Integrated Surveillance Solutions
for Marine Environments
Proven solutions for marine environments and all types of vessels.
Synectics marine surveillance systems provide comprehensive protection and peace of mind.

Synectics has 30 years’ experience designing, manufacturing and deploying turnkey surveillance systems for a diverse range of critical environments. We excel at complex projects that require tailored solutions with high reliability and flexibility. Used around the world on LNG carriers, chemical tankers and other vessels, our security management systems:

- Protect crews and vessels from modern security threats, including piracy
- Manage health and safety risks
- Improve situational awareness

We support our customers through every step of a project, including system design, project management and configuration, giving customers confidence that the surveillance system will be engineered, configured and commissioned on time as specified.

**VESSEL TYPES**

- LNG and LPG Carriers
- Oil Tankers
- Chemical Carriers
- Drill Ships
- Container Ships
- Passenger Vessels
- Cable and Pipe Laying Vessels
- Support and Survey Ships
Synectics hardware and software products are developed in-house to be dependable, flexible and easy to use. Our marine surveillance solutions combine field-proven products, including COEX™ camera stations and Synergy 3 software, to create robust, integrated systems designed to maximise efficiency and effectiveness in harsh environments. Synectics specialist marine and Ex rated equipment is lightweight and manufactured to ensure maximum durability.

Synergy 3, our command and control platform, integrates to essential third party systems to enable seamless security and video management. Typical systems range from large quantity camera station supply, with multiple control / operator locations managed through Synergy, to smaller deployments using Synergy Compact or our Marine Video System Controller (MVSC). We also design accessories that are easy to install. This includes our monitors, which can be ceiling or console mounted, and composite cables that combine video, data and power requirements into a single, armoured solution.
SYNECTICS MARINE SYSTEMS

- Flexible and tailored solutions
- Developed from a proven range of products
- Easy to use
- Designed to save space
- Integration to VSAT and NMEA protocols
- Complete project support
- Global network of sales and service centres
- Solutions that meet ATEX directives and enable compliance with the International Ship and Port Facility Security Code (ISPS Code)
- Products that meet the environmental requirements of most ship classification societies—such as DNV, ABS, Lloyd’s Register
Ice Class Vessels

Footage from Synectics COEX™ C2000 fixed, PTZ and portable cameras, located throughout the ship, is streamed to key monitoring and control stations. Corrosion resistant, and operational at temperatures as low as -45°C (and up to +70°C), the C2000 camera stations can monitor and track both fixed and moving objects on deck or at sea, regardless of weather conditions or visibility for complete situational awareness.

Camera control panels and flat panel monitors on the bridge, integrated with ship audio communication links, provides real-time audio and visual information regarding the positions and activities of the deck crew, while also being able to detect ice hazards and guarantee safe navigation.
Synergy 3 is a powerful surveillance command and control solution that logically connects security events to video.

Synectics marine systems are built around Synergy 3, our comprehensive surveillance control and integration solution that enables video, security and process systems to be managed through a single, user-friendly interface. Synergy 3 offers innovative, centralised command and control, a professional management suite with unparalleled flexibility, security and scalability.

As well as bringing systems together, Synergy 3 automatically links alarm events to live and recorded video, and provides real time updates on the condition of all alarm, access and cargo monitoring systems. With its efficient and intuitive user interface, Synergy 3 streamlines access to commonly used system functions, accelerates operator response to critical events, and presents vital procedural information that operators need most. Custom workflows can be easily configured to lead users through standard operating procedures and supervisors can conveniently monitor system activity and override operator usage if necessary.
Integration to Key Marine Systems

Synergy 3 can interface with a wide range of critical marine systems. This includes VSAT equipment, which allows communication with onshore facilities and remote access to live streams, recorded video and camera control.

Other integrations available in Synergy 3 include:

- Radar
- Electronic Chart Display and Information System (ECDIS)
- Fire and Gas
- Cargo Monitoring
- Public Address
- Access Control
- Intruder Alarm
- Crane Equipment
- Automated Identification System (AIS)

Through Synergy, third party systems that transmit alarm data can be linked to video. In addition to the comprehensive list of existing Synergy integrations, custom interface drivers can be cost effectively developed.

Synergy 3 enables integration of our thermal camera stations to radar systems. This solution can be used to navigate through challenging Arctic conditions, monitor hazardous areas and can be a key component in counter piracy measures and threat detection.
Integrated System for Subsea Construction

One of Synectics’ high profile projects is a critical surveillance system for a multi-purpose construction vessel.

To ensure operators have the complete picture, the system has more than 50 monitor locations, many using Synectics Micro Display Wall units to show multiple camera feeds.

Integration to remotely operated underwater vehicle (ROV) control and pipe laying systems, as well as interfaces to the vessel’s video conferencing facilities are also included within the design and scope of this system.
Compact Security Management Systems

Synectics supplies a wide range of products configured for easy deployment in marine environments. Our surveillance products are designed to work seamlessly together and, when combined with Synergy 3, create resilient, powerful and future-proof solutions.

Synectics’ full range of COEX camera stations is complemented by single and multi-channel encoders that ensure the efficient and effective transmission of data across IP networks. We also provide complete review and recording solutions, as well as standalone devices like our enterprise-class video management and storage products. Synectics products save space, minimise installation work and offer immediate out-of-the-box performance.

We also continue to support traditional analogue technology with an ongoing integration programme and cost effective switching, telemetry and matrix solutions.

**Comprehensive Camera Systems**

COEX camera stations provide safe and hazardous area surveillance, which can include monitoring specific locations such as engine rooms, identifying equipment faults and aiding navigation.

The range contains analogue, IP, HD and IR options, as well as thermal and TriMode stations, which are capable of working in total darkness or through smoke and fog. The range also includes explosion protected camera stations, which are certified to Ex d standards.

**Designed for Every Application**

Our camera stations are ideal for marine environments and can be deployed on cranes or booms, as well as in other specialist applications. The COEX range includes PTZ and fixed versions, along with options for standard or inverted mounting. COEX camera stations are long-lasting and, thanks to low voltage motor controls and pre-heat technology, capable of operating in extremely low temperatures. Industry leading “smart move” technology provides operators with smooth and precise control, even at high zoom and long range, and ensures cameras accurately return to defined presets.

**Performance in Demanding Environments**

COEX camera stations are designed and tested to operate in the demanding marine environments.

Despite surveillance equipment generally being exempt, Synectics marine equipment is certified to meet the environmental requirements of most classification societies.*

- Ingress protection — IP66, IP67 & IP68 to IEC 60529 standard
- Temperature, humidity, vibration to DNV requirements
- Explosion protection — to ATEX, IECEx, CSAus and EAC-TR CU standards
- CE compliant EMC and electrical safety

**NOTE:** *Classification is a special type of certification particularly applied to marine equipment, with requirements set by the classification society—such as DNV, ABS, Lloyds Register.

**Standard Camera Station Features**

- Fast swap chassis for easy servicing
- Sunshields
- On-screen setup and diagnostic display

**Optional Camera Station Features**

- Wash and wiper systems
- Stainless steel junction boxes
IP camera options include Synectics 3MP to 5MP box, dome and panoramic cameras. To provide optimal indoor and outdoor video quality in harsh conditions, our cameras have moving IR cut filters and Wide Dynamic Range functionality.

**Easy-to-Use Software**

Synergy 3, Synectics’ field-tested software, can be supplied as part of a full equipment cabinet deployment or using Synergy Compact or our Marine Video System Controller (MVSC), offering superb performance in marine environments.

Both Synergy Compact and the MVSC retain key Synergy 3 features including:

- User friendly interface
- Wide ranging integration to other systems and equipment, including VSAT, ECDIS and radar

Synergy provides operators with quick access to the most important system elements, through large icons and a practical, uncluttered layout. This simple, core product is easy to install and suitable for any vessel type. It is a single rack item that offers encoding, recording and control from one, cost effective unit.

**Marine Accessories**

We invest as much effort in our accessories as we do in our core products. This includes our deep dimming monitors which are rack, wall or ceiling mountable, and dispatched with stylish black metal enclosures and multilingual OSD support. Our compact “plug and play” keyboards are USB powered and include an integral, three-axis joystick.

**PRODUCT HIGHLIGHT**

**TriMode Camera Stations**

COEX TriMode camera stations offer three modes of operating which combine day / night, mono and thermal imaging, providing the ability to see in any light condition at the touch of a button. These camera stations are utilised around the world protecting people, assets and processes.
End-to-End Service and Support

Synectics offers turnkey project support designed to ensure our solutions are easy to install and immediately operable.

Synectics is committed to providing customers with swift and focused support. We give customers direct access to our technical experts to ensure queries are resolved in a timely way.

From assistance drafting initial specifications to successful commissioning support, Synectics’ complete range of services includes:

- Flexible design
- Project management
- Comprehensive factory acceptance testing and configuration
- Full documentation
- Field support including commissioning and training

Our commitment to supplying spares and track record of supporting installations ensures reliable system performance for the lifetime of a vessel.

Delivering Cost-Effective Quality

To deliver the highest quality and reliability we design and develop our products in-house, with team members who have decades of industry experience and know our technology from the inside out.

We operate an assurance system accredited to BS EN ISO 9001 to make sure our equipment meets the highest industry standards. Synectics marine solutions are tested and configured before they are shipped from our facilities, making them reliable “plug and play” systems that are easy to install.

Flexible Frameworks for Major Shipbuilders

We offer shipbuilders a flexible and cost effective approach to selecting an appropriate solution for their project. To speed up system delivery, Synectics produces bespoke drawing packs complete with recommended electrical diagrams and product documentation. To further facilitate the process, we can support ship owners and port operators to meet the mandatory requirements of the ISPS Code. This includes assistance with security assessments, training and compliance to industry code levels.

Solutions are factory tested and arrive configured, saving valuable installation time.
Worldwide Service and Support
Synectics operates an international network of service hubs, support centres and agents. Whenever and wherever customers need support, expertise is available.

International Hubs:
- Europe
- Singapore
- UAE
- UK
- USA

Support Centres:
- Australia
- Brazil
- China
- Croatia
- India
- Korea
- Kuwait
- Malaysia
- Mexico
- Nigeria
- Norway
- Poland
- Qatar
- Russia
- South Africa
- Spain / Portugal
- UAE
SYNECTICS provides integrated, reliable and real-time surveillance systems that:

- Detect security threats
- Monitor hazardous areas
- Aid navigation

COEX hazardous area camera stations provide high-resolution images of manifold, cargo areas, bow thruster and incinerator rooms.

Audio systems are easily integrated, enabling engines and other equipment to be monitored and mechanical problems to be identified.

Durable and lightweight COEX camera stations improve visibility of mooring and winching operations.

Synectics stations can support 360° rotation and use pre-heat technology for maximum reliability in extreme conditions.

MARINE | LNG / LPG Carriers
COEX camera stations perform several tasks on these 210,000 m³ ships. Thermal cameras are used to locate personnel or intruders on the ship’s deck, helping to meet ISPS Code requirements. Cameras are also used as a navigational aid, allowing personnel on the bridge to view other vessels and even icebergs through smoke and fog, day or night.

PROJECT HIGHLIGHT

J5 LNG carriers
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Synergy 3 interfaces with VSAT equipment, allowing constant communication with onshore facilities. Synectics solutions also integrate with radar, ECDIS, fire and gas, access control and intruder detection systems. Reports and co-ordinates can be sent quickly to the bridge or other control rooms.

COEX TriMode camera stations monitor ice flows and detect spills. Through Synergy 3, operators can select colour, mono or night-time settings to ensure around-the-clock use.
Oil and Chemical Tankers

We supply solutions designed to meet the stringent safety requirements needed on board tankers.

Fixed COEX marine camera stations are compact, lightweight and ideal for monitoring generators and other emergency equipment.

With optional HD and thermal imaging, these stations bring high quality images into a Synectics surveillance solution.

COEX camera stations supervise critical zones, including bow thruster rooms. These stations use “smart move” technology, enabling variable speed control, to supply precise surveillance footage.
Synectics Synergy Compact offers excellent value when space is at a premium.

This simple, but powerful unit brings imaging, storage and management into one rack item, while keeping the core functionality found in Synergy 3.

COEX Ex rated products monitor external manifold areas and operators can view any location or object.

Our PTZ camera stations, known for unrivaled accuracy and repeatability, are capable of continuous pan rotation.

**PROJECT HIGHLIGHT**

**Solutions for Tesma / Samco Oil Carriers**

Samco carriers are equipped with networked COEX camera stations that cover the main deck and port and starboard sides of each vessel. Images are transmitted to the onboard control room via IP, where they are constantly monitored to ensure the health and safety of the crew and assist in docking procedures.

In addition, integrated audiovisual equipment, which monitors engine rooms and power units, allows potential problems to be identified quickly and costly downtime avoided.
Container Ships

COEX marine camera stations are easy to install and manage. They have a simple user interface and a fully programmable on-screen display.

In addition to their durable and lightweight construction, PTZ models are available in three speed options and a range of protocols for maximum flexibility.

COEX composite cable products combine power, video and data feeds into one armoured casing, providing a low cost installation and cabling solution.

Synectics monitors have easy-to-select deep dimming modes and are protected by tough black metal enclosures. This makes them suitable for deployment in all areas, including bridges and engine control rooms.

Simple video matrices provide compact control solutions, enabling live CCTV images to be distributed from camera stations to wheelhouses, ships offices and engine control rooms.
Synectics provides cost-effective CCTV solutions that combine simplicity and reliability with immediate access to live images from around a vessel. All Synectics systems meet mandatory ISPS Code requirements.

**Bespoke Systems for Hapag Lloyd**

Synectics has delivered a number of CCTV systems for Hyundai Heavy Industries, on behalf of Hapag Lloyd.

These include the Berlin Express, a 7,500 TEU container vessel with a capacity of 100,000 tonnes, as well as the Prague, Sofia, Basle, Budapest, Frankfurt and Vienna Express.

**COEX Marine Camera Stations**

COEX marine camera stations include fixed and PTZ versions, which support all transmission methods, including IP.

Camera stations are manufactured from electro-polished 316L stainless steel, for maximum corrosion resistance. They are ideal for deployment in foremast, main decks, astern, mooring stations and gangways.

**Project Highlight**

Container Ships | MARINE
Synectics designs integrated end-to-end surveillance control systems for the world’s most demanding security environments.

We excel at complex projects that require innovative tailored solutions with high reliability and flexibility, specifically for casinos, oil and gas, marine, public space, banking, transport and critical infrastructure applications.

With 30 years’ of high security systems experience, field proven products, and expert support personnel in the UK, US, Europe, UAE and Asia Pacific, Synectics offers its clients turnkey networked solutions for comprehensive protection and peace of mind.

Synectics’ Systems division is part of Synectics plc, a global leader in advanced surveillance, security and integration technologies and services.