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WIRELESS SAFETY

Marine Safety Solutions

Completely Wireless
Robust Mesh Network
Remote Monitoring via REACT

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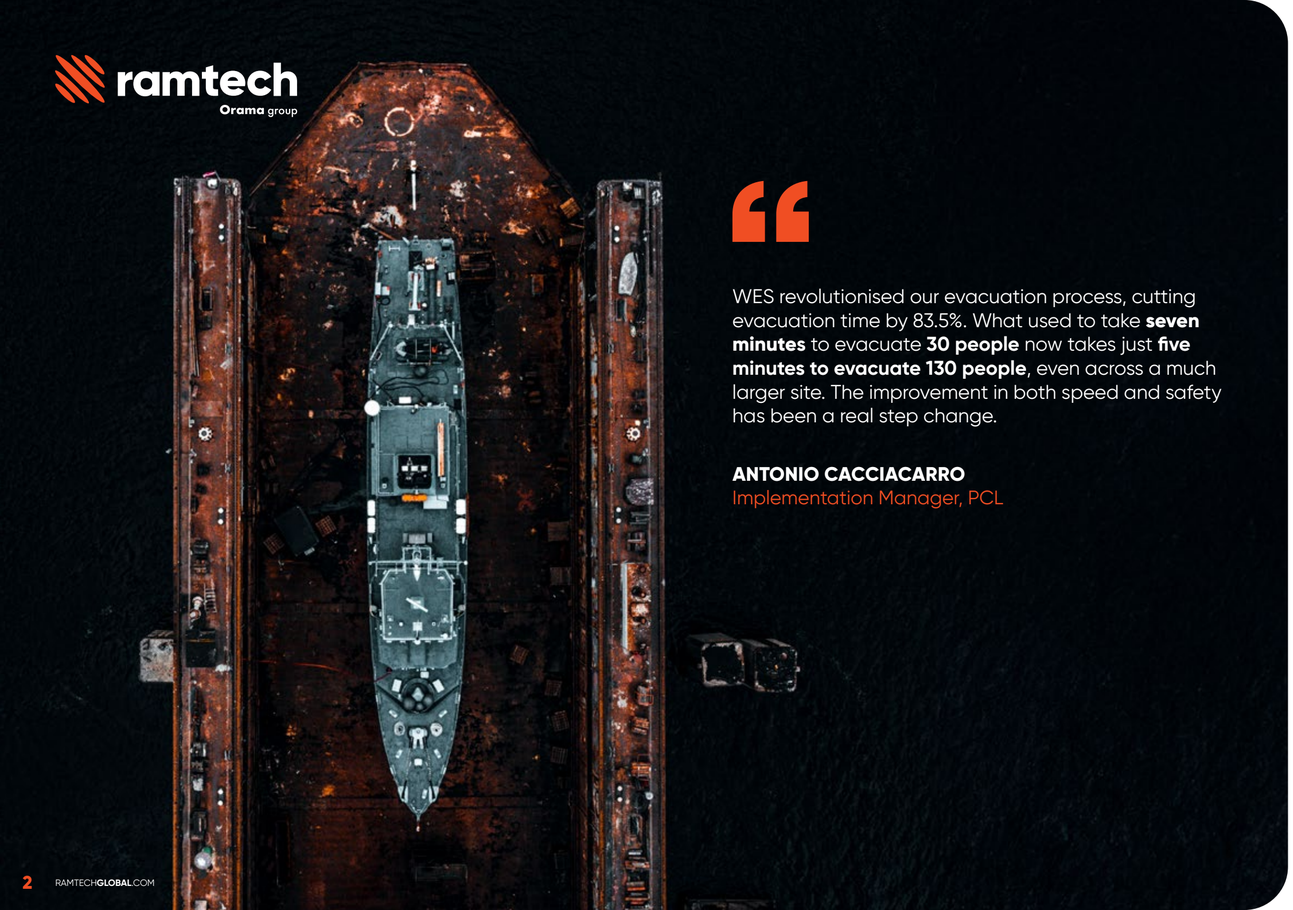

WES revolutionised our evacuation process, cutting evacuation time by 83.5%. What used to take **seven minutes** to evacuate **30 people** now takes just **five minutes to evacuate 130 people**, even across a much larger site. The improvement in both speed and safety has been a real step change.

ANTONIO CACCIACARRO
Implementation Manager, PCL

Marine Safety Solutions

Temporary fire and life safety solutions for shipbuilding and vessel maintenance projects

Shipbuilding and vessel maintenance projects present a uniquely elevated fire risk. Across both newbuild and maintenance, repair and refit works, vessels are often incomplete or partially decommissioned, permanent fire detection systems may be offline or not yet commissioned, and temporary power, hot works and multiple trades operate simultaneously within confined and complex spaces.

WES is a fully wireless fire detection and evacuation system designed to provide temporary fire and life safety protection throughout shipbuilding and maintenance operations. Battery operated and quick to deploy, WES delivers automatic fire detection, manual alarm activation and site-wide evacuation alerts without the need for cabling or fixed power, making it well suited to dynamic marine environments.

When connected to REACT, shipyards gain real-time visibility, alert escalation and remote oversight across vessels, docks and work phases. This supports faster response, consistent safety management and improved control throughout both the shipbuilding lifecycle and ongoing maintenance and repair activities.

Supporting fire and life safety across a wide range of vessels, including:

- Superyachts and luxury yachts
- Commercial and cargo vessels
- Passenger ferries and cruise ships
- Naval and defence vessels
- Offshore and wind support vessels
- Workboats, tugs and specialist craft

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Fire Safety Standards

Fire safety during vessel construction and maintenance is managed through workplace safety duties and shipyard fire risk controls, prior to permanent systems being commissioned or returned to service.

In the United Kingdom and European Union, fire safety during shipbuilding, refit, and major vessel works is governed by workplace health and safety legislation and enforced by national authorities.

During these phases, shipyards and duty holders must maintain appropriate fire and life safety arrangements, particularly where permanent onboard fire detection systems are not yet commissioned or are temporarily unavailable. Guidance from marine insurers and P&I Clubs also recognises the importance of effective fire detection and alarm arrangements during shipbuilding and repair activities.

United Kingdom

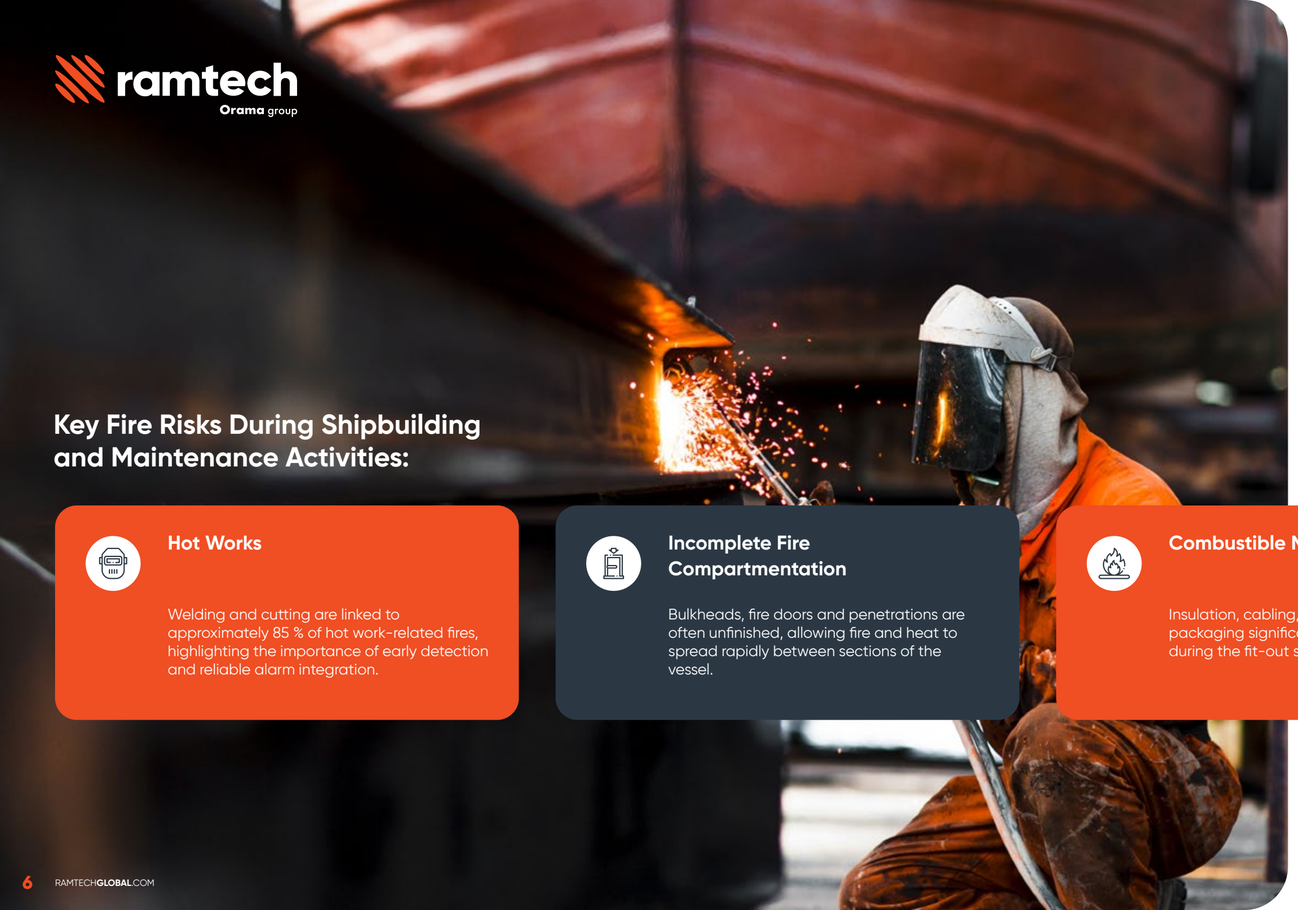
Fire safety during shipbuilding and vessel maintenance activities is managed under workplace and construction safety legislation, including:

- **Regulatory Reform (Fire Safety) Order 2005**
  Requires fire risk assessments and appropriate fire precautions in non-domestic premises, including shipyards and build environments.
- **Health and Safety at Work etc. Act 1974**
  Places a duty on employers to protect workers and others from risks, including fire.
- **HSE Fire Safety Guidance**
  Reinforces the need for suitable detection, warning and emergency arrangements based on site-specific risk.

European Union

Fire safety during shipbuilding and vessel maintenance is governed by EU occupational safety and health legislation, implemented through national law in each member state.

- **Framework Directive 89/391/EEC**
  Requires fire risk assessment and preventive measures during ship construction and maintenance.
- **Risk-Based Fire Protection**
  Fire detection and alarms expected where fire risk exists, including hot works and confined spaces.
- **Temporary Fire Safety Measures**
  Equivalent detection and alarm protection required where permanent systems are unavailable.



Key Fire Risks During Shipbuilding and Maintenance Activities:

Hot Works

Welding and cutting are linked to approximately 85 % of hot work-related fires, highlighting the importance of early detection and reliable alarm integration.

Incomplete Fire Compartmentation

Bulkheads, fire doors and penetrations are often unfinished, allowing fire and heat to spread rapidly between sections of the vessel.

Combustible Materials

Insulation, cabling, coatings, furnishings and packaging significantly increase fire load during the fit-out stage.

Temporary power and electrical installations

Provisional electrical supplies, portable equipment and temporary cabling increase the risk of faults, overheating and ignition.

Limited Visibility and Delayed Detection

Fires in enclosed spaces, voids and cable routes can develop unnoticed without effective detection, leading to rapid escalation.

Fire Risk

Shipbuilding and maintenance introduce elevated fire risk before permanent fire systems are commissioned.

During vessel construction and maintenance works, multiple high-risk activities often take place simultaneously within confined and partially completed spaces. Hot works, temporary electrical supplies and increased combustible materials create conditions where fires can ignite easily and spread rapidly, particularly if not detected at an early stage. Without effective temporary detection and warning arrangements, fires are often discovered too late, increasing the risk to personnel, the vessel and the overall project programme.

Marine Environments We Support

Fire and life safety across the vessel lifecycle

Marine projects move through distinct phases, from early construction to commissioning, maintenance and refit. Across these stages, fire and life safety arrangements must remain effective even as vessels, work activities and operational priorities evolve.

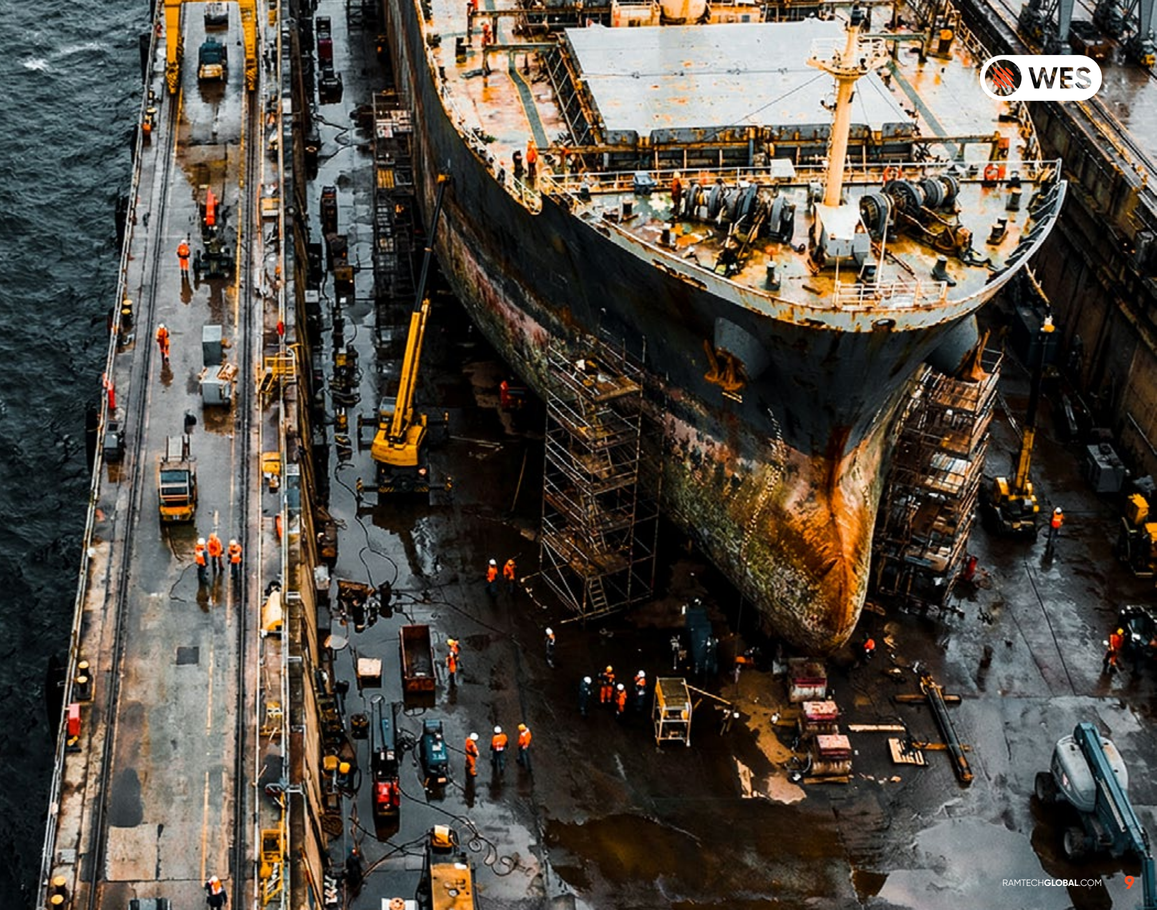
Our solutions are designed to provide consistent protection across the full vessel lifecycle, delivering dependable fire detection, clear alerting and coordinated response in environments where flexibility and rapid adaptation are essential. This ensures safety can be maintained without constraining construction, maintenance or operational progress.

New Shipbuilding

Protect vessels from first steel through commissioning with a fully wireless fire and life safety system. WES provides automatic detection, manual fire and medical alert activation, and clear evacuation alerting without the need for cabling, allowing protection to adapt as compartments, layouts, and work activities change throughout construction.

Maintenance, Repair and Refit (MRO)

Maintain fire and life safety during maintenance and refit activities where risks are temporary and conditions change daily. WES provides rapid, wireless fire, evacuation, and medical alert protection in areas where permanent systems may be isolated or unsuitable, supporting safe operations without disrupting vessel access or ongoing works.



Fire and Life Safety Solutions for Shipbuilding and MRO Projects

Fire detection, evacuation, and real-time visibility

During shipbuilding and MRO activities, fire and life safety arrangements must operate independently of permanent onboard systems and remain effective alongside active works such as hot works, temporary power, and phased construction or repair.

WES is used as a temporary wireless fire detection and evacuation system during these phases, providing automatic detection, manual alarm activation, and evacuation alerting without reliance on fixed cabling or permanent infrastructure. WES devices are certified to EN54-25, supporting reliable alarm communication in marine environments.

REACT extends the WES system beyond the vessel, enabling alarms and system events to be escalated in real time to authorised users. This provides clear visibility and coordinated response across vessels, docks, and work zones, supporting effective safety management from early works through to commissioning or return to service.

Did you Know?

All WES devices are EN54-25 compliant, providing wireless fire detection and alarm performance in line with recognised European standards.

System at a Glance

Robust Mesh Radio Network
Reliable wireless communication across steel structures and multiple decks, even as vessel layouts change during build and maintenance works.

Early detection
Automatic fire detection provides early warning while permanent onboard systems are not yet installed or commissioned.

Site-wide alerting
Clear alarms and evacuation alerts are delivered across the vessel to support fast, coordinated response.

Real-time visibility
Live alerts and event information are shared with shore-based teams for improved oversight and decision-making.

Built for harsh environments
Rugged, weather-resistant devices are designed to perform reliably in demanding and challenging conditions.

Full Connectivity for Off-Hours Protection
Supports remote alerting and monitoring to protect vessels during nights, weekends, and shutdown periods.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How the System Works

One connected system, from vessel to shore

WES devices are deployed across the vessel to provide local fire detection and alarm activation within active work areas, supporting immediate warning, evacuation, and response on board. REACT extends this capability beyond the vessel by escalating alarms and system events in real time to authorised shore-based teams. This provides clear visibility and coordinated response across vessels and work zones, supporting consistent safety management throughout construction and commissioning phases.

Connect Control Unit

Connect is the central control unit of the WES3 system, enabling full system management, real-time diagnostics and alarm activation across all connected devices.

Manual Call Point

The Manual Call Point allows a fire or evacuation alarm to be raised from any point on the vessel, initiating a site-wide alert. It also includes a medical alert function for immediate assistance.

Heat Detector

Heat detectors provide automatic 24/7 fire detection and are ideal for confined spaces, cable routes and hot-work areas where heat is the primary fire risk.

Smoke Detector

Dust-resistant smoke detectors deliver early fire detection in enclosed compartments, with reliable performance even in dusty working conditions.

Interface

Integrates WES with third-party systems commonly used in shipbuilding and MRO, including permanent onboard fire alarms, management and safety systems.

REACT

REACT is a cloud-based platform that delivers accurate, real-time and customised alerts to relevant personnel via a simple mobile app during a site incident or emergency.

In shipbuilding and overhaul environments, wired fire alarm systems can take up to two months to install. WES can be deployed within two days, providing early fire detection without delaying critical work.

Connect Control Unit

Central control and connectivity

WES3 Connect Control Unit acts as the central command point for the system, managing communication between all wireless devices deployed across the vessel. It provides local visibility of system status and events, allowing alarms to be acknowledged, monitored and managed on board while permanent fire systems are not yet installed or commissioned.

When connected to REACT, all alarms and system events are sent to the REACT cloud-based platform, where authorised users receive real-time alerts via the mobile app. This allows incidents to be seen and acted on beyond the vessel, supporting coordinated response by shore-based safety and management teams.

Key Functions of the Connect Control Unit

System Control
Provides a single point of control for all WES3 devices deployed across the vessel, maintaining oversight as layouts and risks change.

On-board Alarm Management
Allows alarms to be acknowledged, monitored and managed locally, supporting immediate response.

Connection to REACT
Enables alarms and system events to be shared with REACT, extending visibility to authorised shore-based safety and management teams.

Did you Know?

WES Connect supports multiple languages, making it easier for diverse teams to manage alarms, alerts and system information on board.

REACT Connectivity

Alarms and system events, including low battery and signal issues, are sent to REACT for real time visibility beyond the vessel.

LCD Display & Key Pad

Connect features an enhanced user interface, combining an alphanumeric keypad with a large colour LCD display.

Manual Call Point

Manual call point for fire, evacuation, and medical emergencies

WES3 Manual Call Points provide a simple and reliable way for personnel to raise alarms during shipbuilding and MRO activities. Installed at key locations across the vessel, they allow workers to quickly raise a fire, evacuation or medical alarm with a single press, supporting rapid response in high-risk work areas.

When activated, the alarm is transmitted to the WES Connect Control Unit, triggering audible and visual alerts across connected WES devices on board the vessel. This ensures clear warning and supports coordinated evacuation during construction, maintenance and repair phases where layouts, work zones and risk profiles are continually changing.

Raise fire, evacuation, or medical alert instantly with a single press of a button.

Integrated First Aid Button

Allows medical assistance to be requested immediately with a single press.

Durable and Weather-Resistant

Designed for use in demanding environments, with an IP55 rating for protection against dust and water ingress.

Loud and Clear Alerts

Equipped with a 94 dB(A) sounder and high-visibility strobe to ensure alarms are both heard and seen.

Fire Call Point Button

Enables immediate fire alarm activation.

Heat and Smoke Detectors

Early fire detection in high-risk work areas

WES3 Heat and Smoke Detectors provide continuous, automatic fire detection across the vessel. Designed to operate reliably in demanding marine environments, they support early detection within compartments, decks and work areas where hot works, temporary electrical supplies and combustible materials are commonly present.

By using a combination of heat and smoke detection devices, WES3 can be configured to suit the differing conditions found across a vessel as layouts and work zones change. When a detector is activated, the event triggers audible and visual alerts across connected WES devices on board, providing immediate warning and supporting a fast, coordinated response.

Did you Know?

WES3 dual-optic smoke detectors help distinguish genuine fire conditions from dust and airborne particulates, reducing false alarms.

Smoke Detector

Engineered for demanding onboard environments, the smoke detector provides early identification of fire conditions within compartments where activities, layouts and risks frequently change. With a coverage radius of up to 7.5 metres in line BS5839-1 guidance, it delivers flexible, adaptable protection as work progresses.

Heat Detector

Designed for environments where smoke, steam, or vapour may be present, these detectors activate at a fixed temperature of 57°C, reducing unwanted alarms while maintaining reliable fire detection. With a detection radius of up to 5.3 metres, they provide consistent coverage in high-risk areas.

WES3 Interface

Connects WES3 to other on-site systems.

WES3 Interface Unit enables WES to integrate with other systems commonly used during shipbuilding and maintenance activities, allowing external signals to be connected directly into the fire and life safety system.

Inputs from connected systems can be configured to trigger WES alarms in response to defined events, supporting coordinated alerting across the vessel during construction, repair, or refit. This allows WES to respond not only to its own wireless devices, but also to wider vessel conditions, extending temporary fire and life safety protection while permanent systems are not yet available or are temporarily out of service.

Supported System Connections

WES3 Interface can support a wide range of third-party systems, including:

- CCTV cameras
- Access control turnstiles and barriers
- Wired fire alarm systems
- Auto dialers
- Security monitoring systems
- AOV (automatic opening vent) systems
- Float switches
- Flood detection
- Sprinkler systems
- Gas, water or flame detectors
- BMS (Building management systems)
- Evacuation lights
- Temporary stand pipe flow switches
- Leak detection

Did you Know?

External system inputs integrated into WES can be escalated through REACT, maintaining consistent alarm visibility when permanent systems are unavailable or impaired.

REACT

Emergency Notification System

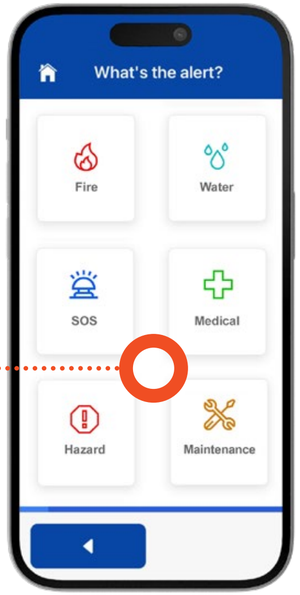
REACT is a cloud-based emergency notification system that works alongside WES to extend fire and life safety beyond the vessel. When a WES alarm is raised, the event is transmitted to REACT in real time, triggering notifications to authorised users via the mobile app. Each alert clearly identifies the type of incident and its location, supporting timely, informed response.

All alarms and system events are automatically recorded within REACT, providing consistent visibility, full traceability, and reliable reporting across marine projects.

- **Real-Time Alerts**
  Enables users to raise and receive alerts, supporting rapid response during critical incidents and emergencies.
- **Seamless Integration**
  Integrates with WES3, monitoring stations, and other on-site systems, with API connectivity to streamline management and improve operational efficiency.
- **Pinpoint Location Tracking**
  Location-based alerts provide clear visibility of where incidents occur, enabling faster and more accurate response.
- **Comprehensive Audit Trail**
  All incidents, alerts, and responses are automatically logged, supporting compliance, reporting, and informed decision-making.
- **Automated Incident Escalation**
  Critical alerts are escalated automatically to designated personnel and monitoring centres, supporting coordinated and timely response.

Additional Alert Types

Alongside WES alarms, REACT allows authorised users to raise app-based alerts for incidents such as water, medical, hazard, lone worker, and SOS events, with all activity recorded in real time.



Mesh Network Technology

Ensuring reliable and uninterrupted safety communication across dynamic marine environments

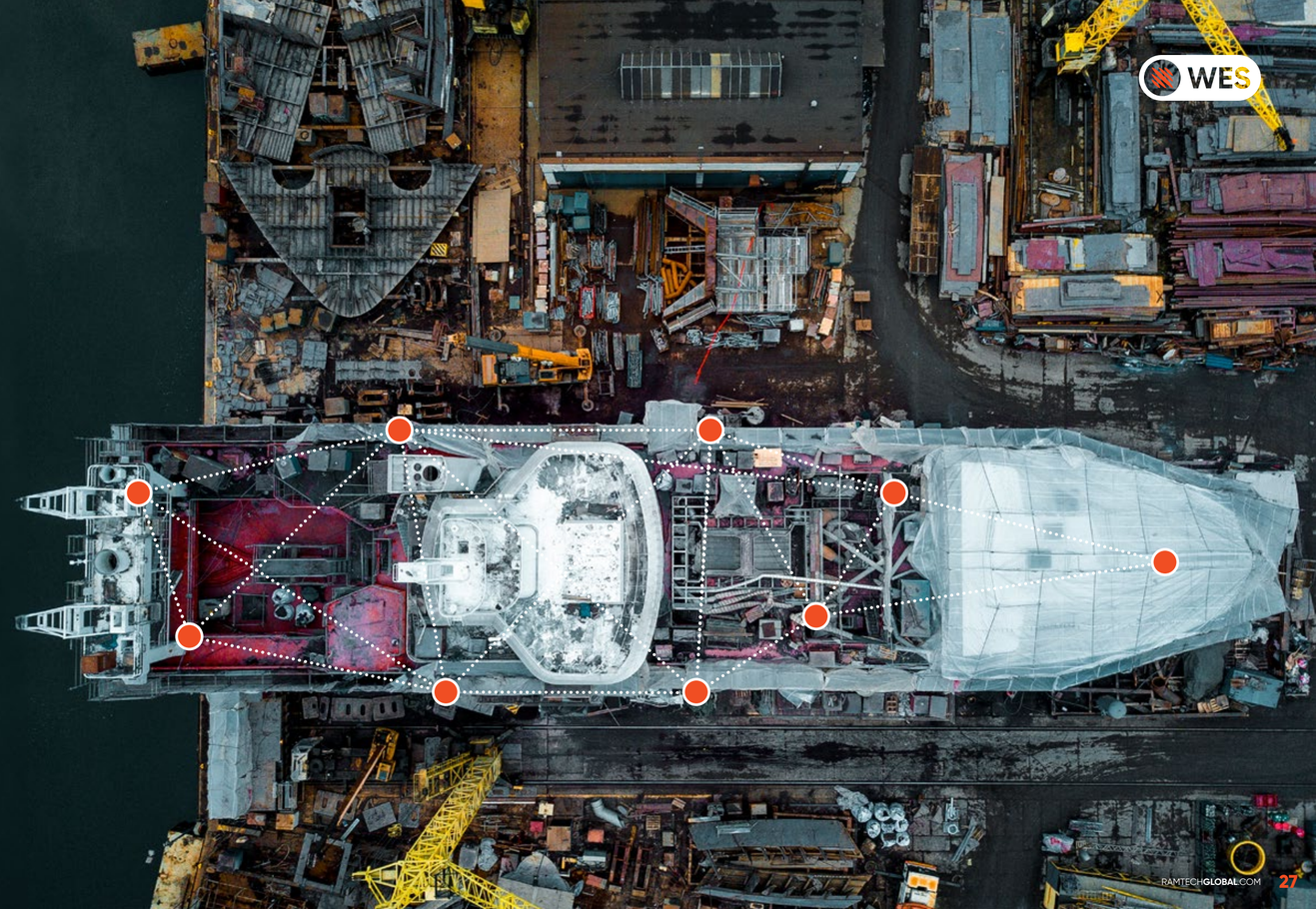
WES3 operates on a resilient mesh network designed for complex marine environments. Each device communicates directly with others, creating multiple signal paths rather than relying on a single control point. This approach maintains system integrity as vessel layouts change, compartments are opened or closed, and work areas shift during shipbuilding and maintenance activities. The result is consistent coverage and reliable alarm communication across dynamic shipyard and onboard environments.

Improved Reliability

The decentralised nature of a mesh network means there is no single point of failure, making the system more resilient to disruptions. This reliability is particularly important in safety-critical environments, where the ability to maintain constant communication between devices can significantly enhance overall site safety.

Stability

A mesh network is inherently scalable, allowing you to add more devices without compromising the integrity or performance of the system. As your site grows or your safety needs change, you can easily expand the WES3 system by adding additional detectors, call points, or other devices, knowing that they will seamlessly integrate into the existing network.

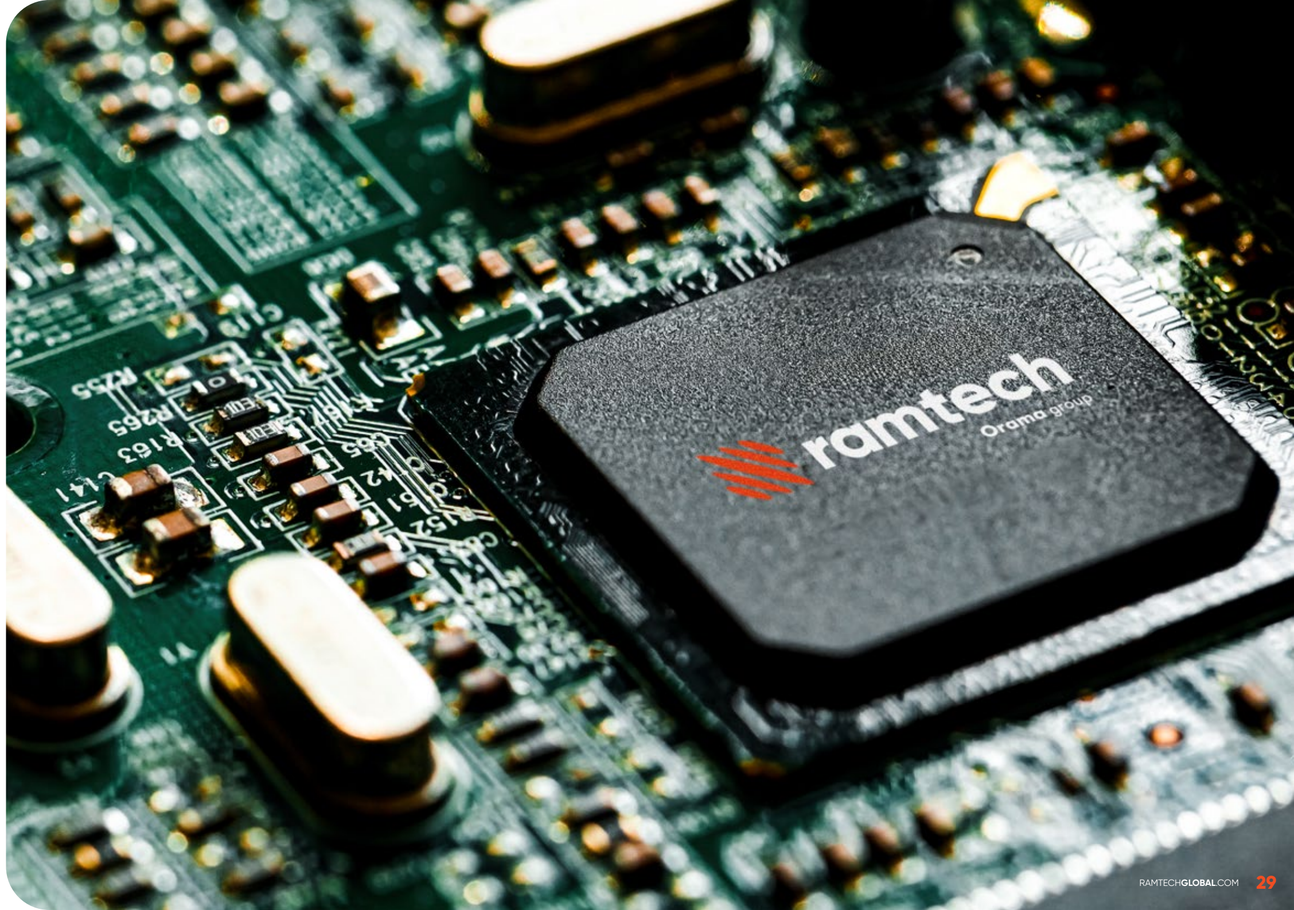


WES3 Technical Specifications

Comprehensive technical specifications for the WES3 system

Below are the key technical specifications for each WES3 device, providing the information needed to support informed decisions about temporary fire and life safety arrangements.

	Dimension (mm)	IP Rating	Noise Level	Compatible With	Operating Temperature
Call Point (Strobe & Sounder)	235x161x128	IP55c	94 dB(A)	Other WES3 Units	-25 °C to 70 °C
Heat Detector	235x161x118	N/A	N/A	Other WES3 Units	-25 °C to 70 °C
Dust-resistant Smoke Detector	235x161x108	N/A	N/A	Other WES3 Units	-25 °C to 70 °C
Interface	235x161x58	N/A	N/A	Relay input/output to connect to additional systems	-10 °C to 55 °C
Link	235x161x58	N/A	N/A	Other WES3 Units	-25 °C to 70 °C
Base Station	235x161x128	N/A	N/A	Other WES3 Units	-25 °C to 70 °C
Connect	235x161x128	N/A	N/A	Other WES3 Units	-25 °C to 70 °C



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Project References

Success stories

WES fire and life safety system has been successfully deployed across a wide range of projects and industries, demonstrating its flexibility and proven reliability. From shipbuilding and construction sites to heritage buildings and large-scale infrastructure projects, WES has supported effective fire and life safety management and clear, coordinated emergency communication in demanding environments.

Navy Transport Dock Ship

The US Navy chose the WES3 Wireless Evacuation System for a transport vessel with a capacity of 800 personnel and a length of 684 feet. Traditional wired systems were too costly and complex for the ship's layout. WES3, with its fast installation and encrypted mesh radio technology, provided a reliable and efficient solution for maintaining safety during maintenance and repair operations.

Super Yacht

During the refurbishment of a super yacht in Amsterdam, the WES3 system was installed to upgrade safety features. The installation included manual call points, smoke detectors, and heat detectors. Renowned for its ease of installation, the WES3 system was seamlessly integrated with minimal disruption, providing a reliable and efficient safety solution for the yacht.


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