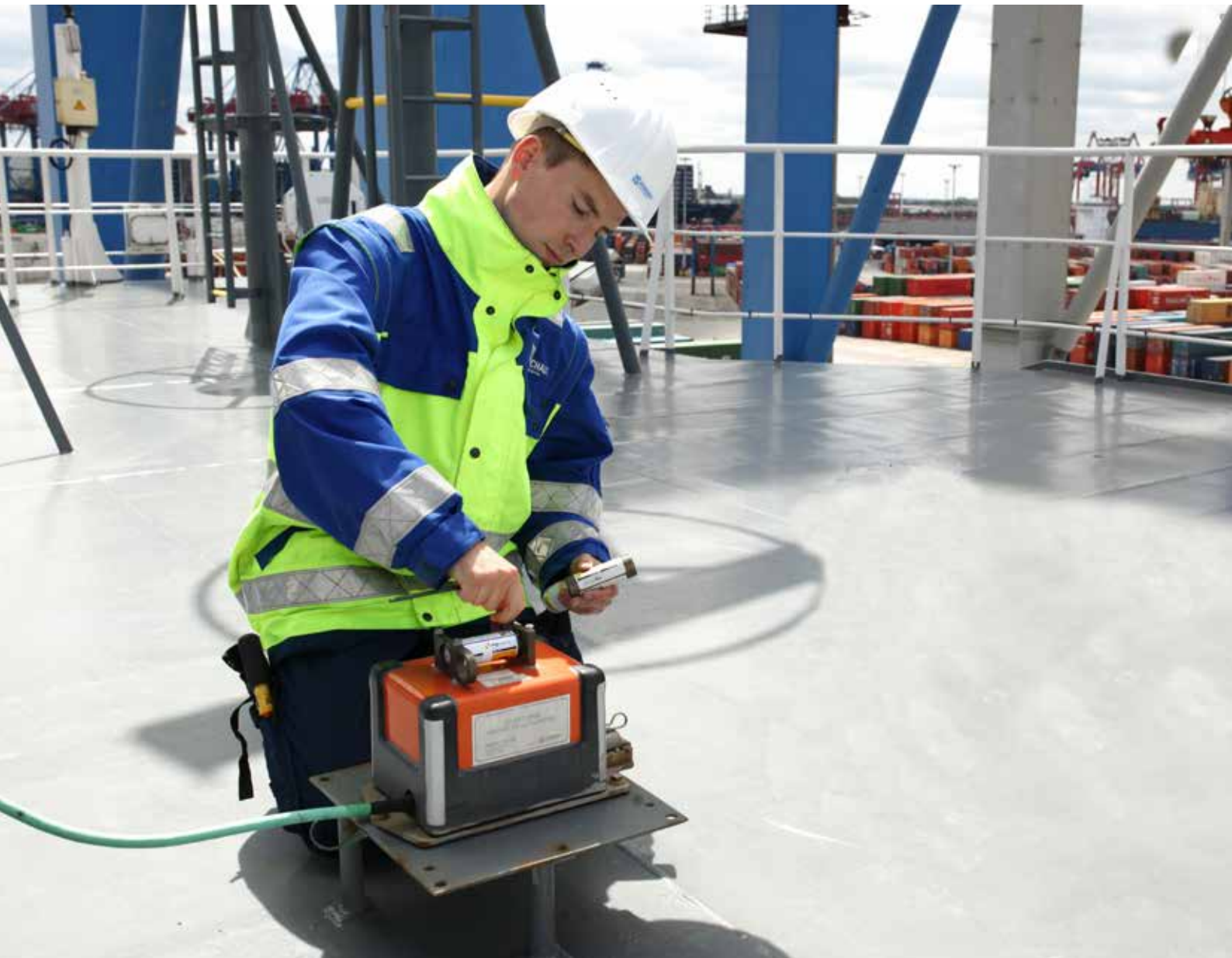


NavCom Services

Shore based maintenance for navigation and communication equipment



At your service



MACGREGOR

Designed to perform with the sea

Keeping your vessels running

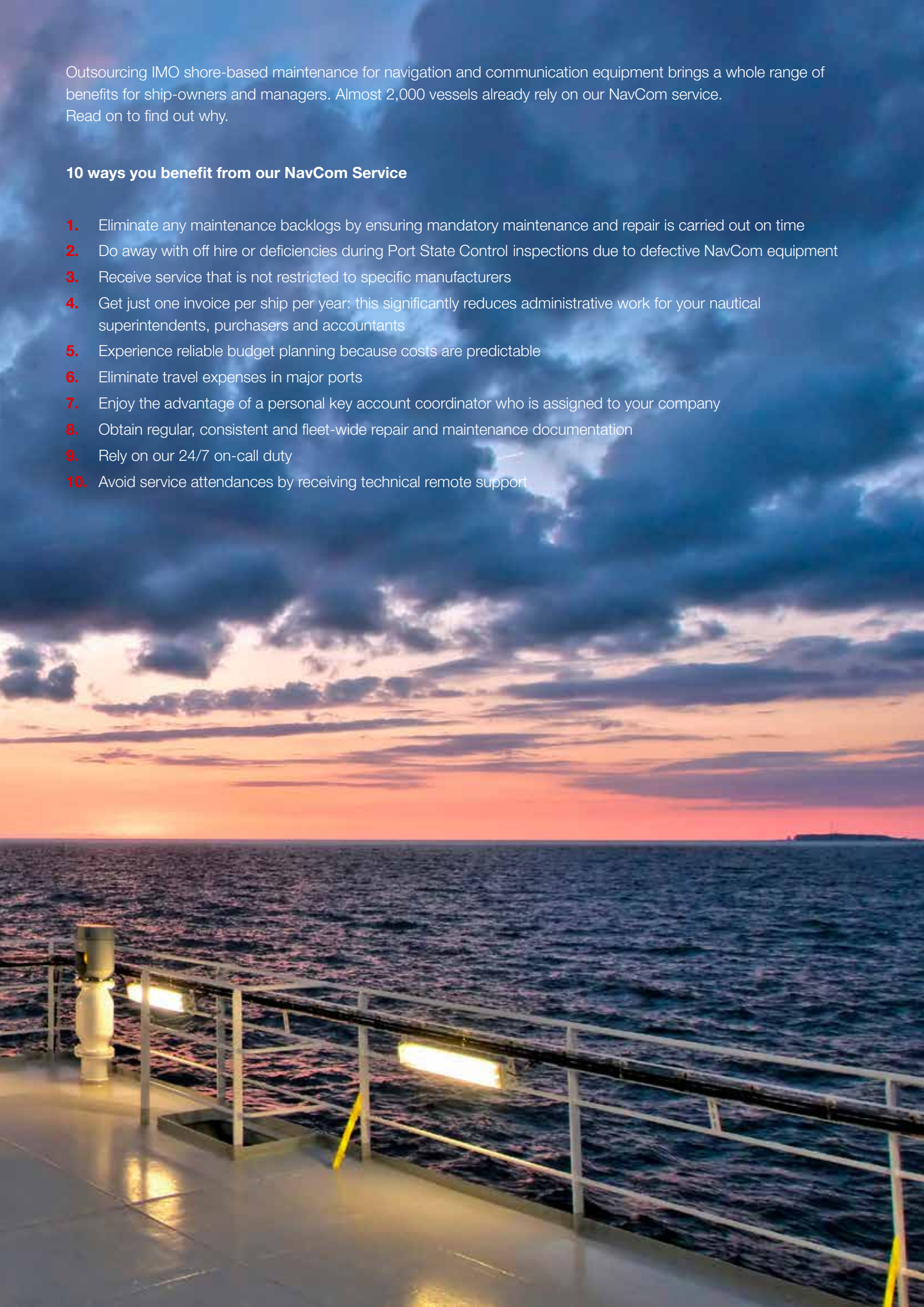
With 90% first-time fix rate our service engineers perform quality maintenance and repair that keeps your vessels running.



Outsourcing IMO shore-based maintenance for navigation and communication equipment brings a whole range of benefits for ship-owners and managers. Almost 2,000 vessels already rely on our NavCom service. Read on to find out why.

10 ways you benefit from our NavCom Service

1. Eliminate any maintenance backlogs by ensuring mandatory maintenance and repair is carried out on time
2. Do away with off hire or deficiencies during Port State Control inspections due to defective NavCom equipment
3. Receive service that is not restricted to specific manufacturers
4. Get just one invoice per ship per year: this significantly reduces administrative work for your nautical superintendents, purchasers and accountants
5. Experience reliable budget planning because costs are predictable
6. Eliminate travel expenses in major ports
7. Enjoy the advantage of a personal key account coordinator who is assigned to your company
8. Obtain regular, consistent and fleet-wide repair and maintenance documentation
9. Rely on our 24/7 on-call duty
10. Avoid service attendances by receiving technical remote support



Scope of service

Worldwide network



Our VDR service stations

Asia

- Singapore

Europe

- Hamburg, Germany
- Rotterdam, Netherlands

Our service partners

Africa

- Multidigital Nigeria Limited, Nigeria
- Radial Circle Group, Nigeria
- Radio Holland Egypt S.A.E., Egypt
- SMD Telecommunications (Pty) Ltd., South Africa

Americas

- Aage Hempel, Panama
- Ample Marice LLC, USA
- Everthron Marine Systems S.R.L., Argentina
- ITEC Electronica Maritima, Colombia
- KevMarine Solutions Inc., USA
- Mackay Communications Inc., USA
- Maritech Naval Inc., Canada
- Metalock Brasil Ltda, Brazil
- Naval Radio Limited, Chile
- Naval Radio Ecuador S.A., Ecuador
- Naval Radio Peru S.A.C., Peru
- Radio Holland, Brazil
- Raytheon Anschuetz Panama, S. de R.L., Panama
- Telnav Telecomunicacoes Navais, Brazil

Asia

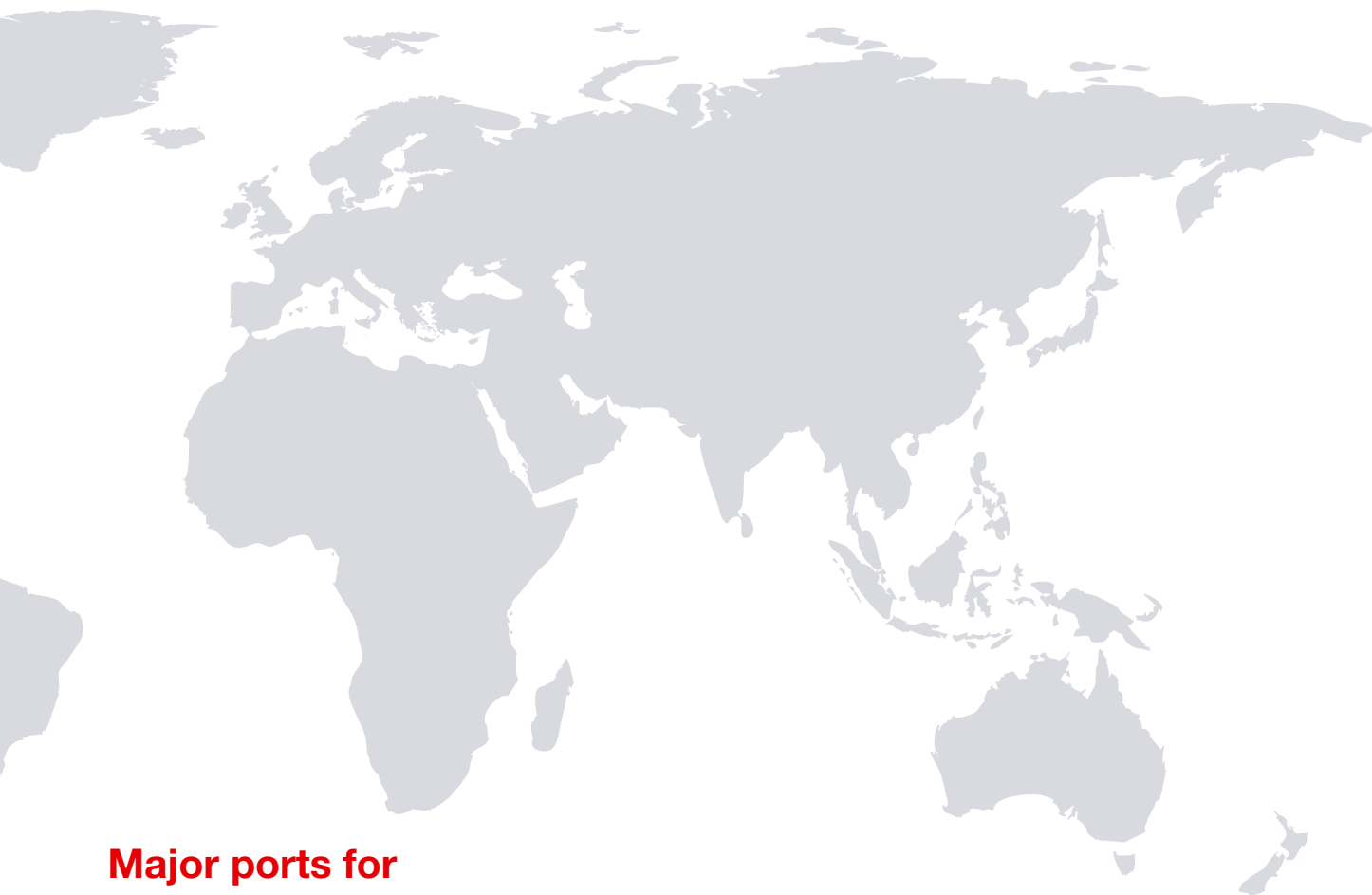
- Elcome Integrated Systems, India
- ELCOME International, UAE
- Elekon Company, Hong Kong
- Imtech Marine China, Hong Kong
- Link Instrumentation and Control Services, UAE
- Navicom Electronics Co., Ltd., Korea
- Seven Seas Electronic Co., Ltd., China
- Seven Seas Marine Service Co., Ltd., China
- Seven Seas Marine Service Co., Ltd., Taiwan
- Vega Communication Co., Ltd., Korea

Australia

- AWA Marine Ausmur Pty Ltd
- Cadeni Australia Pty. Ltd
- CC Electronics, Carramar

Europe

- Aage Hempel, Malta
- Aage Hempel Ltd., Morocco
- Aage Hempel, Spain
- Angelo Podesta S.r.l., Italy
- Baltic Marine Contractors OÜ, Denmark
- Baltic Marine Contractors OÜ, Estonia
- PBP Enamor Sp. zo. o., Poland
- ERNC Ltd., Russia
- Fabio Fiorucci Srl, Italy
- J.S. Marine Oy Ltd., Finland
- Krasyo Ltd., Bulgaria
- LAMMERS Schiffselektronik GmbH, Germany
- MaaG Marine, Poland
- Mare Systems GmbH, Germany
- Marine Engineering ApS, Denmark
- Maritimus d.o.o., Croatia
- Navicom Electronics S.A., Greece
- Pronautas marine electronics, Germany
- Radio Ondas Maritime Services, Spain
- S.C. ANCOM'96 S.R.L., Romania
- Ships Electronic Services Ltd., United Kingdom and United States
- SRH Marine Electronics, Greece
- STT Deniz Ticaretve Servis Ltd. Sti., Turkey
- Techservice Ltd. St. Petersburg, Russia
- Tefin s.c.r.l., Italy
- UAB Master Service, Lithuania



Major ports for NavCom and VDR

Africa

- Casablanca (Morocco)
- Durban, Cape Town (South Africa)
- Lagos (Nigeria)
- Port Said (Egypt)

Americas

- Balboa (Panama)
- Buenos Aires (Argentina)
- Houston, New York, Los Angeles, Miami (USA)
- Lima, Callao (Peru)
- Montreal (Canada)
- Santos (Brazil)
- Valparaiso, San Antonio (Chile)

Asia

- Bangkok (Thailand)
- Dubai (UAE)
- Hong Kong, Dalian, Tianjin, Yantai, Qingdao, Lianyungang, Yangzhou, Zhoushan, Fuzhou, Xiamen, Guangzhou, Fanchengang, Shanghai (China)
- Kaoshiung, Keelung (Taiwan)
- Mumbai (India)
- Pusan (Korea)
- Singapore

Australia

- Melbourne
- Perth

Europe

- Aalborg (Denmark)
- Algeciras, Barcelona, Bilbao, La Coruna, Tarragona, Valencia (Spain)
- Antwerp (Belgium)
- Las Palmas (Canary Islands, Spain)
- Genoa, Ancona (Italy)
- Gdynia, Gdansk (Poland)
- Hamburg, Bremerhaven, Cuxhaven, Rostock, Emden (Germany)
- Istanbul (Turkey)
- Lisbon (Portugal)
- Piraeus (Greece)
- Rotterdam, Amsterdam (The Netherlands)
- Rijeka (Croatia)
- St. Petersburg (Russia)
- Tallinn (Estonia)
- Valletta (Malta)
- Varna (Bulgaria)

Scope of service

Contract-based NavCom Services

Basic NavCom

Basic NavCom covers all mandatory annual tests and includes:

- APT for VDR (including certificate of compliance)
- GMDSS radio survey (including AIS/SSAS/SART/EPIRB)
- Annual gyro overhaul (including fluids and up to two gyros per vessel)
- Magnetic compass calibration
- Radar inspection (including up to two radar systems per vessel)

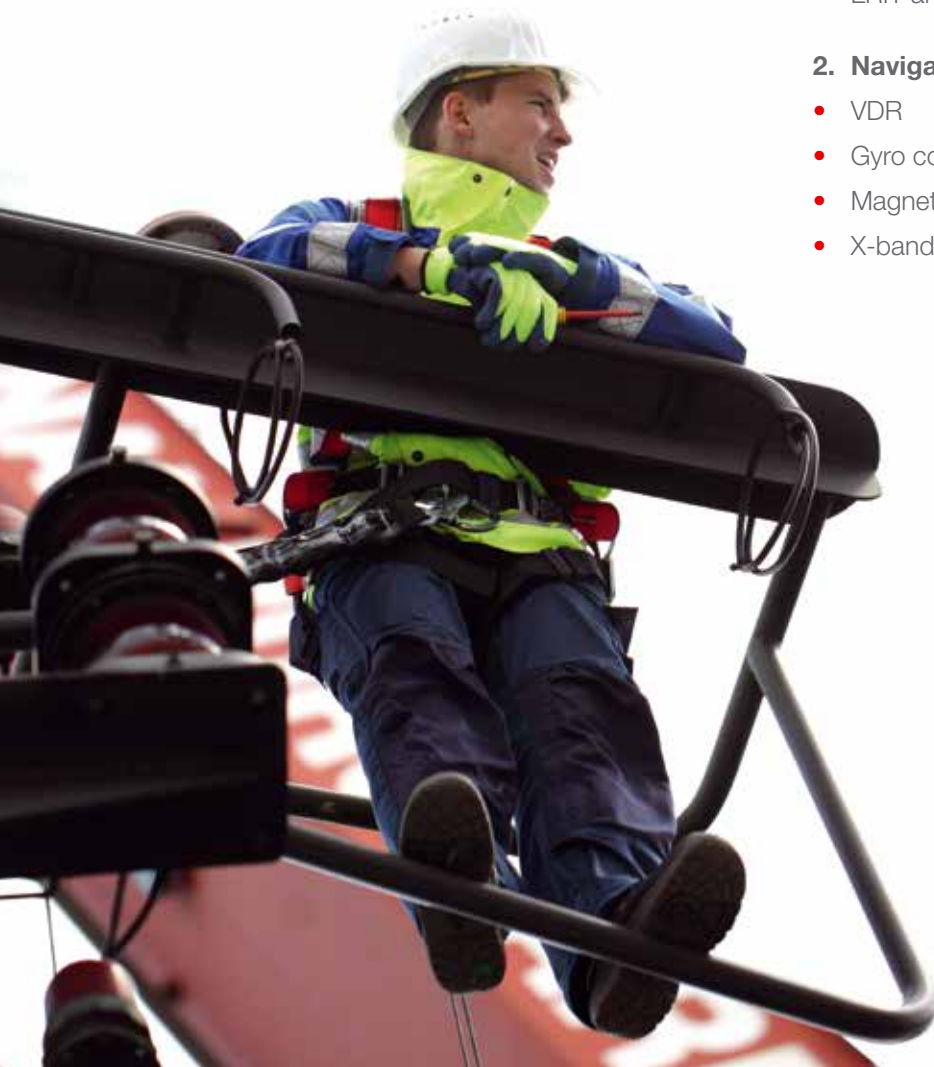
Range of systems and equipment

1. Communication equipment including GMDSS

- MF-HF equipment
- Charging unit and switchboard
- DSC watch receiver
- Inmarsat C including printer
- Portable GMDSS VHF
- Satellite EPIRB
- Search and rescue transponder (SART)
- Weather fax
- AIS
- LRIT and SSAS

2. Navigation equipment

- VDR
- Gyro compass
- Magnetic compass
- X-band and S-band radar



Comfort NavCom

Comfort NavCom covers all mandatory annual tests plus maintenance and repair of equipment and includes:

- APT for VDR (including certificate of compliance)
- GMDSS radio survey (including AIS/SSAS/SART/EPIRB)
- Annual gyro overhaul (including fluids and up to two gyros per vessel)
- Magnetic compass calibration
- Radar inspection (including up to two radar systems per vessel)

Range of systems and equipment

1. Communication equipment including GMDSS

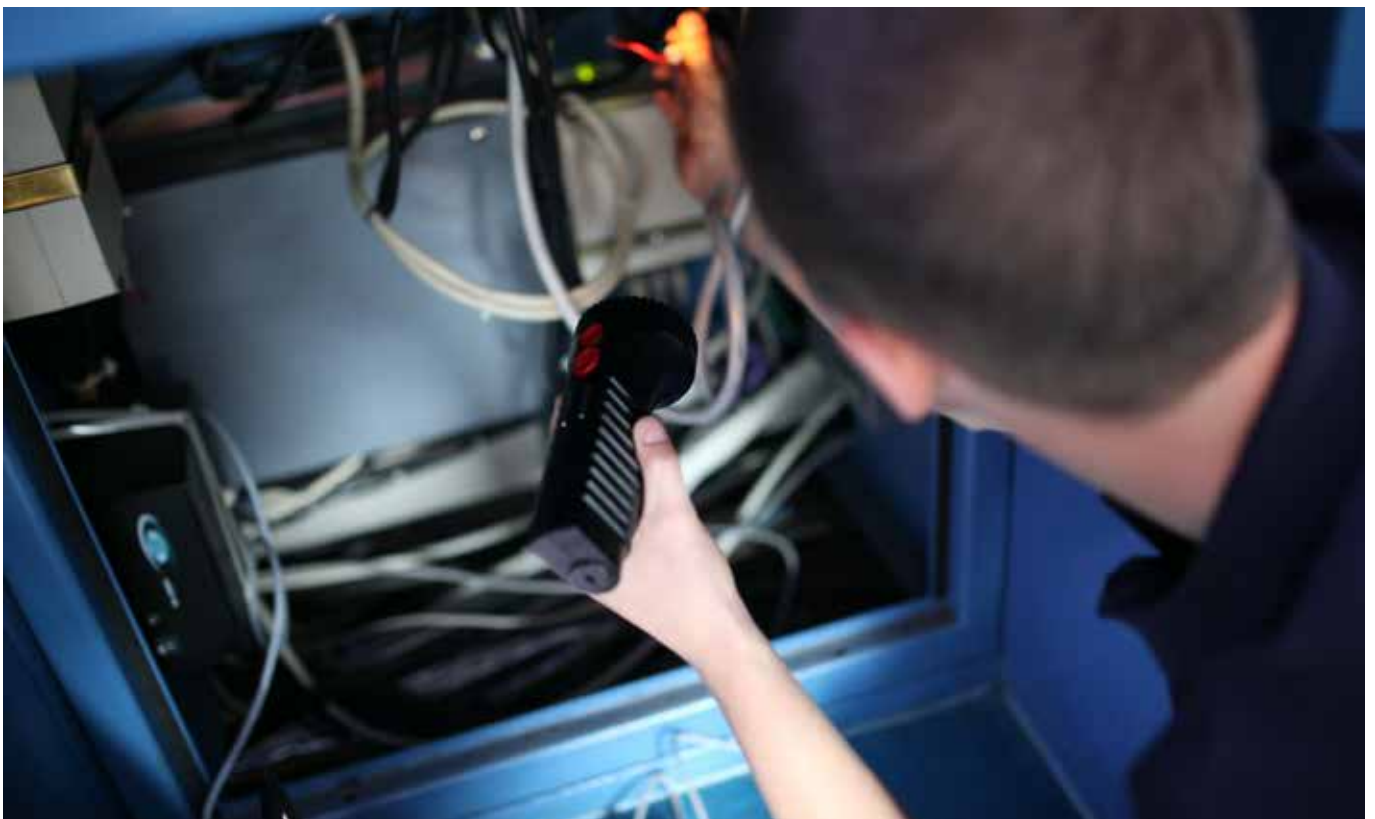
- MF-HF equipment
- Charging unit and switchboard
- DSC watch receiver
- Inmarsat C including printer
- Portable GMDSS VHF
- Satellite EPIRB
- Search and rescue transponder (SART)
- Weather fax
- AIS
- LRIT and SSAS

2. Navigation equipment

- VDR
- Gyro compass
- Magnetic compass
- X-band and S-band radar
- ECDIS
- Speedlog
- Echo sounder
- Autopilot system (FU, NFU, autopilot)
- GPS
- Wind indication system

My NavCom

Select the tailor-made service that best meets your fleet's needs from the wide range of Comfort NavCom choices.



Contract-based NavCom Services

Overview

	Basic	Comfort	My
Annual gyro overhaul (including fluids and up to two gyros per vessel)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
APT for VDR including CoC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radio survey (GMDSS), including AIS, SSAS, SART, EPIRB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SART/EPIRB replacement service for expired batteries	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Magnetic compass calibration (once every two years)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Issue of certificate "Declaration of Shore Based Maintenance", according regulation IV/15 of the 1988 GMDSS amendments to the 1974 SOLAS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radar inspection, including up to two radar systems per vessel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Maintenance and repair of NAVCOM equipment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Batteries	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wear-and-tear parts (magnetron, drive belts, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
On-board time while performing maintenance service	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Travel costs and expenses in major ports (300km, three hours)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spare parts on a lump-sum basis (per service call, per equipment, including delivery)	<input type="checkbox"/>	tba	<input type="checkbox"/>

Scope of service

NavCom Services on demand

We operate our service support through a global operational network comprising more than 50 service partners and over 100 service stations around the globe.

This network is strategically located along the main shipping routes covering all the commercial ports worldwide, enabling quick and efficient responses.

Our customers



Braren



Ernst Russ



Hammonia



Juengerhans



Laeisz



Liberty one



**Passat
Schiffs-gesellschaft**



NSB



NSC



Peter Döhle



Retrofit

We replace your old, obsolete systems with modern, proven NavCom equipment. Upgrades have proven to reduce operational costs and increase safety. A dedicated, specialised team focusing solely on upgrades is ready to revitalise your vessel.

To ensure all refit installations are a success, we follow a four-step process

1.

Design

Our specialists carry out site surveys to gather necessary information to prepare the design and estimate to complete the initial tasks required for the detailed design and engineering of the on-board NavCom system to be retrofitted. The report includes a suggested system layout and forms the basis for a delivery contract.

2.

Engineering

The systems are carefully tailored to meet each customer's requirements and outlined in design document that includes cable planning.

3.

Installation

While the ship is in service or during docking, our own team of technicians, a subcontractor or the customer's own personnel under supervision of our engineers complete the installation.

4.

Commissioning and training

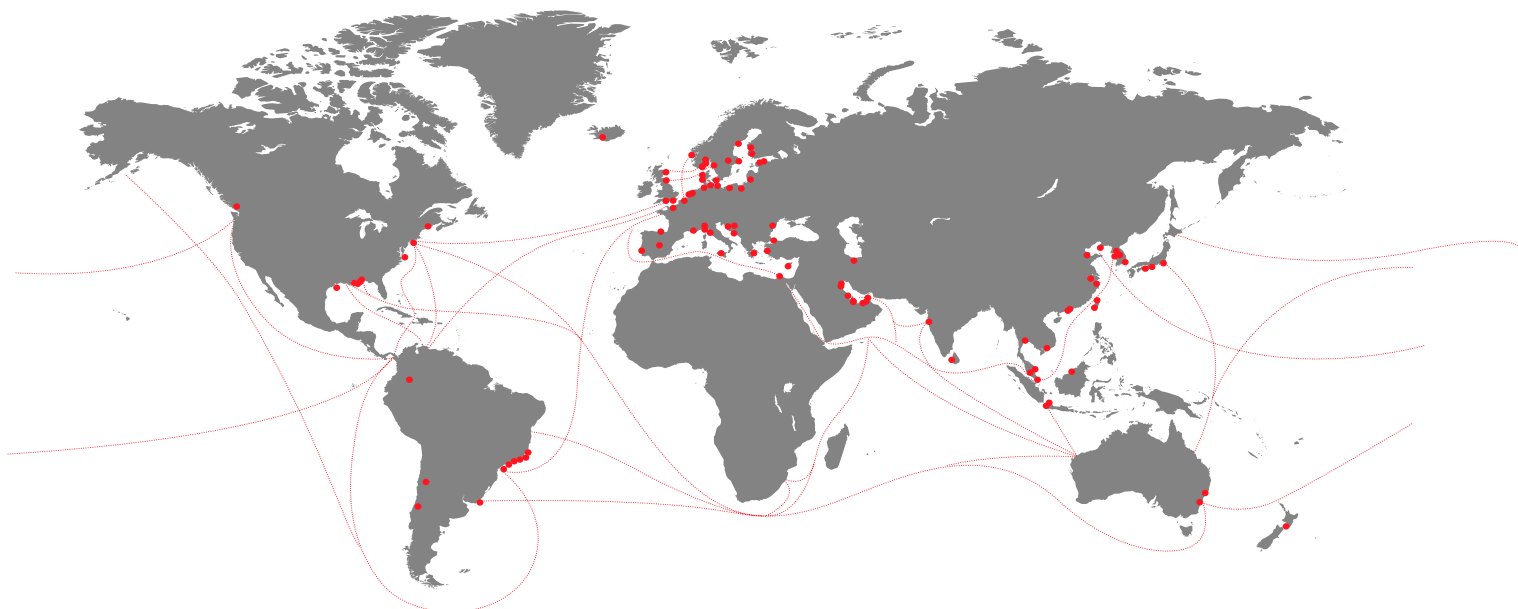
Experienced commissioning engineers ensure the installed systems are properly set up to work. These engineers then hand over the system to the customer's representative.





Wherever needed, you can rely on our support.
 We serve the following brands globally, and we also serve all others.

- | | | |
|-----------------------|--|------------------------------------|
| • Ankerlökken Marine | • Hydramarine | • MacGregor-Kayaba |
| • Allset | • Häggglunds | • MacGregor-Navire |
| • ASCA | • Interschalt | • Navire Cargo Gear |
| • Becker | • KGW | • Nordströms |
| • BMH | • KYB - ASCA | • Ozean Service & Reparatur |
| • Conver-OSR | • KYB - Kayaba Industries /
Navire Cargo Gear | • Platform Crane Services (PCS) |
| • Grampian Hydraulics | • Luezhoe | • Plimsoll |
| • Flintstone | • MacGregor | • Pusnes |
| • Greer Marine | • MacGregor-Conver | • Porsgrunn |
| • Hamworthy | • MacGregor-Häggglunds | • Triplex |
| • Hatlapa | | • Vestnorsk Hydraulikservice (VNH) |



MacGregor shapes the offshore and marine industries by offering world-leading engineering solutions and services with a strong portfolio of MacGregor, Hatlapa, Porsgrunn, Pusnes and Triplex brands. Shipbuilders, owners and operators are able to optimise the lifetime profitability, safety, reliability and environmental sustainability of their operations by working in close cooperation with MacGregor.

MacGregor solutions and services for handling marine cargoes, vessel operations, offshore loads, crude/LNG transfer and offshore mooring are all designed to perform with the sea.

MacGregor is part of Cargotec (Nasdaq Helsinki: CGCBV).

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