



VER4000-S

Simplified Voyage Data Recorder

The Fourth Generation



Technology for safer seas

We can never make the sea calm, but we can make the ships that sail on it safer - by using advanced Voyage Data Recorder (VDR) technology to investigate and uncover the real causes of marine incidents. In this area, nothing is doing more to help the world's ship owners and managers than the pioneering range of Broadgate Voyage Event Recorders (VERs).



Unrivalled experience

For over 17 years, Broadgate Voyage Event Recorders have been fitted on almost every conceivable type of ship, including Ro-Ro ferries, bulk carriers, container ships, coasters, tankers and passenger vessels. As a result, millions of hours of operating experience have been acquired, experience which no other company in the world can match.

This experience has been recognised and called upon by both the UK Marine and Coastguard Agency and the International Electrotechnical Commission (IEC) during the process of developing and introducing international legislation for VDRs and Simplified Voyage Data Recorders (S-VDRs). Our world leadership in the development of VDRs is maintained through consistent and continuing investment in new technology and on-going research and development.

Worldwide service and support

This market-leading VDR is supported by a global service and installation network, which spans over 140 offices in 44 countries. Training and expansion of this network is an ongoing exercise, which continues to ensure that wherever a ship is in the world, installation, surveying and maintenance assistance is close at hand.

The VER4000-S

Following on from the VER3000 and with years of design and development work, we are proud to introduce the fourth generation VER4000-S Simplified Voyage Data Recorder. This new system records a vast array of onboard activity, including audio (both speech and ambient sound), radar, time, position, speed, heading, telegraph demand, engine and propeller activity, as well as a host of additional information.



THE FOURTH GENERATION

As every ship is unique, we have designed the VER4000-S to be totally flexible to allow easy integration into the many different systems that we have encountered. In order to achieve this adaptability and to allow user-friendly playback of the recorded information, our engineers break new ground at the cutting edge of technology.

This technology, now patent protected, gives unsurpassed advantages in recording onboard activity. Yet this range of capabilities has been achieved without sacrificing the key benefits of simplicity and reliability: the onboard equipment operates fully automatically, with no need for attention except in the event of an incident. The Broadgate VER4000-S complies fully with IEC Technical Standard IEC 61996-II.

A range of options and unique equipment interfaces

Our unique experience of Voyage Data Recorders means that the VER4000-S is available with a comprehensive range of equipment interfaces, including all current radar types and many types of data source. This means that systems can be installed on virtually any vessel without special engineering or development work.

The VER4000-S has been designed in a modular format that allows customers to maximise the benefits of installing a Voyage Data Recorder cost effectively. A range of options is available to allow each system to meet the individual requirements of a particular vessel.





In addition to a range of interfaces which ensure IMO/ IEC compliance, the following options are available:

- Float free capsule
- Recording of multiple video channels (additional radars, ECDIS, CCTV etc)
- Satellite download of data from ship to shore
- Extended data storage in the MEE and / or protective capsule
- Recording of additional data signals
- Live onboard playback facility
- Recording of additional communications signals

User-friendly playback facilities

The information recorded by our VER4000-S can be replayed on any standard desktop or laptop PC to precisely replicate a vessel's activity prior to and during an incident. The information is presented in a variety of ways, so that investigations can be completed efficiently and quickly without the need for specialised operating experience.

The benefits of our experience in helping users analyse recorded onboard activity are clearly demonstrated in the design of the VER4000-S playback system. Specially developed software, makes playback simple and user-friendly, with no sacrifice on performance.

The playback software runs in Microsoft Windows® and can be viewed on any standard desktop or laptop PC. Data can be displayed in multiple windows, each one being fully expandable. Fast forward and user-defined loop repeat facilities are standard, allowing investigations to be conducted rapidly and intensively. Audio-enhancement facilities allow very detailed analysis of recorded sounds.

The VER4000-S playback offers 'time-synchronised data fusion', with data taken from several sources combined and presented together, to provide a comprehensive representation of activity. A unique and highly innovative feature is the facility for trend analysis, enabling users to analyse vessel operational characteristics over a period of time, so that potential problems can be quickly identified and corrected.

Being software based, the VER4000-S playback system is highly transportable, so that investigations can be set up in the most convenient location, with no specialised support or installation facilities required.

Superior audio quality

In designing the VER4000-S system, we have paid particular attention to the quality and definition of audio recording.

Experience in analysing numerous incidents over the past decade has shown that good audio reproduction can speed up the investigation process, as well as making it more effective and efficient.

Comprehensive recording capabilities

The VER4000-S continuously records 12 hours of onboard activity to solid-state memory. Additionally, data is also recorded to a secondary removable (flash memory) source. The VER4000-S recording includes:

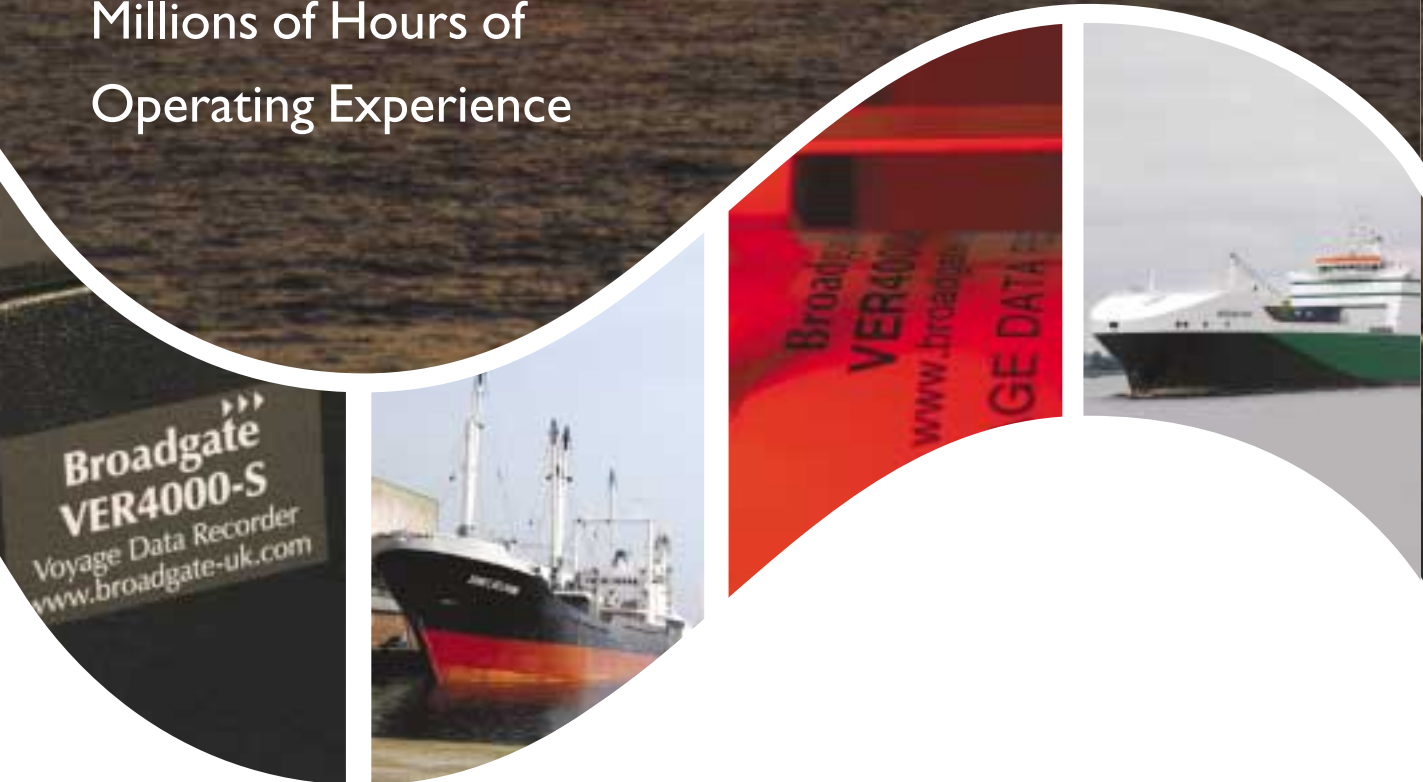
- Date and time - referenced to co-ordinated universal time (UTC)
- Ship's position - derived from a designated EPFS or INS if available
- Speed
- Heading
- Bridge audio - collected from up to eight separate microphones purpose designed for use with the VER4000-S
- Ship's VHF - communications relating to operations
- ARPA radar picture – unless no commercial off-the-shelf interface is available, in which case AIS can be recorded instead

The signals below need only be recorded if a 61162 (NMEA 0183) output is available:

- Depth under keel
- Rudder angle - both demand and achieved
- Engine order and response - including bow thrusters if fitted
- Hull openings status, where appropriate
- Watertight and fire door status, where appropriate
- Hull stress monitor outputs, where appropriate
- Wind speed and direction
- Specialised data option



New Technology Millions of Hours of Operating Experience



The Broadgate VER4000-S is manufactured in the United Kingdom by SELEX Communications Ltd. Founded in April 1900 as The Marconi International Marine Communication Company Limited, the Marine Division of SELEX Communications is unique as the only organisation in the world that has been continuously involved in the provision and support of maritime electronics since the inception of the very first marine radio. SELEX Communications is part of the Finmeccanica group, one of Europe's largest electronics and communications groups.



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