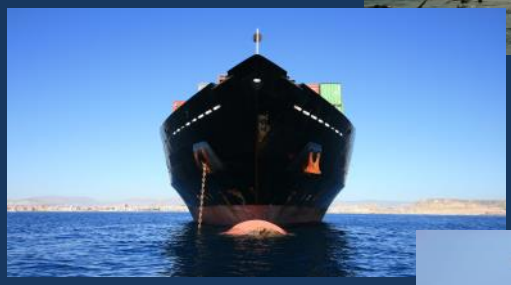
"Around 70% of all cable faults are caused by fishing and anchoring activities."

International Cable Protection Committee



Vessel movement monitoring and recording for submarine cable protection

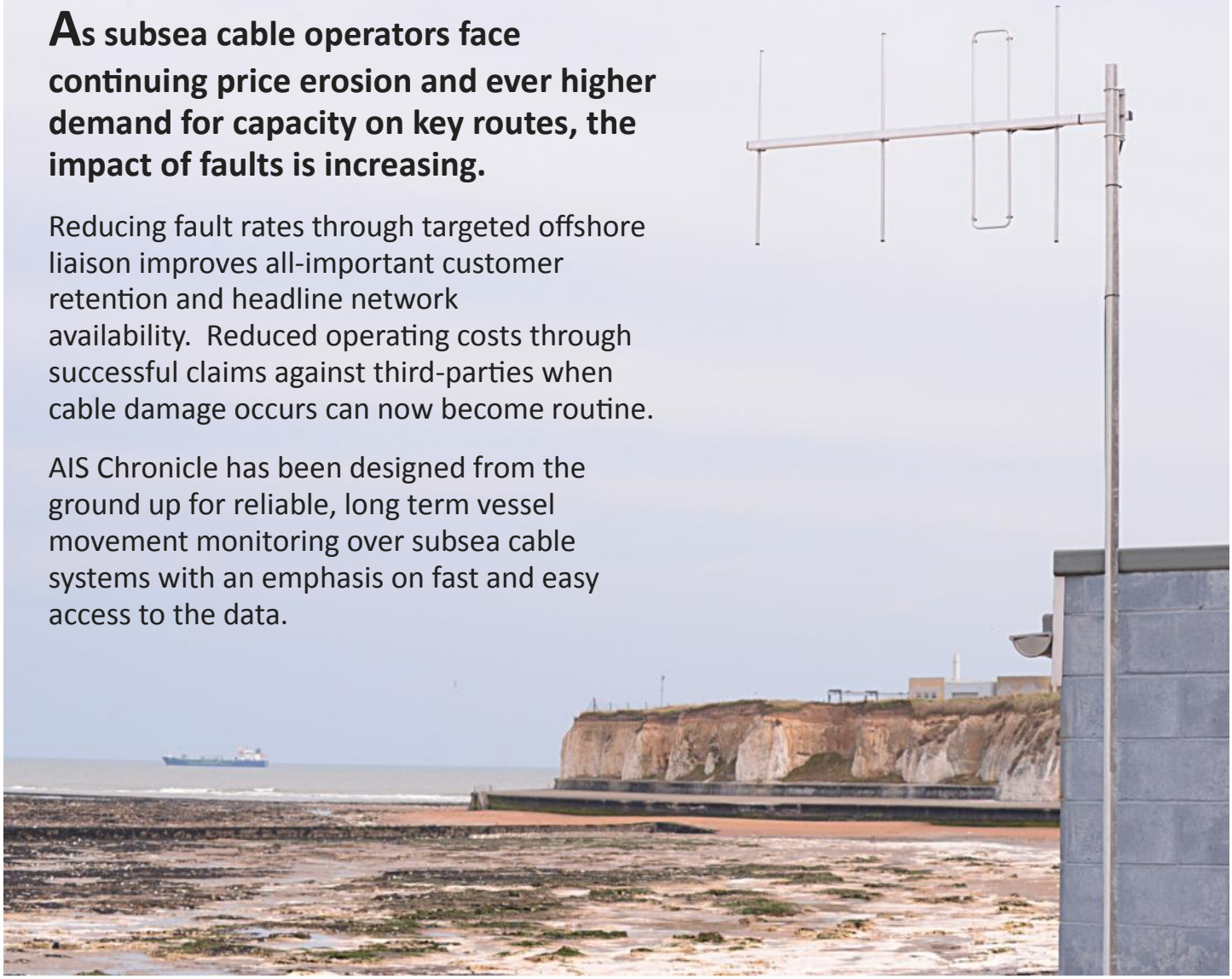
AIS Chronicle

www.aischronicle.com

As subsea cable operators face continuing price erosion and ever higher demand for capacity on key routes, the impact of faults is increasing.

Reducing fault rates through targeted offshore liaison improves all-important customer retention and headline network availability. Reduced operating costs through successful claims against third-parties when cable damage occurs can now become routine.

AIS Chronicle has been designed from the ground up for reliable, long term vessel movement monitoring over subsea cable systems with an emphasis on fast and easy access to the data.

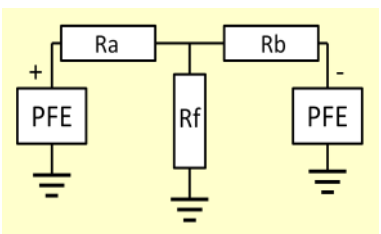


Reduce Subsea Cable Faults

AIS Chronicle identifies vessels operating over your cable systems. This enables targeted offshore liaison and dissemination of cable awareness information directly to the vessel's owners promoting safety at sea and reducing cable damage.

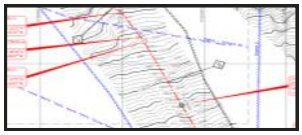
Support Claims

When cable damage occurs, use the data from AIS Chronicle to support your claim. The combination of targeted cable awareness information distribution and accurate, auditable vessel identity, position, speed, and course records puts compensation claims on a strong footing.



Reduce MTTR

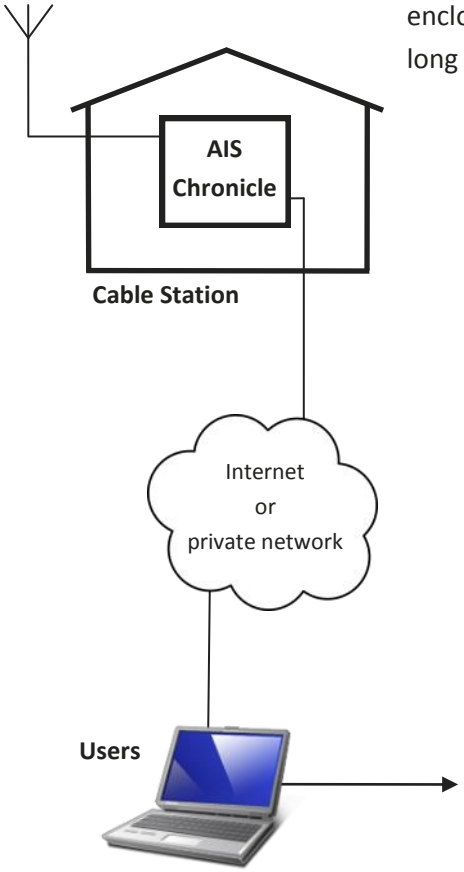
DC faults in submarine cable are notoriously difficult to locate accurately. Use AIS data to reveal the precise location of interaction between a vessel and the cable, reducing MTTR and the cost of marine repairs.

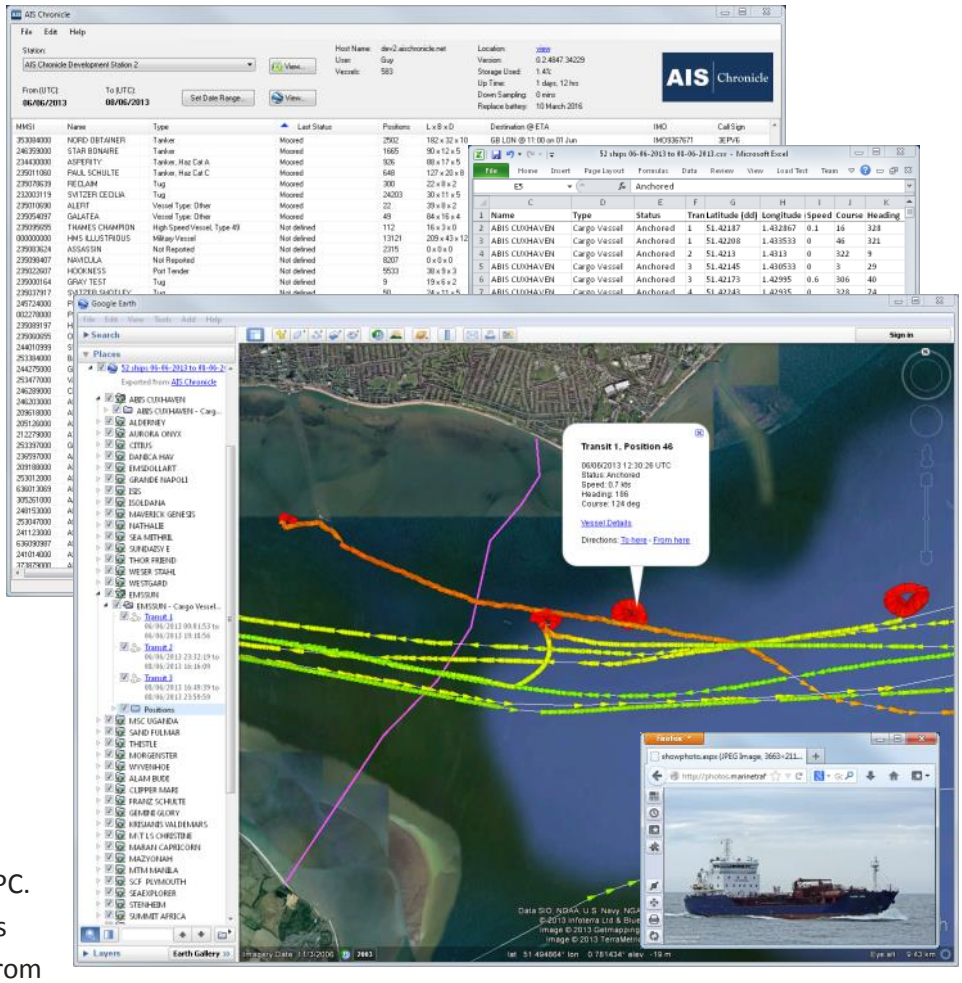


Enhance Cable Route Studies

Comprehensive cable protection starts at the route planning stage. Use AIS Chronicle to identify fishing grounds, uncharted anchorages and other hazards when planning new cable systems. Engage with other seabed users at an early stage by understanding who operates in your area and their vessels' activities.

The AIS Chronicle station uses solid-state, non-volatile memory to store the AIS data. The network connection is used only to download the data so short term network outages are not a problem. Rugged wall mounted steel enclosure and built-in uninterruptible power supply provide a reliable platform for long term AIS data gathering.





Windows® PC Application is freely downloadable for installation on any PC. A company-wide license is provided as standard. Retrieve data on demand from any number of your AIS Chronicle stations. Filter and sort the data and export for viewing and further analysis in Google Earth™ or other GIS, Excel® etc. Advanced voyage delimiting and down-sampling algorithms keep data sets manageable and provide intuitive representations of vessel movements.

About AIS

The Automatic Identification System is a maritime navigation safety communications system standardised by the ITU and adopted by the IMO. It automatically sends vessel identity, type, position, course, speed, and navigational status to other ships and shore stations. These transmissions can be monitored and recorded using AIS Chronicle.

AIS has been mandatory for vessels over 300 GT and all passenger vessels since 2004. In 2010 most vessels on EU inland waterways were required to fit AIS and the entire EU fishing fleet over 15 meters must fit AIS by 2014. In 2007, the new Class B standard was introduced enabling low-cost ship borne equipment triggering additional mandates and widespread adoption on smaller vessels.

The range at which AIS signals can be received is largely determined by the distance to the radio horizon which is determined by the height of the antennae. In addition, intermittent contacts can be made at much greater distances due to atmospheric conditions.

AIS Chronicle is supplied with everything necessary for easy installation including full documentation and comprehensive support. A mains power supply and network connection are all that are needed to start collecting AIS data for your cable systems. We also provide optional ancillary services such as targeted cable awareness information distribution, off-site backup to prevent data loss in the event of hardware failure and speed up downloads, and 24/7 monitoring for early detection of trouble with the station unit or antenna sub-system.

Vessel Movement Monitoring for Submarine Cable Protection

Features

Windows® User Interface
User friendly Windows® PC application downloads vessel movement data directly to your desktop on demand. Export AIS data in multiple formats for visualisation in Google Earth™ or other GIS applications.

Local data storage
Solid-state, local storage for zero data loss during network outages. Your data is your own, available 24/7.

High sensitivity receiver
Provides maximum range and coverage of your offshore assets.

High gain directional antenna
Selected to maximise coverage of submarine cable systems (other coverage patterns available).

Cyclic storage architecture
Never overflows, providing uninterrupted operation. Only the oldest data is overwritten when the storage space is exhausted.

Built-in high efficiency DC UPS
For immunity to mains power outages for up to 12hrs.

Integrated GPS time source
Accurate and drift free time standard stamps all received vessel positions.

Receiver/Antenna degrade warning
Proprietary algorithms provide early warning of antenna or receiver degradation or failure.

System monitoring and notifications
SNMP and Syslog compatible for early trouble detection.

Continuous NMEA output facility
Allows subscription to on-line services e.g. AISLive[1], AssetMonitor®[2], Marine Traffic[3] etc.

Backup server compatible
Continuous off-site backup capability guards against data loss.

Robust, all solid-state design
Steel enclosure and no moving parts for long term, low maintenance operation.

Automatic software updates
Software patches and bug fixes freely and automatically available.

Comprehensive documentation and support
Full installation and operation documentation provided.

Optional Ancillary Services

Vessel Advisory Service
Your cable awareness information sent to owners of vessels operating in the area of your cable system. Delivery confirmations recorded. Monthly/ weekly reports of all notification activities.

Off-site Backup
Automatic and continuous offsite backup of your AIS data

Monitoring Service
24/7/365 monitoring of the AIS Chronicle station equipment. We notify you by your chosen method in the event a malfunction is detected.

Specifications

AIS Chronicle Station Unit		
Power	Input	100 - 250 VAC
	Consumption	10W maximum
	UPS Battery	12V sealed lead acid 17AH capacity
	Off-line run time	Up to 12 hours
Receiver	Type	Dual channel (simultaneous reception)
	Sensitivity	Better than -107dBm at 20% PER
Environmental	Operating temp. range	-25 to +55 deg Centigrade
GPS	Type	20 Channel, SiRF StarIII chipset
	Sensitivity	-159 dBm
Antenna	Type	4 element Yagi-Uda
	Gain	7.5 dB
	Dimensions	2.0m boom length
	Feeder	50Ω LMR400 or equivalent
Network	Interface	IEEE 802.3 1000BASE-T, RJ45 connector
	Protocols	IPv4, TCP, SNMP, FTP, RFC 5424 syslog

Windows® PC Application	
Minimum system requirements	Pentium 1 GHz or higher 512 MB or more RAM 800 x 600 SVGA display (WXGA recommended)
Operating system	Windows XP SP3, Vista SP1, 7 or later, x86, x64
Export file formats	Keyhole Mark-up Language Archive (kmz) Comma Separated Values (csv) Tab Separated Values (txt)

Notes

Sea Reach Systems Ltd

Tel. +44 (0)1322 529629 www.seareachsystems.com

The Base, Dartford Business Park, Victoria Road, Dartford. DA15FS. United Kingdom.
Registered Office: Gwynfa House, 677 Princes Road, Dartford, Kent, DA2 6EF. United Kingdom.