

NAUTILUS

ECDIS Kernel

SAR

Autonomous
Shipping

ECDIS

WECDIS

Risk
Management



Inland
Navigation

Data
Processing

VTS

Tactical
Systems

Situation
Awareness

Surveillance

propelled by **NAUTILUS**

Nautilus ECDIS Kernel is the next-generation software development kit (SDK) for maritime applications. This S-100 compliant flagship enables a multitude of maritime and military chart formats to be loaded; it also fulfills the IMO, IHO and IEC requirements for type-approved bridge equipment. The Nautilus ECDIS Kernel also provides the fastest and easiest chart-import technology ever, no matter whether used in ECDIS, ECS, shore applications, recreational products or tactical displays.

Overall, SevenCs combines the longest SDK experience in the market (more than 30.000 licenses sold worldwide) with cutting edge technology. Indeed, Nautilus ECDIS Kernel sets the new benchmark for maritime SDKs.

PRODUCT HIGHLIGHTS:

- S-100 compliant
- Peak performance (hardware accelerated rendering)
- Fast, easy and ready-to-use chart import
- Full military chart support
- C++ and C# programming interface

FUNCTIONAL OVERVIEW

TYPICAL APPLICATIONS

The Nautical ECDIS Kernel is not just for type-approved ECDIS and ECS applications but also for many other military, civil and offshore applications, such as:

- WECDIS, ECDIS-N
- Naval Combat Systems
- Vessel Traffic Service (VTS)
- Harbour and Coastal Surveillance
- Training and Simulation Systems
- Search and Rescue (SAR)
- Inland ECDIS/ECS
- Coastal ECS
- Recreational Navigation devices

SUPPORTED PROGRAMMING INTERFACE

- C++ (C++ 11)
- C# (Windows only)

SUPPORTED FUNCTIONALITY

The Nautilus ECDIS Kernel supports a wide range of core functions for:

- Chart Handling (loading, decryption, updating)
- Chart Display (automated chart selection depending on position and scale)
- Chart Object Handling (creation, manipulation)
- Flexible Data Query
- Anti-grounding
- Sensor Handling (NMEA, AIS, ARPA)
- AIS and ARPA target display
- Routing (planning, calculation, monitoring, recording)
- Geodetic calculations (Coordinate Reference Systems, Datum, Projections, Spheroids, etc.)
- Includes the EPSG Geodetic Parameter Data Set
- Geometric algorithms in the Cartesian coordinate space
- Extendable Interfaces for a lot of the functionality
- Display of Vector charts, Raster charts and Digital Terrain Models
- Weather Overlay

SUPPORTED OPERATING SYSTEMS¹

- Windows 7, 8, 10 (VS2017/2019/2022 – 64bit)
- Ubuntu Linux 18.04 (64-bit)
- Red Hat Enterprise Linux 8.1 (64-bit)

SUPPORTED CHARTS FORMATS

The Nautilus ECDIS Kernel supports a wide range of data formats for vector, raster and gridded data, such as:

- SevenCs SENC Format
- IHO S-100 Vector Data
- IHO S-100 Gridded Data
- IHO S-57 Vector Data
- VPF (Vector Product Format)
- GeoTiff
- DTED (Digital Elevation Data)
- GRIB (Gridded Weather Data)

SUPPORTED CHART PRODUCTS

- Electronic Navigational Chart (ENC)
- Inland ENC (IENC)
- Port ENC (PENC)
- Bathymetric ENC (bENC)
- Admiralty Information Overlay (AIO)
- Additional Military Layer (AML)
- Vector Map (VMap) Level 0, 1

SUPPORTED STANDARDS

- IMO Performance Standards
- IEC 61174 and 62288
- IHO S-100, S-57, S-52 and S-63
- EU Inland ECDIS Standard
- STANAG 4564 (WECDIS)
- STANAG 7170 (AML)
- MIL-2407 (VPF)
- MIL-89045 (GeoSym)
- MIL-89033/39 (VMap)

¹ - Subject to change

Grey text: Available in later versions