SevenCs Product Workshop
MARINTEC CHINA
December 2015

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Cliff Lim, SevenCs
Beijing Situo Ocean, SevenCs Reseller
Why Choose SevenCs?

- SevenCs has more than 20 years of Kernel experience
- More than 15,000 licenses from over 50 different OEMs use our Kernel
- More than 300 Kernel customers have chosen our product
- Relationships with over 40 leading Hydrographic Offices, Inland Waterway Authorities, Port Authorities and Commercial Organisations
- Active involvement in IHO working groups for the latest developments in regulations, standards, and applications
- Provide hardware, software, data for all your maritime needs
S-57 Kernel
ECDIS as a service
Electronic charts and publications
Customized chart production
Chart Distribution Solutions

Hydrographic ENC Tools
Specialized ECS software for Pilots, Inland and Navy
**ENC Production Tools**

Specialised suite of tools to customise your chart production process without unnecessary complexity and cost:

- Specifically designed for low and medium volume production environments
- Fast to implement, quick to learn and easy to use
- Modular software structure to ensure you only buy what you really need
- Developed especially for S-57 data production
- Supports latest editions of official S-57 based products (ENC, IENC, AML)
- Supports custom S-57 products (bENC, PENC)
- Very cost effective
- Possibility to evaluate the software without functional limitations
**ENC Production Tools**

- **ENC Manager**
  - Dissemination
  - Composition of S-57 Exchange Sets

- **ENC File database**

- **ENC Life Cycle Control**
  1. New ENC Edition/Update
  2. Data Capturing, Editing
  3. Data Optimization
  4. Quality Assurance
  5. New Editions / Updates

- **ENC Reference ENC Designer**

- **ENC Designer ENC Optimizer**

- **ENC Designer ENC Analyzer**
ECS Navigation Software

ORCA G2 ECS – three versions of our popular ECS designed for Military use, use by Pilots, and Commercial use:

- Auto-adjust of GUI controls for different screen dimensions
- Symbol filter to avoid clutter on the screen
- Adjustable colours and line thicknesses for safety contours, ships outline, EBL and VRM
- Recording of ships positions and AIS targets
- Supports use of official and private ENCs, Inland ENCs, AML, bENCs and Port ENCs
Over 1000 functions for chart display, chart handling, and navigation
Prefilled with SevenCs own small scale world data set
Available for Windows, Linux and Solaris
Integrated in many type-approved ECDIS applications
Constantly updated to reflect the latest chart display standards
Low entry development and run-time software licenses
EC 2007 ECDIS Kernel

- Electronic Navigational Chart (ENC)
- ARCS and BSB Raster Charts
- IENC Inland Module
- 3D Module
- Satellite Image Overlay
AML Display Module
MIL-2525 Module
VMap Display Module
DNC / TOD Module
DTED
ARINC 424-18
Improved chart rendering performance by 10 to 20% with help of multi-threading

Dedicated versions for Visual Studio 2010 and 64bit

A new set of raster symbols for very high resolutions (Full HD) is available

AIS and ARPA target symbol adjustments according to IEC 62288 Ed.1.0

New display category “Primary Chart Information Set” for Chart Radar Systems

Optional shift of centered chart symbols to avoid overlapping with own ship symbol

Translation functions for chart texts and pick reports

Improved AIS target management
EC 2007 ECDIS – Major Changes since 5.14 (July 2014)

- New S-63 convenience functions
- Handling of S-63 data servers chart portfolio, i.e. the S-63 products.txt
- Routes or leg lines with corridors of different widths are supported
- Support of Digital Terrain Elevation Data (DTED)
- Support of ARINC 424 aviation charts
- Revised and extended exception handling (SharpCoat)
Release in January 2015

- Improved danger highlight (IEC 62288, Ed.2)
- Improved display of centered symbols and texts
- Graphical indication of ENCs with expired chart permits
- Support of new AML 3 presentation
EC 2007 ECDIS Kernel 5.20 / SharpCoat 1.8

- Released in July 2015
- Driven by new editions of IEC and IHO standards
- IEC 61174, Ed.4
  - Definition and highlight of “Dangerous objects“ (Navigational hazards, areas for which special conditions exist and safety contour)
  - Definition of “Display Selectors” (chart settings)
  - Definition of viewing group layers
- IHO S-52 Presentation Library, Ed. 4
  - Indication of date dependent objects
  - Indication of update history
  - Pick report (displayed objects only)
Danger Detection and Highlight

Preslib 3.4

Preslib 4.0
IHO S-64, Ed. 3 (test procedures for S-63 chart handling and S-52 chart display)

- ENC Update history
- Revised and clarified tests

Support of Visual Studio 2013, openSUSE 13 and Red Hat 7

Includes test application for all S-64 Ed.3 chart display tests
EC 2007 ECDIS Kernel 5.20 / SharpCoat 1.8

- Includes new ChartHandler 3
ChartHandler 3

- Released in January 2015
- Type-approved (DNV) S-63 Ed. 1.1 chart handling
  - Indication of available but not installed charts (products.txt)
  - Indication of expired or upcoming (30 days) expired charts
  - ENC status report
- Operable by touch screen or mouse
- Chart installation during run-time of main application
- Chart installation from remote ChartWorld ftp server

New release in Q1 2016
  - S-63 Ed. 1.2 – Route based ENC status report
Includes “Manual Updates” and “Chart-1”
Nautilus

- C++, C# and Java programming interfaces
- Support of:
  - Desktop OS Windows, Linux and MacOS
  - Mobile OS Android and iOS
- Use of hardware accelerated drawing by supporting individual graphical engine programming for dedicated graphic interfaces
- Use of multi-threading technology
Nautilus

- New SENC format, optimized with respect to
  - File size, i.e. uncompressed two times smaller than EC2007 SENC, compressed four times
  - Access time
- Encapsulated chart product version handling (Feature Catalogues, Presentation Libraries)
- Advanced geographic calculation engine, based on EPSG
**Nautilus**

- **Version 1.0 beta (technical preview)**
  - Release in Q1 2016
  - Support of S-57 chart import and S-52 chart display

- **Version 1.0**
  - Release in Q3 2016
  - Support of S-63 chart encryption, automatic chart loading, danger checks

- **Version 2.0**
  - Release in Q1 2017
  - Support of S-100 based products, i.e. S-101 (ENC), S-102 (Bathymetric Surface)

Release dates refer to Nautilus C++, releases of Nautilus C# are three months later
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IHO S-100/S-10x Developments

**S-100**

- Data model and format, catalogue formats, portrayal mechanism
- Version 2.0 will be published end of 2015

**S-101**

- Product Specification for ENCs
- Feature Catalogue
- Portrayal Catalogue (not finished)
- ENC Protection Scheme (not started)
- Meta information, Encapsulation, Encoding
- Draft version
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S-100/S-101 Timeline

- **2nd Iteration S-57 to S-101 Converter**
- **Feature Catalogue Builder Prototype**
- **S-101 Simple Viewer**
- **Portrayal Catalogue Builder**
- **S-100/S-101 Test Cases Drafted**
- **Finalize Portrayal Section of S-101**
- **Complete Portrayal Section of S-100**
- **Prepare Test Data – Feature and Portrayal Catalogues and test datasets**
- **S-101 Test Bed Development and Iterative Testing**

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- **User Review and Input**
- **Final S-101 Stakeholder Review**
- **OEMs Develop S-100 ECDIS ENC Production Systems**
- **Converting S-57 or Full S-101 ENC Data Available**

**Year 1**
- **S-101 Draft Version**
- **S-101 Test Version**
- **Draft S-58 & S-64 for S-101 Available**
- **Sample S-101 Data made Available**
- **HSSC Approves S-101**
- **Release S-101 for Operational Use**

**Year 2**
- **Update S-57 to S-101 Converter and Make Sample S-101 Data Available for Review**
- **Update S-57 to S-101 Converter**
- **Member States Approve S-101**

**Updated October 15, 2014**
**ChartServer**

- WMS Server (1.1.1 and 1.3.0) for maritime and naval chart products
- Provided for Windows and Linux
- Extended proprietary GetMap parameter to support:
  - IHO S-52 chart settings (safety values, display categories, etc)
  - Object filtering
  - Chart rotation
- Support of navigation related projections, e.g. Gnomonic
- Support of multiple maritime and naval chart products, i.e.
  ENC, IENC, ARCS, AML, DNC/VMap, DTED and ARINC 424
- Includes ChartHandler 3, desktop chart viewer and “The Chart”
SevenCs World Data Set

- World Overview – Web (Pseudo) Mercator (EPSG 3857) [click]
- Mediterranean Sea – „The Chart“ [click]

Chart Settings

- Elbe mouth [click]
- Elbe mouth with chart settings [click]

ENC Overlay – Object Filter

- Elbe mouth – no land areas [click]
- Elbe mouth – object filter (only aids to navigation) [click]
Chart Products

- IENC [click]
- AML 1.0/2.1 test data [click]
- AML3 – Northsea [click]
- DTED - Europe [click]
- ARINC over DTED over ENC - Nice [click]
- Vmap 1 - Mobile [click]
ChartProjections

- Pseudo Mercator [click](#)
- Gnomonic (SevenCs proprietary) [click](#)
- Chart Rotation (SevenCs proprietary) [click](#)

Miscellaneous

- GetFeatureInfo (Pick report) [click](#)
- WebAdmin [click](#)