



When  
Safety  
Matters

 **Consilium**

## Business Concept

Consilium develops and markets advanced systems for Fire detection, Gas detection, Emission monitoring and the Navigation equipment such as radars, speed logs, ECDIS and VDR's for marine applications.

## Systems and products

Consilium is a high technology company that offers its customers advanced systems solutions for marine applications. Investments in product development is of high priority and new products continue to be introduced to the market.

## Operations

Operations are international, no single country can be regarded as a home market. Consilium's products are distributed on the marine market world wide through its two product companies, its 16 owned sales companies and the sales representatives in more than 40 countries.

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## Consilium Marine Group

Consilium is an advanced technology company, listed on the Nordic Stockholm Stock Exchange. Consilium has international operations and well defined market and product areas. A strong position is sought in each respective market area. In several of its market niches, Consilium is the market leader.

## Salwico Gas Detection Systems

Further strengthening Consilium's position as the world's largest supplier of gas detection system solutions, we see an increased demand for our products where our expertise and long-term support are a significant reason for choosing our equipment.

Consilium believes that a large organisation supporting all our activities, both centrally and locally, will be a deciding factor in the selection of supplier for a gas detection system.

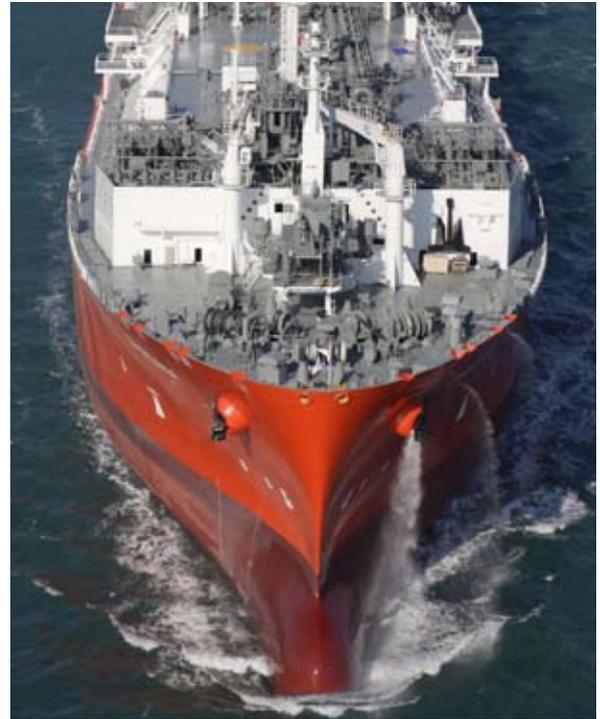
Apart from having a strong and competent sales organisation we also believe that customer feedback is an important factor for the development and support of systems to guarantee that customers' requirements and expectations are met.

Our current product range comprises of the sampling type system SW2020 and the unique loop-configured analogue addressable system GS3000. These systems have reached an unrivalled level due to their simplified design which features a minimal amount of hardware compared to other systems available on the market.

The Salwico gas detection systems are designed and developed to meet the requirements of all major classification societies. The systems are designed with user-friendliness in mind with self-instruction control panels.

Due to our experience gained delivering thousands of gas detection systems (since the late 1950's), we can propose

various standard designs and systems including the more specific requirements.



## Salwico Emission Monitoring System

Proudly presenting the latest addition to the Salwico product range we now introduce the world's only true continuous measuring NO<sub>x</sub>, SO<sub>2</sub> and CO<sub>2</sub> analysing equipment for marine applications. Unlike other competitors non-compliant solutions based on electrochemical sensor technology Consilium can, as the only supplier, provide a compliant solution based on the regulatory chemiluminescent technology as stated in the "Marpol Annex VI NO<sub>x</sub> Technical Code".

Experiencing a more firm demand from our customers also to include the NO<sub>x</sub>, SO<sub>2</sub> and CO<sub>2</sub> analysing capacity in some form into our Salwico product range, will be a logical extension of our business as this will benefit in a very positive way from our already learnt experiences over the years in more ways than one.

By adapting innovative design and combine that with our history of more than 35 years of experience in sampling technology used in some of our gas detection systems, we made it possible to offer a true and compliant system with capacity for NO<sub>x</sub>, SO<sub>2</sub>, and CO<sub>2</sub> analysis. In short time this is expected to be considered as the Standard of the market in the same way as our Salwico Fire & Gas Detection Systems have been for many years.

Coming from the world's leading supplier of Fire and Gas Detection Systems, this will be backed by our well-known and proven worldwide support in the same way

as for our other systems. We trust that our long-time experience and close relations and dialogue with users all over the world will be further strengthened by the addition of this all-new product range.

We look forward to discussing more in detail how we best can design a solution for your specific needs.



## Selesmar Radar Systems

### Selesmar Technologies

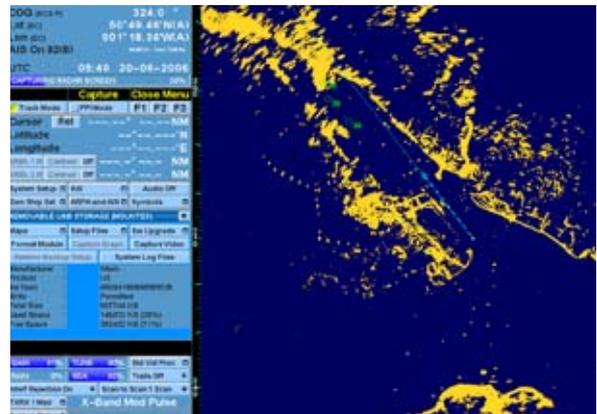
Consilium Selesmar stands for innovation and was the first company with high-resolution rasterscan ARPA radars. In addition the ECS technology was pioneered in the mid 1980's. During this period Selesmar became one of the world's first companies to deliver fully integrated navigation systems.

Selesmar radars are well known for their modular design, high reliability and flexible interfaces. Over 5000 Selesmar radars have been installed on ships around the globe.

The new Selux radar display is the 5th generation ARPA display with a versatile architecture open to software and hardware upgrades to facilitate the increasing demand for new navigational aids.

The electronics are characterized by a high level of integration, reducing the number of components to just one PCB. This provides increased reliability, limited need for spare parts, less maintenance and a lower life cycle cost.

A user friendly Man-Machine-Interface makes it possible to activate all functions by using the track-ball to point and click virtual push-buttons as displayed on the screen.



## Selesmar Radars in Vessel Traffic Systems

### Twenty years of VTS Experience

Since 1984 over 100 Unmanned and Remote controlled Radar sites integrated in larger Vessel Traffic Management Systems (VTS) have been delivered by Selesmar worldwide. Each one with a unique design and performance criteria.

Most of these installations are placed in congested ports and waterways while others are placed in coastal surveillance and on offshore platforms.



### VTS Usefulness

As the volume of world shipping rises, government authorities are establishing VTS systems at an increasing rate.

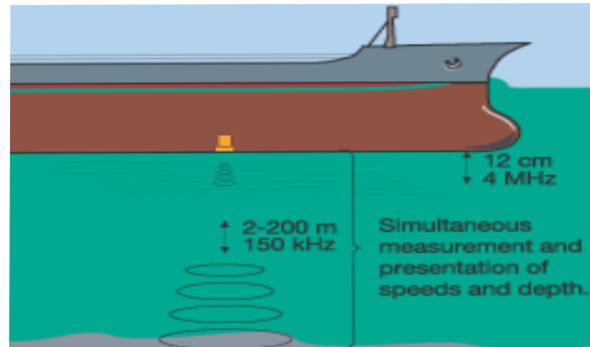
- The principal benefits that are gained from VTS are:
- Reduces risk of ship collision and grounding, there by safeguarding human life, marine life and property.
  - Improves the likelihood of successful search and rescue operations.
  - Enables vessel movements to be rationalized, meaning shorter turn-around in ports and greater throughput in restricted waterways.
  - Permits sensitive areas to be closely monitored by government authorities

# SAL Speed Logs

SAL Speed Logs are well established in the marine industry. More than 7500 systems have been installed since the first SAL Log based on the acoustic correlation principle was introduced in 1974.

The acoustic correlation principle gives the possibility, pending on the selected model, to measure simultaneously Water Track Speed, Bottom Track Speed as well as Depth with just one sensor.

The advantage of this technology means that only one hull penetration is required. This facilitates an easy design and reduces both installation and maintenance costs.



SAL Speed Logs and Echo Sounders					
Log Type	SAL RIa 	SAL TI 	SAL T2s 	SAL T2 	SAL T3 
Water Track					
Bottom Track					
Docking Log					
Echo Sounder					

# Consilium Voyage Data Recorders



## Consilium VDR and S-VDR

The Consilium Voyage Data Recorders, VDR M4 and S-VDR M4, are built and designed to be the most innovative and flexible platforms on the market. With emphasizing “Design for Assembly” we combine the latest technology with minimal movable parts. All systems are equipped with Flash and USB memories. The systems meet all relevant requirements of the IMO standards and EU directives i.e. IMO performance standard A.68(20), IEC 61996, IEC 60945 AND IEC 68-2-27 part 2 and are equipped with the Wheel Mark, EU Directive No. 1999/35/EC and IEC 61996-2 (Amendment for S-VDR).

VDR M4 – an innovative and flexible system, Consilium 4th generation Voyage Data Recorder. The system is designed to manage very fast and accurate new building installations.

S-VDR M4 – is a modular fully equipped Simplified Voyage Data Recorder with a basic specification well exceeding the market standard. The superior flexibility easily accommodates a wide variety of customer specific requirements without compromising performance and cost efficiency. The system is type approved with fixed capsules as well as float free alternatives. A cost effective plug-and-play Portable Black Box server (weight of 1.2 kg) with up to one year of recorded data is an option available.

VDAP (Voyage Data Analyzing Player) is Consilium’s powerful Playback software. An efficient and user friendly tool to replay and analyze recorded data for investigation and evaluation of events, incidents and accidents.

The software is able to show graphics and histograms. Each data window can be displayed in four different default views with a possibility to use “split window” modes, etc. able to show graphs and histogram, display data in four different default views and with a possibility to use “split window” mode etc. Instant Replay monitoring of voyage data solution.

## Salwico Fire Detection Systems for Cargo vessels



The CS4000 is our compact Fire Detection system, which is suitable for vessels in the merchant fleet. The system is a major enhancement of the well proven fire detection concepts incorporated in the CS4000 and the NSAC-1 systems. CS4000 can be supplied either as an analogue addressable version or as a conventional (16-48 sections) version. It can be centralized or distributed and the operator's panel can be located remotely from the rest of the cabinet/system/central, which solves the lack of space on modern bridges.

The combination of a big display and easy guidance instructions makes the Man-Machine-Interface very easy. CS4000 will definitely increase your safety onboard.

The ServoFighter is our response to customers having the need for a small, compact and high quality fire detection system.

It is a 4-section conventional version that can distinguish between the smoke detection alarm and the manual call point alarm per section.

The ServoFighter is easy to operate and cost effective, therefore it's extremely successful with smaller vessels such as fishing boats, tugs, yachts, dredgers, etc. ServoFighter will increase your safety onboard.

Features:

- 4 conventional sections with a capacity of up to 32 detectors in each section
- 2 monitored alarm outlets for sounders (24v)
- Possibility to handle gas alarm, bilge and other I/O:s



## Salwico Fire Detection Systems for Cruise and Ropax



For many years Consilium has delivered systems whose size and scope of supply well exceed your wildest imagination. All these systems satisfied the extremely high demands for safety (above SOLAS), redundancy and high quality. Today's systems are the CS3000 and NSAC-1.

For large vessels we normally design a distributed system with four to seven different central panels, each with its own control unit. These central panels are all fully updated and integrated parts of the same system, which gives optimal security. In case one panel is damaged another automatically takes over its functions. We call this function "Hot stand by". The Evolution series of analogue addressable detectors is an award winning development minimizing unwanted/false alarms on today's modern vessels.

To avoid unnecessary alarms the detectors will automatically adjust their sensitivity to adapt to the environment in which they are placed. The functioning of the detectors is electronically checked every 24 hours.

On large vessels the fire detection system can become an Integrated Safety System when interfaced to important functions like; Voyage Data Recorder, Fire Doors, Fire Dampers, Machine Sprinkler Installation, Machine Alarm System, Smoke Evacuation System and High Pressure Sprinkler System for accommodation areas. In order to meet our customers' demands Consilium offers a product called SMS (Salwico Management System). This is a graphic PC presentation of integrated control systems (incl control and monitoring) of large comprehensive safety and security systems for cruise vessels.



## Consilium Safety Systems for Yachts



In order to meet the demands from our customers within the Yacht and MegaYacht segment Consilium can offer:

- Speed logs (SAL RIA, SAL TI and SAL T2)
- Combined Speed log and Echo Sounder (SAL TI or SAL T3)
- Navigation radars
- Fire and Gas detection systems

Consilium can offer two Fire Detection solutions; One is the more sophisticated CS4000, an analogue addressable system with sensors indicating exactly where the fire is located. This system has a high degree of integrated safety and redundancy. The system has a very small operating

panel, which can be fitted on the bridge console separate from the central unit. The CS4000 is equipped with plenty of I/O-s, allowing large flexibility in interfaces and other signals between different systems. Design within this segment is of high importance and we offer our customers a wide range of detectors and the possibility to have specially coloured units to fit the interior perfectly.

The other is the ServoFighter, which is a conventional system offering a cost effective solution for less demanding situations with regard to accuracy and redundancy. This system delivers flexible I/O's with the same high quality standards as the CS4000. The ServoFighter detectors can only be delivered white.



## Consilium Military Marine Equipment

Consilium products are the natural choice for naval ships. Consilium's high standard commercial products are designed and delivered for both combat and auxiliary vessels. However, for some applications modifications have been made to accommodate the high military requirements. Deliveries are project based and made in accordance to high quality standards and strict logistic control.

Examples of COT and COTS and MOTS deliveries for surface ships and submarines are Selesmar Navigation Radars and SAL Speed Logs.

A specific navy design of the Salwico Fire Detection Systems has gone through an extensive design upgrade and thorough testing to satisfy the most extreme military specifications.

The Salwico Fire Detection Systems has been approved for installation on the latest generation of German built conventional submarines, as well as to several other prestigious naval projects.



# Global Service and Support



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