

AIS Secure Communication Solution

Shore-based AIS Solutions

Need:

Security is one of a nation's fundamental needs for all critical infrastructure, borders and coastline. The AIS broadcasting standard is a reliable source for information sharing between commercial ships at sea and between ships and shore stations.

However, organizations responsible for security and surveillance of coastal and inland waterways have a need for secure information exchange between their own assets in addition to normal AIS data exchange. Therefore, the ability for organizations to operate securely and send/receive encrypted messaging is critical.

Solution:

CNS Systems' Sentinel enables encrypted messaging, covert tracking of vessels and a common operating picture for all Sentinel participants utilizing AIS technology. Users can receive, schedule, and transmit encrypted messages to other Sentinel participants using standard AIS frequencies. An encryption key is used to encode all information that will be broadcast over the VHF data link (position reports, targets of interest, etc.). Receiving Sentinel systems then use the same key to decipher the secure messages. Only members of the network that share the same encryption key can see each other's AIS data and special messages.

Sentinel has three modes of operation: standard, silent, and secure. In silent mode, covertly track AIS targets without being detected. In secure mode, transmit secure/encrypted AIS information.

Sentinel is the secure communication module of CNS Systems' Horizon software, a shore-based vessel management solution. Horizon provides a complete AIS interface that includes the ability to view and track all vessels, display specific vessel information, and send and receive safety related and binary messages. Horizon's interface and display of AIS related information offers operators a substantial leap forward in their ability to communicate and interact with vessels. It has a normal appearance when not logged into Sentinel mode.

These secure communications and surveillance activities are made possible through the combination of AIS hardware, data management and software components working together. AIS data is received and transmitted via the VDL 6000/FASS base station.



CNS SystemsTM



AIS Secure Communication Solution

Components:

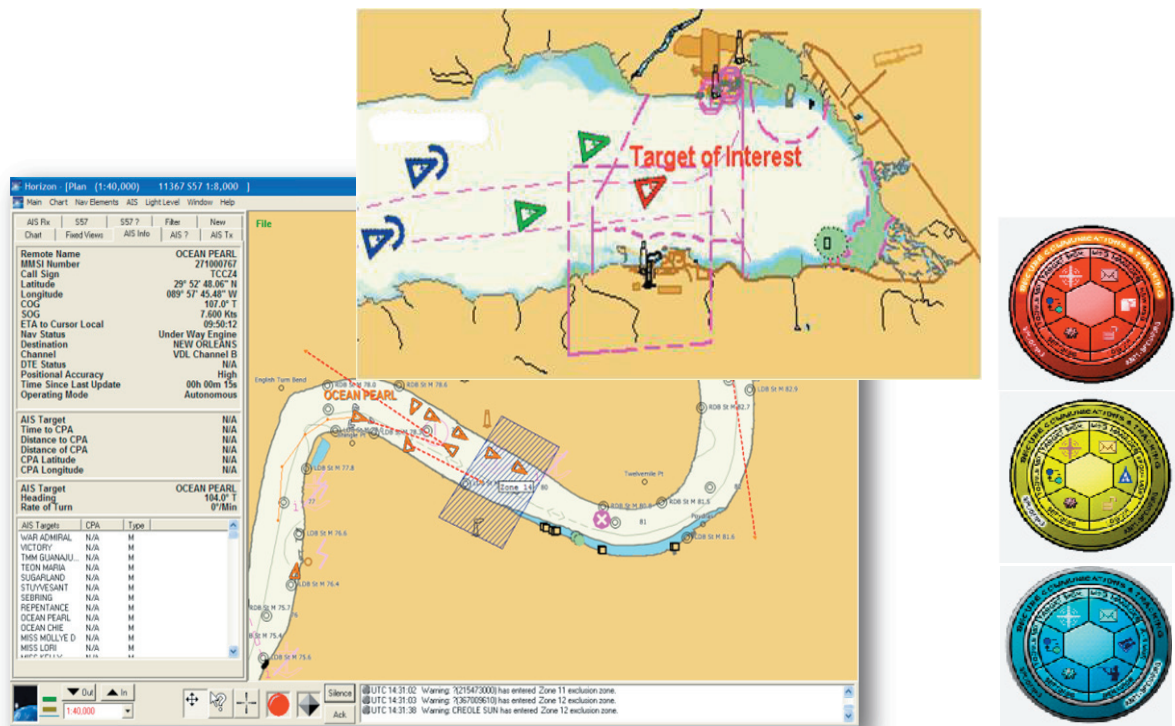
VDL 6000/FASS Base Station is a certified AIS Base Station. Compliant with all relevant AIS Standards, the AIS Base Station receives both standard and Secure AIS messages. AIS Data is forwarded to the Logical Shore Station (LSS) for data management and distribution to clients, data storage applications, and third party applications.

VDL 6000/FASS Base, Advanced or PSS units are available with the following capabilities:

- Configured as AIS Base Station, Limited AIS Base Station, Repeater Station, or AtoN
- Single or redundant configuration
- Remote functionalities available – base station configuration, software updates, virtual AtoN, power management
- Local logging of AIS messages
- Target filtering
- Replay AIS data
- AIS data catch-up

Horizon with Sentinel Module is an AIS surveillance, vessel monitoring and secure information software solution. Sentinel has an easy-to-use control panel that appears on the Chart/Plotter window.

- User authorization required to access and display Sentinel features
- Unique AIS target icons for commercial vessels, designated vessels of interest, and Sentinel participants
- Spoofing and Anti-Spoofing Modules available
- View, search, sort, filter and track vessels
- Display specific vessel information
- Transmit and display received ARPA and VTS Tracks, position reports, and text & data messages
- Fully user configurable display
- Set entry and exit alarms
- Configure guard zones for area that are dangerous, restricted, or need to be monitored
- Configure Target groups



Horizon with Sentinel and it's three modes: Standard, Silent and Secure.

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