

## Global Services and Support

Keep Sailing. Keep your costs down.



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## Your vessels are constantly moving.

Or at least they should be if you're to operate at maximum efficiency. Planning the installation of a new navigation system and its ongoing maintenance, requires foresight to minimise costs and operational downtime throughout its lifetime – which may be many years on the vessel – while ensuring you comply with safety standards.



Lifetime support at the highest industry standard wherever and whenever you sail, to help you optimise uptime, reduce through-life costs and above all, operate safely.

## Lifetime Support

When you buy a navigation system from Northrop Grumman Sperry Marine, our philosophy is to support you throughout its entire lifetime – and that of the vessel – from installation, maintenance and repair to managing its obsolescence and ultimate replacement.

To get you started, we offer installation and commissioning services with all our navigation systems in a highly-competitive, fixed price package. Based on our extensive retrofit experience, we can integrate different generations of our system with complementary products to make up an integrated bridge solution.

We provide service and support on a 24/365 basis at every major seaport worldwide, at anchor, offshore and even in passage. We coordinate all your global servicing requirements, planning the optimal approach for undertaking work on board.

Choose between one of our Service Contracts for a fixed annual fee per vessel to make your budgeting easier, or our Pay As You Go Service with no commitments. We continue to support our systems for at least 10 years after their end of life, giving you peace of mind that spare parts will continue to be available long after the initial purchase.

## Best-in-class



Northrop Grumman Sperry Marine provides service and support through our own team of over 150 experts in integrated bridge solutions, based in 20 offices worldwide.

This is complemented by a global network of over 100 authorised service partners. All Marine Service Engineers (MSEs) are certified to ensure they install, maintain and repair our products to the highest standards on a consistent global basis.

We continually monitor our service levels to ensure our performance remains the highest in the industry. And we're committed to applying these standards to new smart maintenance solutions for the connected ship – helping you optimise your operational uptime and reduce through-life costs still further.

## Support throughout your system and vessel's life

### Maintenance and repair

Northrop Grumman Sperry Marine provides maintenance and repair services on a 24/365 basis at every major seaport worldwide, at anchor, offshore and even in passage.

All work is undertaken by certified MSEs, whether it's our in-house team or our global network of authorised service partners.

We coordinate the most efficient approach for undertaking work on board, depending on the vessel's location and expertise required. And we continually monitor our service levels, including time to respond, time to repair and first-time fix rate to ensure our performance remains the highest in the industry and optimises your operational uptime.

### Requirements analysis

Our service starts with a comprehensive analysis of your requirements – whether it's to plan the installation of a new system, devise the optimal Service Contract or quickly evaluate whether a repair is required.

For new installations, we review the current vessel configuration to propose a complete integrated bridge solution comprised of Northrop Grumman Sperry Marine and third party systems, based on our extensive product knowledge and deployment experience.

We plan the best approach for undertaking any work on board to minimise operational downtime – taking into account the vessel's geographic location; whether it will be in port, dry dock, at anchor, offshore or at sea; and who is best-placed to do the work – our in-house experts or one of our authorised service partners.

### Spare parts

Rapid supply of spare parts is fundamental to your operational continuity. Our global distribution centre is in Rotterdam, with regional hubs in Asia and the US, where we hold original parts for all our own navigation systems and complementary products to ensure on-time delivery to our global service network and ship owners.

We continue to support our systems for at least 10 years after their end of life, giving you peace of mind that spare parts will continue to be available long after the initial purchase.

Buying spare parts directly from Northrop Grumman Sperry Marine or our authorised service partners ensures they are not counterfeit, are sourced in an environmentally-friendly manner and your product warranty is not invalidated. And you don't risk compromising the safe passage of your vessels.



### System set-up

Northrop Grumman Sperry Marine now offers installation and commissioning services with all our navigation systems in a highly competitive, fixed-priced package to simplify the purchasing process and deliver a consistent service worldwide.

We also handle a wide variety of custom implementations. Our extensive retrofit experience and expertise as a manufacturer enable us to integrate different generations of our own system with complementary products to make up an integrated bridge solution.

All work is undertaken by certified MSEs to ensure you receive the quality of service expected from Northrop Grumman Sperry Marine at a highly competitive installed system price. All installation work includes the provision of drawings.



## Training

All MSEs in our service network are certified to ensure they install, commission, maintain and repair our systems to the highest industry standards on a consistent global basis.

We have dedicated regional training centres in Europe (Hamburg and Copenhagen), Asia (Singapore and Shanghai) and the US (New Orleans), together with online training facilities, through which we certify up to 550 MSEs each year.

We also provide training directly to ship owners on first-line maintenance and troubleshooting to help you reduce costs without invalidating your product warranty. This can be provided on board or at your site, and tailored to your requirements.

## Gyrofin Service

Due to the extreme conditions in which fins operate, servicing and maintenance is recommended every 18-24 months to ensure full operation of the fin, power, control and machinery units. In addition, a full overhaul and inspection is recommended at each dry-docking of the vessel.

We offer three types of gyrofin service:

- Maintenance and repair at sea
- Dry dock overhaul and project management
- Digital upgrade of analog control system to enhance performance and supportability

Our specialist engineers are experienced in all aspects of gyrofin stabiliser performance and can advise on through-life maintenance.

## Regularity & Certified Services

Northrop Grumman Sperry Marine is approved to conduct the class and regulatory compliance tests that underpin the safety and security of the vessel, its cargo and crew.

We conduct annual performance tests on Voyage Data Recorders (VDRs) and Simplified Voyage Data Recorders (SVDRs) to meet IMO requirements for the SOLAS regulation V/20.

We also conduct GMDSS radio surveys to meet IMO requirements of SOLAS 1974, the protocol of 1988, later amendments and additional requirements for class notations. We test radio equipment for all manufacturers.



## Flexible range of service options

Service Components	Pay As You Go Service	Annual Essentials Service Contract	Preferred Rate Service Contract	Managed Service Contract
Description	Pay for service activities and spare parts as needed	Annual compliance certification and key maintenance activities	Preferential NGSM service rates for committed annual spend	Fully managed service tailored to your requirements
24/365 global support	•	•	•	•
Single point of contact			•	•
Fixed annual fee		Per vessel	Per vessel	Per vessel
Preferential global rates		•	•	•
<a href="#">Requirements Analysis</a>				
On board retrofit survey	•		•	•
Maintenance plan				•
<a href="#">System set up</a>				
Installation and commissioning	•		•	•
<a href="#">Regulatory and Certified Services</a>				
Shore-Based Maintenance Certificate	•	•	•	•
GMDSS radio survey	•	•	•	•
VDR Annual Performance Test	•	•	•	•
ECDIS Annual Performance Test	•	Optional	•	•
<a href="#">Maintenance and repair</a>				
Gyrocompass overhaul	•	Optional	•	•
Magnetron replacements	•	Optional	•	•
Gyrosphere replacement	•	Optional	•	•
Other product overhaul and replacement	•		•	•
Health check and obsolescence report	•		•	•
Repair on demand	•		•	•
<a href="#">Spare parts</a>				
New parts	•	Included with maintenance	•	•
Refurbished parts			•	•
<a href="#">Gyrofin service</a>				
Dry dock overhaul	•		•	•
Maintenance and repair at sea	•		•	•
Digital upgrade	•		•	•
<a href="#">Training</a>				
First-line support training			•	•

## Best in class service and support

### Increase operational uptime

- 24/365 support
- Every major seaport, at anchor, offshore and in passage
- Rapid supply of spare parts
- Emergency services on-demand

### Reduce through-life costs

- Competitive installed system cost
- Predictable operating expenditure
- Extend system life through preventative maintenance
- Managed obsolescence

### Increase system reliability

- Preventative maintenance for high system availability and full functionality
- Official spares ensure product warranty, class and regulatory approvals are not compromised
- Highest quality of service on a consistent global basis

### Easy to budget

- Competitive installed system price
- Fixed annual fee for Service Contracts
- Simple PAYG pricing

### Easy to manage

- One-stop shop for all servicing
- Single point of contact for some Service Contracts

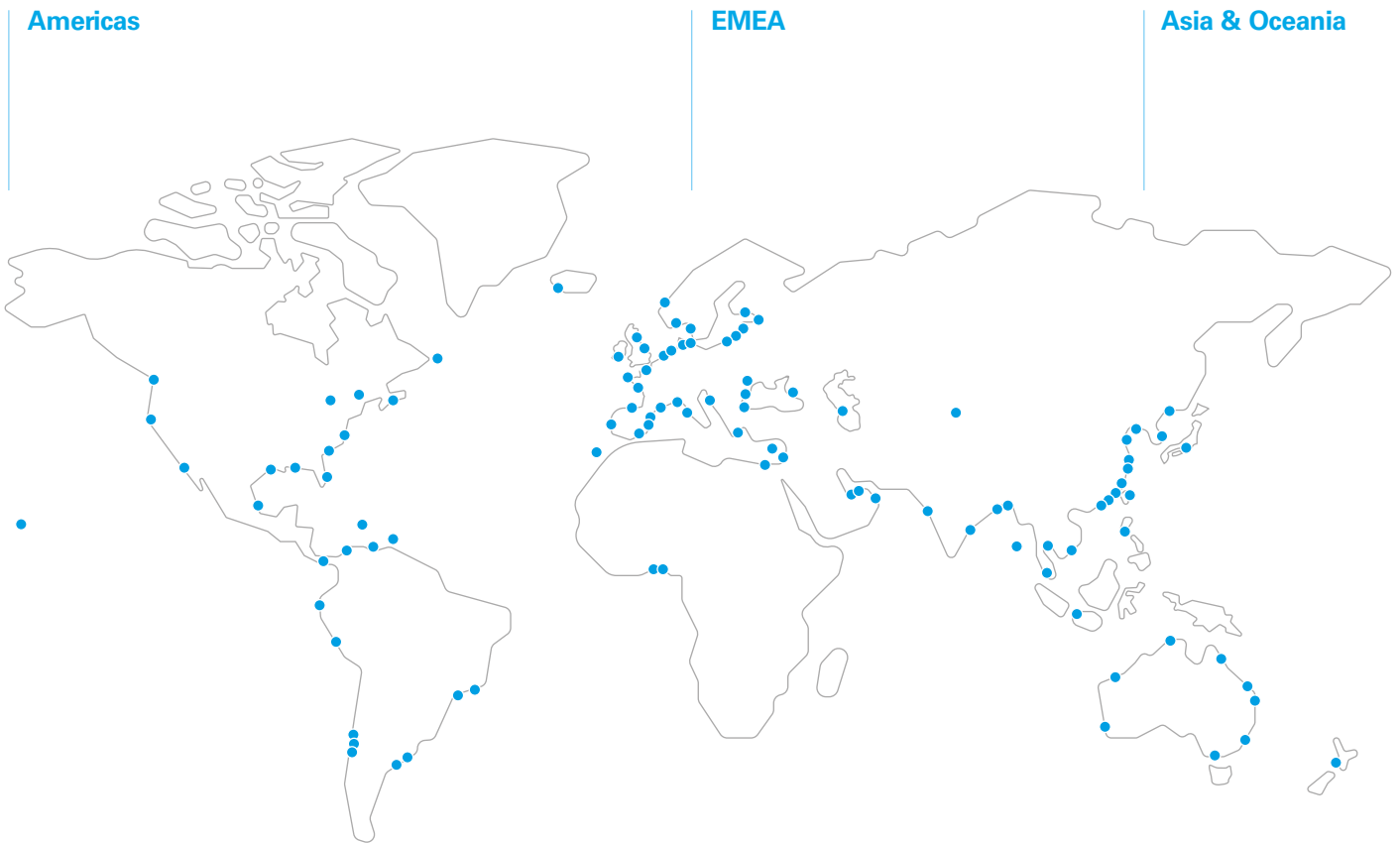
### Complete flexibility

- Choice of service options
- Service wherever vessel is located

# A world of support

## Global Customer Support and Solutions

We provide service and support on a 24/365 basis at every major port worldwide, at anchor, offshore and at sea. We continually monitor our service quality to ensure our performance remains the highest in the industry.



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A division of the Northrop Grumman Corporation, Sperry Marine provides a range of sophisticated navigation solutions for mariners around the world: autopilot and steering control systems, compass systems, integrated navigation and bridge systems, integrated platform management systems, speedlogs, navigation radar and ECDIS. Working with mariners around the globe for over 100 years.

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Specifications and features subject to change without notice.

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