

# Digital Aids to Navigation Systems

A new generation of digital navigation safety & efficiency for ports and waterways.



# About SRT



Our technology driven solutions digitise the marine domain and provide a new level of deep insight and understanding about the marine domain.

We continuously pursue new ideas and foster a culture of creativity. We seek and promote innovative solutions to bring real market differentiation.

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## Digital Aids To Navigation

## Innovation

We continuously pursue new ideas and foster a culture of creativity. We seek and promote innovative solutions to bring real market differentiation.

## Quality

We set the highest standards for product performance and reliability, and we aim for excellence in everything we do. Quality drives customer satisfaction and in turn our success.

## Responsibility

We embrace individual responsibility to deliver our commitments, and we support each other in achieving our goals. Through this we build a culture of mutual trust and confidence.

## Team

We are team and succeed only when we work together. We possess diverse skills and experiences which when combined bring outstanding results. We work collaboratively, respectfully and honestly.

## Ambition

We aspire to global leaders and strive to build products and deliver service which exceeds our customers' expectations. We are ambitious, proactive and pursue excellence in everything we do.

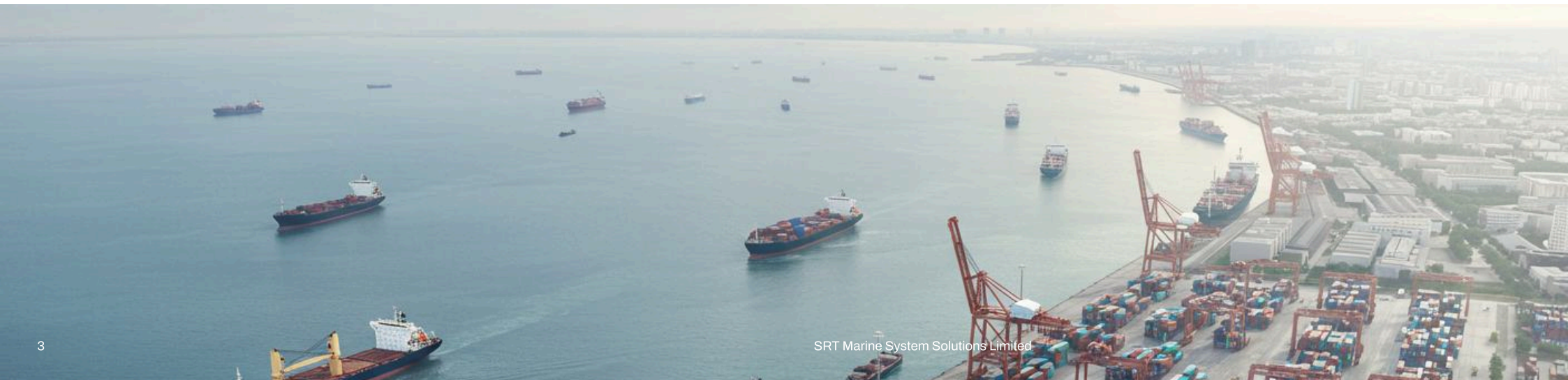
# What are Digital Aids to Navigation Solutions

## The benefits


### A new generation of digital navigation safety & efficiency for ports and waterways.

Digital Aids to Navigation are electronic devices that transmit vital information to vessels and control centres, significantly enhancing navigation safety and efficiency. Digital Aid to Navigation systems use digital technology to broadcast information like buoy locations, lantern health, precise local depth, weather & tidal conditions, and potential hazards.

This information is displayed in real-time on vessel navigation systems and port authority monitoring systems, enabling mariners to make informed decisions and avoid risks. Digital Aid to Navigation systems offer advantages such as greater clarity of information, immediate identification of hazards, and improved response time to emergencies.







A new generation of digital navigation safety & efficiency for ports and waterways.

01

## Safety

Digital marking of designated sea lanes, infrastructure status and hazard information. Increasing safety and sustainability of vessels and marine activity

02

## Environment

Reduced accidents combined with active pollution & emissions monitoring help protect the environment.

03

## Efficiency

Improved vessel routing, docking and information on the status of relevant infrastructure such as tidal bridge clearances and lock status all improve operational efficiencies.

04

## Risk

The availability of high quality reliable navigation information significantly reduces risk as well as associated liabilities.



# Benefits of using DAS Solutions

Utilising digital aids to navigation systems technology, we are creating safer waterways by clearly identifying safe navigation lanes.



## SRT Digital AtoN Products

Your safeguard for safer seas and reduced liability. These systems mitigate risks, improve operational efficiency, and protect both lives and the environment.

## Benefits



### Accurate Positioning

Provides precise positioning data, enabling safe navigation, especially in challenging conditions.



### Real-time traffic awareness

Offers real-time information on vessel traffic, reducing risk of collisions.



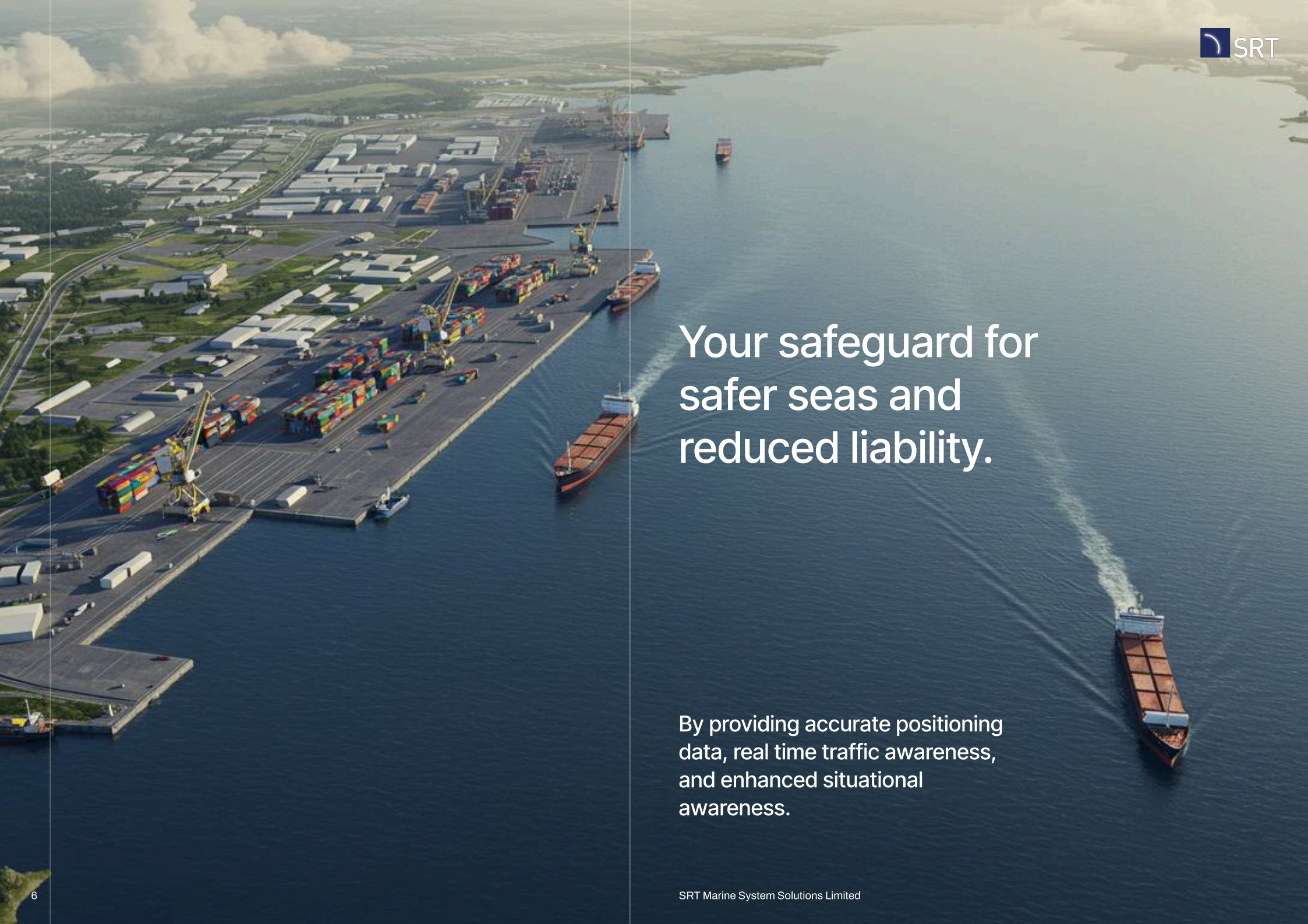
### Enhanced Situational Awareness

Improves overall situational awareness, allowing mariners to make informed decisions.



### Efficient Search & Rescue

Aids in search and rescue operations by providing crucial location data.



Your safeguard for  
safer seas and  
reduced liability.

By providing accurate positioning  
data, real time traffic awareness,  
and enhanced situational  
awareness.

# Our Products

Easy and cost effective solutions for any port or waterway authority to significantly improve safety.



## DAS Express

EXPRESS 3 is engineered for seamless, permanent installation on any buoy, regardless of its manufacturer or marine infrastructure.



## Chronos

Chronos is an internationally certified AIS AtoN . Available as either Type 1 or Type 3 configurations, it offers a full range of features, including transmission of virtual AtoN targets, over the air configuration and chaining. Chronos can be interfaced directly with lights and racons, and to an extensive range of sensors when connected to the Chronos Sensor Interface product accessory.



## Coast Station

**AIS Surveillance Base Station**  
The AIS Coast Station is designed for high performance, true real time coastal monitoring and surveillance applications. All AIS messages from any AIS transceiver are received, decoded and networked in real time. Easy to install and set-up.



## Carbon TR & TRS Models

Carbon is an internationally certified AIS AtoN with the world's lowest power consumption. Available as either Type 1 or Type 3 configurations, it offers a full range of features, including transmission of virtual AtoN targets, simple integration with lanterns and external sensors.



# How DAS Works

**DAS uses certified AIS transceivers connected to real sensor systems to share real-time information with vessels, VTS centres etc.**



All DAS have their own internal GPS which provides accurate position of the DAS device



DAS transceiver automatically transmits its position, status and sensor data every few minutes using specialist AIS-AtoN transmissions



DAS transceivers operate entirely autonomously and do not have to be integrated with sensors. In such instance they transmit the GPS location and ID of the infrastructure in real time.



External sensors such as lanterns or weather sensors connect to the DAS.



DAS AIS transmissions are received and displayed by any EDIC, chart plotter, VTS system



DAS transceivers are highly configurable and can be remotely controlled along with being able to transmit multiple virtual AtoN's. Enabling hazards to be quickly identified.

## Digitally connected navigation

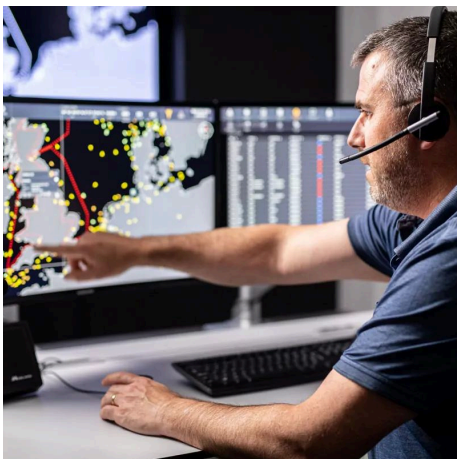


Sensors connect to the DAS AtoN, which processes and transmits within AIS transmissions.



# Ports and Coastal Waterways

Utilising digital aids to navigation systems technology, we are creating safer waterways by clearly identifying safe navigation lanes and obstructions. This reduces risks, costs, and liability and improves safety.



## DAS Express 2

Provides precise positioning data, of buoy location and lantern status and health.

## Carbon TR

Carbon is an internationally certified AIS AtoN with the world's lowest power consumption. Available as either Type 1 or Type 3 configurations, it offers a full range of features, including transmission of virtual AtoN targets, simple integration with lanterns and external sensors, plus over the air configuration and chaining.

### DAS Express 1



418-0094

Ideal for marking temporary hazards.

### DAS Express 2



418-0012

Ideal for marking small buoys where buoy location only is required.

### DAS Express 3



418-0095

Ideal for marking small buoys where buoy location and lantern status data is also required.

### Carbon TR



Type 1- 418-0009/  
Type 3 -418-0001

Ideal as a self-contained externally mounted AtoN on larger buoys. Also, can be used to mark & identify other marine infrastructure such as wind farms and oil & gas platforms.

Available as a Type 1 - transmit only (FATDMA) which requires a base state to reserve slots, or as a Type 3 (RATDMA) transmit and receive with no need for a base station as it manages its own transmissions automatically.

### Carbon TRS



Type 1- 418-0010/  
Type 3 -418-0003

Ideal as a self-contained externally mounted AtoN on larger buoys. Also, can be used to mark & identify other marine infrastructure such as wind farms and oil & gas platforms. Carbon TRS has an internal data logger - this can interface with meteorological and other sensors, to provide additional data.

### Chronos



Type 1 - 418-0050/  
Type 3 - 418-0065

Aimed at requirements where space is at a premium. Available as a Type 1 - transmit only and Type 3 - transmit and receive variant. A sensor integration unit can be purchased (Chronos Sensor Interface : 418-0052) to provide more extensive sensor interfacing.

### AIS Coast Station



423-0001

The AIS Coast Station is designed for high performance, true real time coastal monitoring and surveillance applications. All AIS messages from any AIS transceiver are received, decoded and networked in real time. Easy to install and setup.



# Virtual Aids to Navigation

What are they?

**Virtual Aids to Navigation (VAtNs) are digital representations of navigational markers that do not physically exist.**

They are transmitted electronically, typically via the Automatic Identification System (AIS), and displayed on electronic navigational charts and systems.

VAtNs can mark hazards, safe routes, or other points of interest in waterways.

01

## Flexibility and Rapid Deployment

VAtNs can be created and deployed quickly, making them ideal for dynamic situations like temporary hazards or changing conditions.

02

## Cost Effectiveness

VAtNs can be created and deployed quickly, making them ideal for dynamic situations like temporary hazards or changing conditions.

03

## Reduced Environmental Impact

VAtNs can be created and deployed quickly, making them ideal for dynamic situations like temporary hazards or changing conditions.



### Wind Farm Marking

Wind Turbines are typically very large with towering masts and rotating blades, which can create a significant obstacle for navigation. Identifiable safe distances must be clearly marked to avoid collisions and potential large-scale damage.



### Bridge Air Gap & Safe Passage

SRT Digital AtoNs enhance bridge air gap safety and vessel passage by providing precise navigation information, collision avoidance warnings, and real-time environmental data, enabling proactive decision-making and minimising risks.



### Meteorological Data Collection & Hydrographic Research

Utilising a Type 3 Digital AtoN, Sensors can be added to collect vital data on wind/ weather conditions, Tide/ Current Flows and Water quality. Enabling important data to be collected in real-time.



# DAS - Solutions that Enhance Navigation Safety and Efficiency



Proven proprietary technology powering a full range of products, solutions and consultancy services

## The benefits

### Versatile and Adaptable

SRT AIS AtoN products offer the most expandable solution and flexibility to be integrated into any navigation system from the smallest to largest cost option to mark a buoy location and visible to the VTS and Vessel ECDIS in real-time.

### Reliability & Durability

SRT AIS AtoN products are proven in the field to provide a long-lasting, low maintenance solution in the most extreme, exposed conditions.



# Get in touch with SRT



Connect with our specialist team  
to discuss your requirements  
and how we can help.

[info@srt-marine.com](mailto:info@srt-marine.com)