency
- **Install includes 2 executables**
 - Converter executable
 - ASCII dump executable
- **ArcGIS Viewer**
 - Utilizes S-52 Edition 3.2
 - Views both S-57 and S-101 cells

Executables

- **S101Converter.exe**
 - Batch process
 - Converts update files if they exists in the same folder as the .000 dataset
 - Multithreaded
 - Appends “__” to existing S-57 dataset name
 - Hardcoded to read 12012011_S101_FC_Ver_0.5.xml
- **S100Dump.exe**
 - Writes a S-101 .000 dataset to a .txt file to review content

ArcGIS 9X & 10.0



Demo

- **S-101Converter.exe**
- **S100Dump.exe**
- **ArcGIS Viewer**

Converter Documentation Notes

Overview

- **Document dependencies**
 - **Feature Catalog**
 - 12012011_S101_FC_Ver_0.5_XSL.xml
 - **S-101 Product Specification draft version 0.0.5**
 - **Part_10a_ISO-IEC_8211_Encoding.doc**
 - Version finalized in Victoria
- **Observations**
- **Recommendations**
- **Outstanding Items**

Dataset General Information

- **CSCALE**
 - An ATTR field is added to the record to specify the CSCALE value of the cell. This was done to preserve the original compilation scale value of the cell for display purposes.
 - Currently part of Exchange Set Metadata

Information Types

- Created two information types to preserve spatial attributes
- Used Metadata features with existing attributes for mapping
 - M_SREL - QUAPOS
 - M_QUAL - POSACC

Complex Curves

- **Evaluates all line and area records**
 - Builds a list of records with **10*** or more FSPTs
 - Increase pattern value will decrease complex curve records
- **Looks for repeating patterns of FSPTs**
 - Builds a list
- **Evaluates patterns against all line and area features**
 - Creates complex Curve Record when match is found
- **Builds CUCO (complex curve field) record for features**
 - Could contain complex Curve records and Curve records

***10 is an arbitrary number**

Feature Records

- The S-57 OBJL subfield is used to map directly to the S-101 Feature Catalog. If it cannot be found, an error message is generated and the feature is ignored.
 - For example: OBJL 136 - Tidal stream - harmonic prediction (TS_PRH)
- S-57 C_ASSO objects are not converted
 - Not in Feature Catalog
 - No error message
- Themes are not implemented
 - Awaiting TSMAD decision

Feature Records

Continued

- **ASCD (association code) and RLCD (role code) subfields are set to 401 and 404, respectively.**
 - **More clarification on this is required for the converter**
- **The converter creates UNSARE features when S-57 FLODOC, HULKES and PONTON features are encountered, with the same geometry, as these features have been removed from the SOE category in S-101.**
 - **TSMAD 21 decision**

Feature Catalog Version 0.8 - changes

- **Spatial Attributes**
 - Defined in Feature Catalog
- **Feature Associations**
 - Implemented
- **Complex Curves**
 - No longer limited
- **Final Feature Catalog Name**
 - Browse option will be added

Feature Catalog Version 0.8 – DSGI Changes

- **Data Set General Information**
 - **The following ATTRs were added**
 - **Producing agency**
 - **Comment**
 - **Issue date**
 - **Minimum display scale**
 - **Maximum display scale**
 - **Optimum viewing scale**
 - **Purpose**
 - **Specific usage**
 - **Update number**

Outstanding Items

- **CMFZ is current set to 10. Should be 100**
- **Encoding guide review (Jan 2012)**
 - **Might impact converter**
- **Needs more testing**
- **Distribute latest version before TSMAD 23**

Recommendation for IEHG

- **Work with Thomas Richardson (UKHO)**
 - Define your Feature Catalog
- **Run data through the converter**
- **How does the decision to add UNSARE decision impact IENC? Do you have your own special use case?**

Questions?

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