



# GUARDIAN ASSET PROTECTION



## Virtual AIS Station

### Remotely transmits multiple Aids to Navigation (AtoN)

#### EASILY MAKE HAZARDS VISIBLE

The world's first Virtual AIS Station™ makes hazards at sea visible when costly physical infrastructure is not appropriate or is impossible to deploy. These electronic virtual markers are recognized by the International Maritime Organization (IMO) as a Virtual Aid to Navigation (VAtoN).

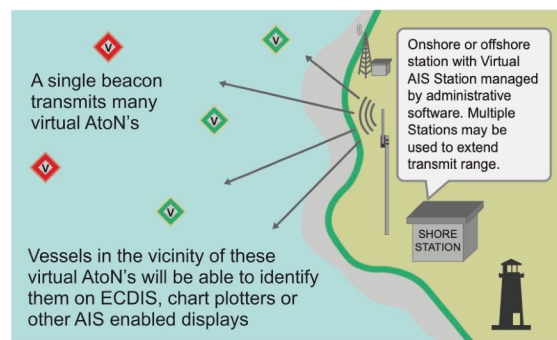
When a Virtual AIS Station electronically marks hazards they become visible on ECDIS, chart plotting and other AIS systems and can be used to prevent collisions and other marine accidents.

- Easy to install and maintain with very little user training
- Allows AtoN marks to be placed in locations where it is impossible to install physical markers
- A fast and cost-effective way to place up to 65 AtoN's
- Add, remove or change positions of markers according to changing conditions such as tide, wrecks or temporary safety zones
- Much lower cost than AIS base stations or multiple physical AIS AtoN's

Port authorities, companies and organizations with Oil & Gas, Offshore Fishing, Aquaculture or Marina operations can enhance safety and marine communications in a fast, efficient and cost-effective way.

#### USE CASE EXAMPLES

- Mark shipping channels to "join the dots" between physical buoys to improve shipping lane visibility
- Mark areas where navigation conditions change frequently. For example, overhead clearance, ice or water levels
- Mark both visible and invisible hazards, including platforms, bridges, piers, reefs or shellfish beds
- Mark moving hazards such as sand bars to regularly provide changes in location and provide alerts and warnings
- Create temporary cordons around hazardous spills, wrecks, marine protected areas, boat or yacht races and swim events



## KEY BENEFITS

### A Complete Shore Station

Using secure, encrypted communications, the Virtual AIS Station provides AIS source information for the Guardian Asset Protection service.

As a standalone shore station, the Virtual AIS Station enables you to:

- Mark hazards or protection zones providing visibility to vessels
- Monitor all AIS traffic in the vicinity
- Communicate using AIS alert messages sent directly to the vessel

When combined with Guardian Asset Protection, you can guard your marine assets 24/7 with smart rules Automating alerts to you and at-risk vessels.

## CUSTOMER EXAMPLES

### Perenco Oil and Gas - Africa

Perenco, an independent oil and gas company based in London and Paris with activities in sixteen countries owns and manages both onshore and offshore liquid natural gas (LNG) rigs. Instead of deploying a costly AIS AtoN on each rig, Perenco used a single Virtual AIS Station to electronically mark not only each rig, but anchorages and dangerous areas. This approach increased safety at the same time as reducing install and ongoing maintenance costs.



### Towed Streamers for Seismic Data

CGG operate the world's largest fleet of geological and geophysical survey vessels. These vessels tow an array of cables up to 5 miles long. Spanning an area of up to 3 square miles, this presented a large yet invisible hazard to nearby shipping, resulting in frequent damage and interruptions to operations.

Following successful trials of the the Virtual AIS Station on several vessels, CGG decided to implement the solution on all the ships in their fleet.



## TECHNICAL DATA

Access mode	RATDMA, FATDMA
Transmission mode	Type 3 AtoN operates in mode A, B or C
Radio frequency	Dual channel AIS transmit & receive. Default AIS 161.975 / 162.025 MHz
AtoN marks	Maximum of 64 (dependent on configuration)
Message formats	ITU-R M.1371 - Message 6, 8, 12, 14, 21 (others available)
Number of transmitters	1 x AIS
Number of receivers	2 x AIS, 1 x GPS (50 channel)
AIS receiver sensitivity	-113dBm
GPS receiver sensitivity	-142 dBm acquisition, -159 dBm tracking
Power supply	12VDC, 5A. Includes isolated AC power pack
Transmission power output	Configurable up to 12.5W (41 dBm)
GPS antenna connector	TNC connector – GPS antenna included with surface or pole mounting
VHF antenna connector	S0239 connector. 50 ohm, max 2:1 VSWR
Serial data	1 x RS232, 1 x RS422 (opto-isolated)
Networking	Ethernet optional (TCP/IP, SSL)
Size	162mm by 122mm by 90mm high (6.32" x 4.8" x 3.54" high)
Environmental	Waterproof (IPx7). Excluding AC power pack
Operating temperature	-25°C to +55°C (-13°F to 131°F)
Indicators	Multi-color LED indicators for power, status, transmit, networking and error
Compliance certificates	FCC, IC, CE, BSH, BABT, US Coast Guard

Standards:

- ITU-R M.1371, Technical characteristics for an automatic identification system using time-division multiple access in the VHF maritime mobile band
- IEC 62320-2, Automatic Identification Systems (AIS) – Part 2, AIS AtoN Stations – Operational and performance requirements, method of testing and required test results
- IALA Recommendation O-143: On Virtual Aids to Navigation
- IALA Recommendation A-126: On The Use of the Automatic Identification System (AIS) in Marine Aids to Navigation Services

IHS Safety at Sea Award 2012

