Teledyne CARIS Update and regional inputs

17th South West Pacific Hydrographic Commission (SWPHC) Meeting

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Presented by: Daniel Kruimel, Sales Manager Australia / New Zealand, Teledyne CARIS



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Introduction

- IHO S-100 Working Group (WG) has objective to develop and extend the S-100 Universal Hydrographic Data Model and S-100 based products
 - To support a greater variety of digital data sources, products and customers
- Examples of CARIS' involvement in S-100 WG include:
 - Development of encoding and portrayal for S-100, including S-101 ENCs
 - Validation checks for S-101 ENCs (equivalent to S-58)
- ~92% of hydrographic offices use CARIS for all or part of their workflow
 - CARIS solutions have been, and continue to evolve to provide agencies with tools to transition to S-100



Introduction

- S-100 Products
 - S-101 ENC

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- S-102 Bathymetric Surface
- S-111 Surface Currents
- S-121 Maritime Limits and Boundaries
- S-122 Marine Protected Areas
- S-401 Inland ENC
- S-402 Bathymetric Inland ENC

- S-102 overlay tiles in the St Lawrence seaway
- CARIS solutions have been available for several years for the hydrographic community to experiment with the creation of S-100 based products...



- Today agencies can take a hands-on approach to working with S-100
 - S-102 Bathymetric Surfaces:
 - Support implemented in 2012 for (Edition 1.0 April 2012 and 2.0 anticipated in 2019)
 - Production can be completely automated
 - S-101 ENCs
 - Support implemented in 2015 for the Draft specification
 - Ability to create sample S-101 ENC datasets
 - Export content to S-100 ISO 8211 ISO, or S-100 GML for use with other GIS





- S-101 ENC is now Edition 1.0
- S-101 ENC Module for CARIS applications to be available May 2019
 - Optional add-on to CARIS applications (e.g. S-57 Composer, HPD)
 - To facilitate the creation of S-101 ENCs (Edition 1.0)
 - Perform S-57 ENC (and other) conversions and mappings to S-101
 - Create features and attributes using S-100 encoding
 - Create new S-101 editions, but also updates and exchange sets





- S-101 ENC Module will allow users to access familiar tools to create features and attributes using S-100 encoding
 - Complex attributes
 - Multiplicity of attribute values
 - Boolean attributes
 - Data & Time Range attribute values
 - Feature names
 - Information objects
- Users can focus on learning the standard, and not on learning new tools





- Support added in HPD and Desktop tools for S-101 ENC production in July 2019
 - Optional S-101 ENC Module for HPD Sever to enable data creation, and to upgrade the data model to produce and manage S-101 ENCs
- Objective is to:
 - Allow agencies to start working with S-100 data and products in a database environment
 - Facilitate S-100 familiarization with existing database production tools
 - Start assessment of migrating S-57 data holdings to S-100...



- Migration of existing HPD data holdings available as of Q3 2019
 - Available as part of the optional S-101 ENC Module for HPD Server
- Performing automated / default conversion from S-57 to S-100 is part of the solution
- There may be other migration challenges beyond default conversion
 - e.g. inconsistencies in existing S-57 attribute values
 - Additional analysis of data holdings and customized mapping may be needed
 - CARIS can assist HPD users to overcome these challenges
 - Working with KHOA on their S-100 test bed project





- Objective is to provide users with:
 - Parallel production of S-101 ENCs, S-57 ENCs, and other products from the same source data
 - Ability to reduce duplication of data and effort with a database driven approach and automation
 - Solution to:
 - Meet current mandates and produce existing products
 - Produce new products and support new data users with the same resources





Learning resources for S-100

- S-100 Online Workshop
 - e-Learning for IHO S-100 standard and S-101 ENC product specification
 - Provides examples of creating S-100 products
 - Registration fee is waived for CARIS software users with active Software Subscription
 - Visit <u>elearning.caris.com</u> to register





Regional UGM's for 2020



S-100 UGM Agenda Register

Teledyne CARIS is pleased to invite you, as a member of the worldwide community of CARIS geospatial software users, to take part in the upcoming S-100: New Products, New Possibilities User Group Meeting and Seminar series.

In order to ensure that all CARIS users, and those interested in implementing CARIS solutions, can participate, three User Group Meetings will be hosted in different regions around the world:

The Netherlands

Singapore

Panama

Meeting Date: June 9-11, 2020

Meeting Date: July 7-9, 2020

Meeting Date: September 15-17, 2020



Regional UGM's for 2020

The three day agenda will include the following sessions:

•Journey to S-100: Current and planned pilot projects, roadmaps and initiatives

•S-100 in CARIS: Current and planned capabilities and workflows

•Preparing for S-101 ENC production: Considerations, and differences between S-57 ENCs and S-101 ENCs

•Automation from Ping-to-Chart: Opportunities to streamline production through automation

•Artificial Intelligence (AI) and cloud based services: Current and future applications for the marine environment

•Marine GIS and the broader view: Broadening the scope of data management

•Products and Services: Creation, maintenance and distribution of new products and services

•Getting Ready for S-100: What can you do today?



SWPHC Recent Activities

- Geoscience Australia Processing Pipeline
- Fiji Hydrographic Office Paper Chart Production
- UKHO Going digital







WHD 2020 Theme – Autonomy and Automation

- CARIS Onboard automation for processing in near real time
- Sonar Noise Classifier Al approach to cleaning sonar data for more efficient processing times
- S-100 Data as a service trial project with CHS and PRIMAR to serve











Questions? Thank You!

> Daniel Kruimel Sales Manager Australia / New Zealand Teledyne CARIS M: +61.450.802.039 E: <u>Daniel.Kruimel@Teledyne.com</u>





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