



# **NaAVIC Free ECS App and ENC Data Streaming**

IIC Technologies  
OGC meet

- Background
- NaAVIC App
- Nautilus Cloud Platform
- Key Innovations
- Future Possibilities
- Questions

- Current chart carriage requirements
- International Maritime Organization (IMO) and maritime regulations
- International Convention for the Safety of Life at Sea (SOLAS) sets minimum safety standards, including safety of navigation provisions in SOLAS Chapter V:
  - requirements to carry suitable up to date nautical charts and publications
  - rules related to Electronic Chart Display and Information System (ECDIS) - effectively ECDIS must be type approved, have an adequate backup in place, be adequately maintained, remain compatible with the latest applicable International Hydrographic Organization (IHO) standards and use up to date ENC data
  - implementation time lines - currently applicable to all vessels over 500 GT

- Role of International Hydrographic Organization (IHO)
- Existing data standards: S-52, S-57, S-58, S-63
- Global data coverage and mature distribution ecosystem
- Professional mariners are well aware of all data provisions and are able to benefit from all modern advances
- One SOLAS two different user communities
- Emerging S-100 suite of data products and case for real-time data access
- Room for improvement and innovation

# NaAVIC - Free Mobile ECS App



- Range of features to make recreational navigation easier, safer and more fun
- NaAVIC community to easily share experiences with friends
- Powered by Nautilus Cloud - native cloud solution streaming data on demand: ENC's, tide and current data, and satellite imagery
- Visit [www.naavic.net](http://www.naavic.net) for more info, user guide and download links



- Social media has facilitated collaboration, coordination, and community. NaAVIC provides features to ensure that these current norms of collaboration are easy to access
- A dedicated NaAVIC user community gives the ability: to post messages, to share pictures, to share location, to record and share voyages, to add user objects with location sensitive notifications.



# So, what is Nautilus Cloud?



**Nautilus Cloud** is a cloud based infrastructure for Marine Data, Solutions and Services for Government Organizations, Commercial Industry and Consumers

**Government:** HOs, National Institutes, R&D Organizations, Natural Resources, Environmental and Scientific Organizations, Inland Waterways

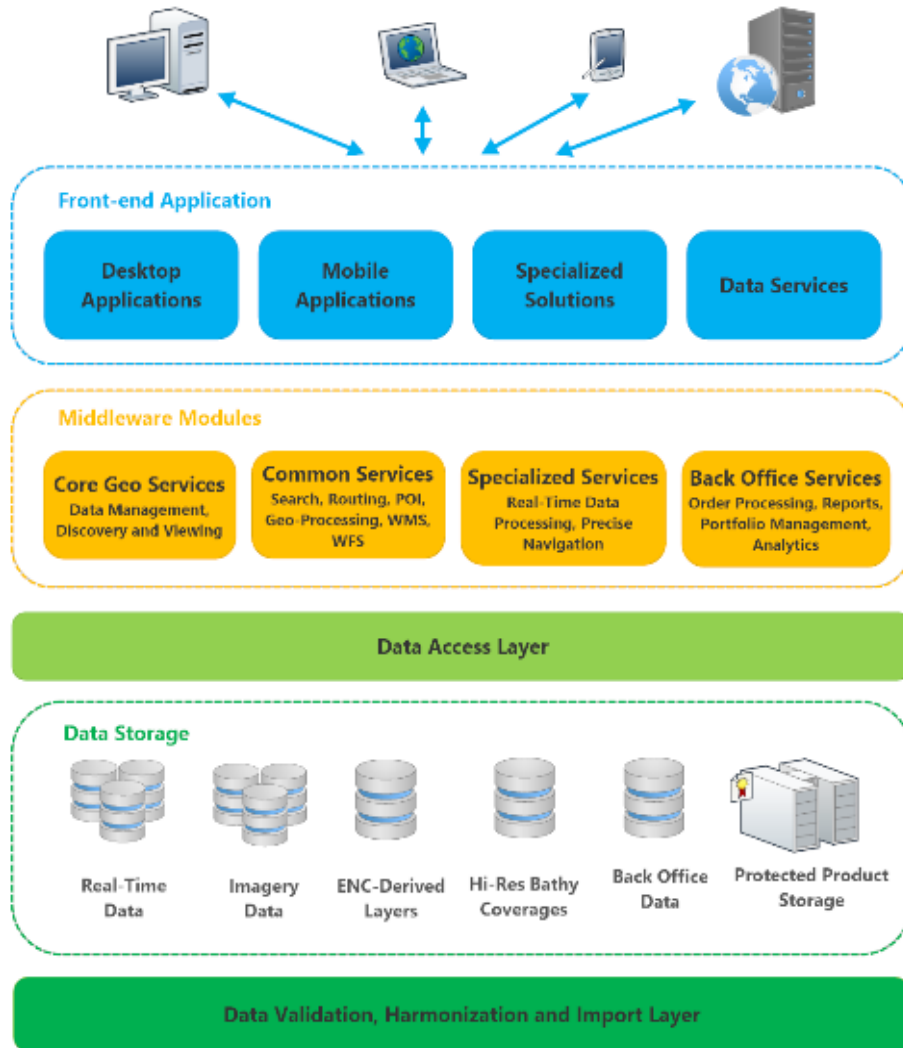
**Commercial:** Ports, Oil and Gas, Shipping, Dredging, Hydro Survey and Service Companies, Fishing Industry

**Consumer:** Leisure, Sports, Tourism

- Enterprise-grade and fully scalable
- Native cloud solution
- Platform independent
- OGC compliant
- Cloud or self-hosted



# Nautilus Cloud Architecture



Front-end Applications

Middleware Modules

Data Access Layer

Data Storage

Validation, Harmonization and Import Layer

- Data consolidation without files to install, data is 'just there' with offline mode available just in case if ever needed
- Experience sharing
- Unified Data Model for all marine data
- On demand, real-time online data access
- Consolidated data access API and easy data streaming supporting raster and vector web services
- Online data catalogues for easy data discovery
- “Cloud native” approach where the technology is built from components designed to run in cloud environments

- NaAVIC is a free and downloadable mobile ECS that represents a new approach to data distribution where the electronic chart data does not physically exist within the onboard computer.
- The app attempts to thrust the sailing experience several steps further with all the features it offers along and portfolio of streamed data services.
- The system provides a flexible business model by facilitating the ability to switch between free and cost-recovery models of data distribution as their requirements dictate using Nautilus, Cloud an enterprise-grade cloud infrastructure for marine data delivery.

- NaAVIC app mainly targets the NON-SOLAS user community however it showcases many advanced capabilities within both the app and the underlying Nautilus Cloud platform that could be very useful for the SOLAS community as well.
- It is our goal to see these innovations eventually transitioning into both communities as we believe they would benefit greatly all vessels alike.
- We aim to inspire both communities by showcasing that the possibilities of streaming marine data real-time, consolidating multiple data sources and providing consistent data access to them is currently achievable.
- These advances can be used to power the next generation of ECDIS and ECS systems untimely benefiting all mariners.

**Thank You!**