

Unknown waters: The future of unmanned vessels

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Ørnulf Jan Rødseth, MSc

Research Director

MARINTEK Dep. Maritime Transport Systems

MARINTEK

<http://www.unmanned-ship.org>



SST.2012.5.2-5: Grant no. 314286
E-guided vessels: The 'autonomous' ship



MUNIN details

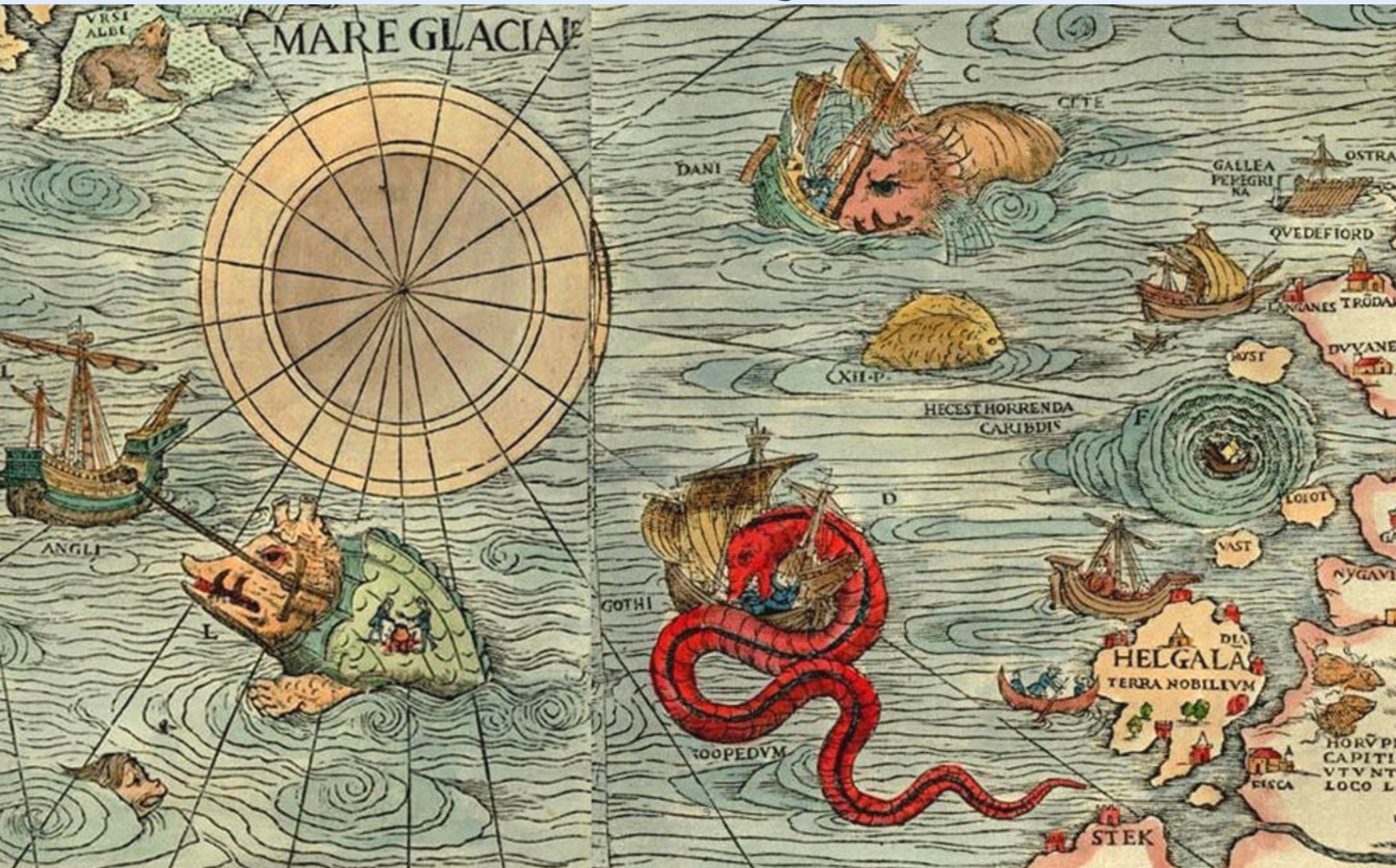
A concept study for a fully unmanned
handymax dry bulk carrier on an
intercontinental voyage.

- Duration: 01.09-2012 – 31.08.2015
- Funding: 2.9 million EUR of budget 3.8 million EUR
- Activity code: SST.2012.5.2-5: E-guided vessels - the 'autonomous' ship



HIC SUNT DRACONES

Here be dragons!



A lot of public opinion!

The collage features a variety of media outlets and websites, including:

- Naval Architects**: A LinkedIn group page with a ship icon and navigation links for Discussions, Promotions, Jobs, Members, and Search.
- Electronics Weekly.com**: A website with a blue and orange logo.
- Breakthrough Technology**: A green banner with a white arrow pointing right.
- The Economist**: A red rectangular logo with white text.
- DIE WELT**: A website with a globe icon and the text "DIE WELT".
- Rolls-Royce is building Unmanned ships**: A headline from IHS MARITIME, featuring a photo of a ship and a quote from Mihail Mitev, Consumer Marketing & Sales Manager.
- Unmanned, networked, intelligent ships navigate familiar water**: A headline from Electronics Weekly, featuring a photo of a ship and a quote from David Manners.
- Bloomberg**: A black rectangular logo with white text.
- Newsweek**: A red rectangular logo with white text.
- THE Motorship**: A black rectangular logo with white text.
- Hamburger Abendblatt**: A website with a logo featuring a ship and the text "Hamburger Abendblatt".
- eNav INTERNATIONAL**: A website with a logo featuring a ship and the text "eNav INTERNATIONAL".
- Can Futuristic Unmanned Cargo Ships Sail Without Seafarers?**: A headline from NDR, featuring a photo of a ship and a quote from Mihail Mitev.
- Are Unmanned Vessels the Future for the Ocean?**: A headline from Michael Carroll, featuring a photo of a ship and a quote from Michael Carroll.

The collage also includes various social media links and navigation menus, such as "Follow Mihail", "NDR", "Das Beste am Norden", "marine insight", "HOME", "NEWS", "TECH", "NAVIGATION", "SAF", "Facebook", "Twitter", "Google+", "LinkedIn", "Pinterest", "WORLD", "BUSINESS", "TECH & SCIENCE", "CULTURE", "SPORT", "NEWSWIRE", "THIS WEEK", and "Meet the Sponsors Behind the People Already in Line".

A lot of public opinion!



POSITIVE

... and in
between



Negative



Technical problems

- Need for technical maintenance and routine repair



- Accidents or system breakdown



Legal and economic issues



- UNCLOS
- SOLAS

- Contracts
- Insurance



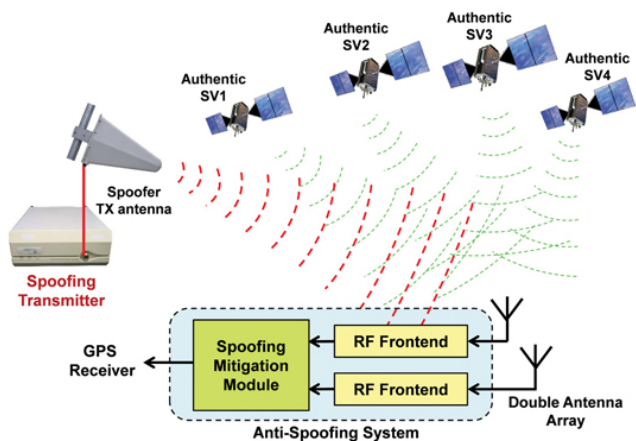
- Liability



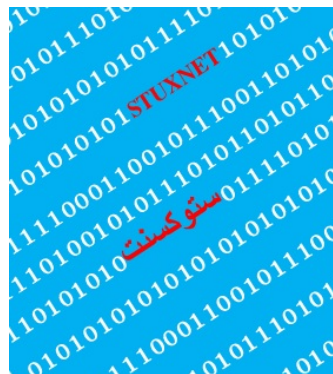


Hostile attacks

- Pirate attack



- Terrorist hijack e.g. by GPS spoofing



- Governmental backdoor



Lack of skilled mariners



- Shore control centre



- Boarding crews

- Technical industry



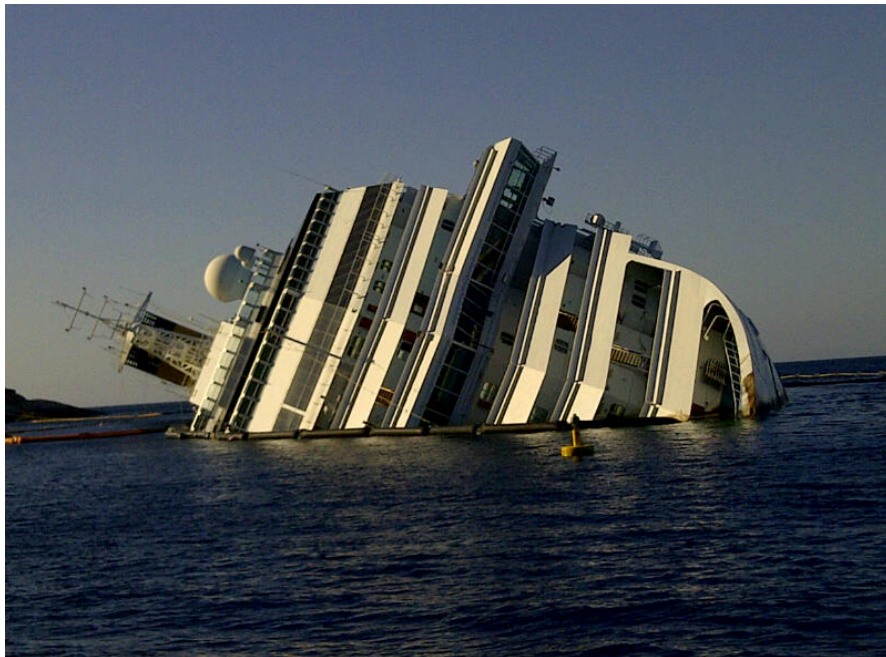
- Superintendents





Environment and safety

- Environment:
Slow steaming, less emissions
More efficient engine control



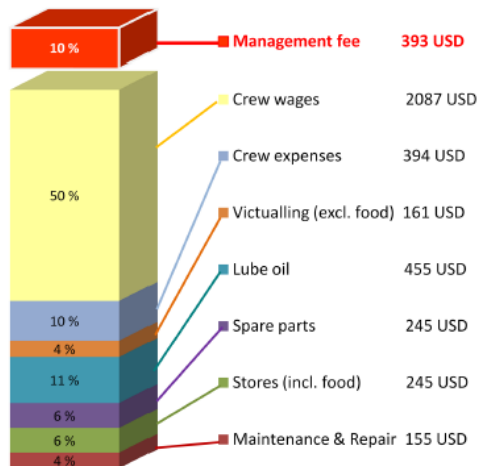
- Safety: Fewer ship accidents
due to human error



Economy and competitiveness

- World economy development:
Need for low cost transport

Daily Operational Expenses in USD (example)



Total daily operational costs: 4135 USD
(excl. dry docking and insurance costs)



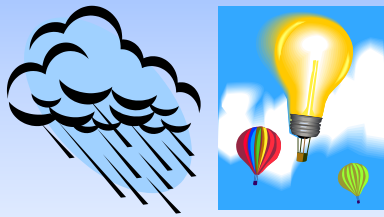
- European shipping: Increased competitiveness



Working environment onboard

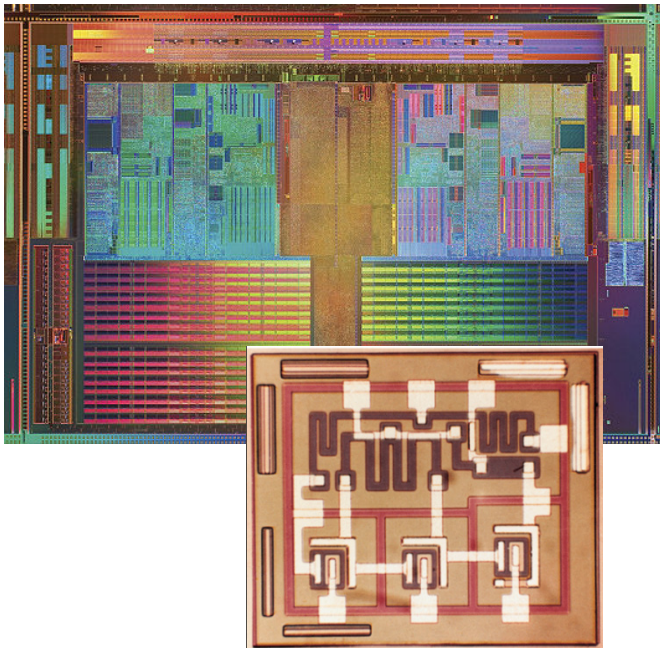
- Unmanned and remotely supervised operation during nighttime
- All crew at same shift:
Spare time together
- More Internet bandwidth
due to needs from remote
control





Caught by "Technology race"

- Cannot stop technology development



- Need to keep up with competitors

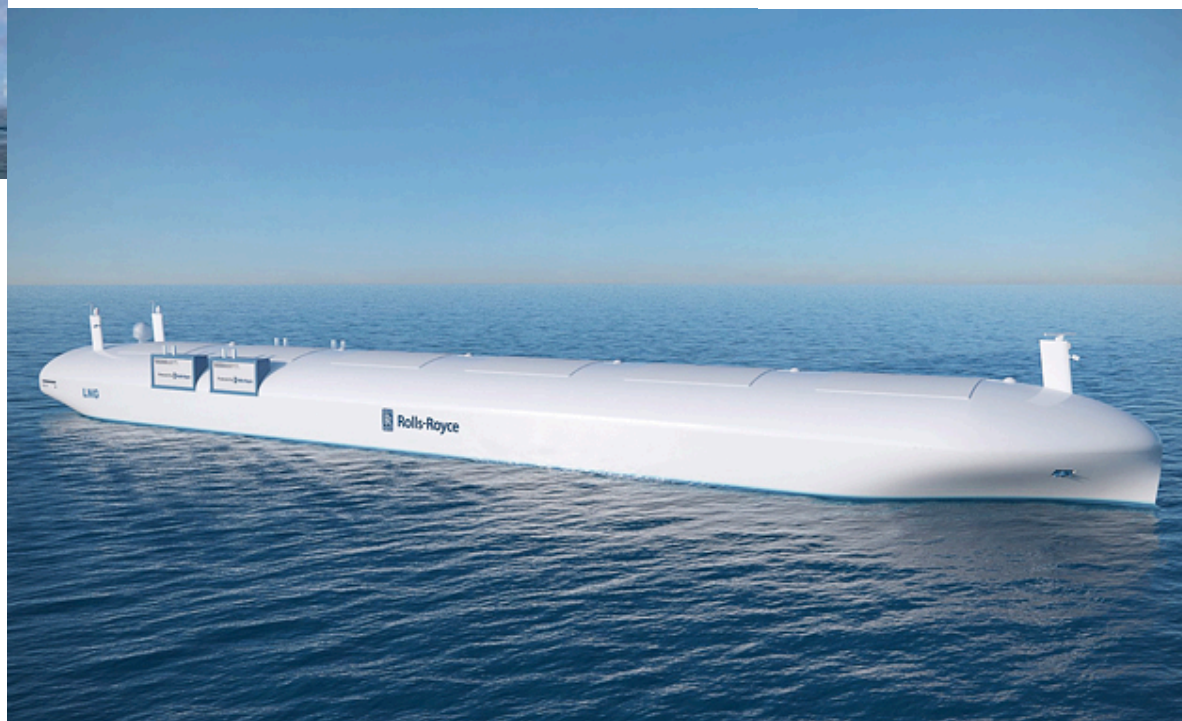
Other initiatives



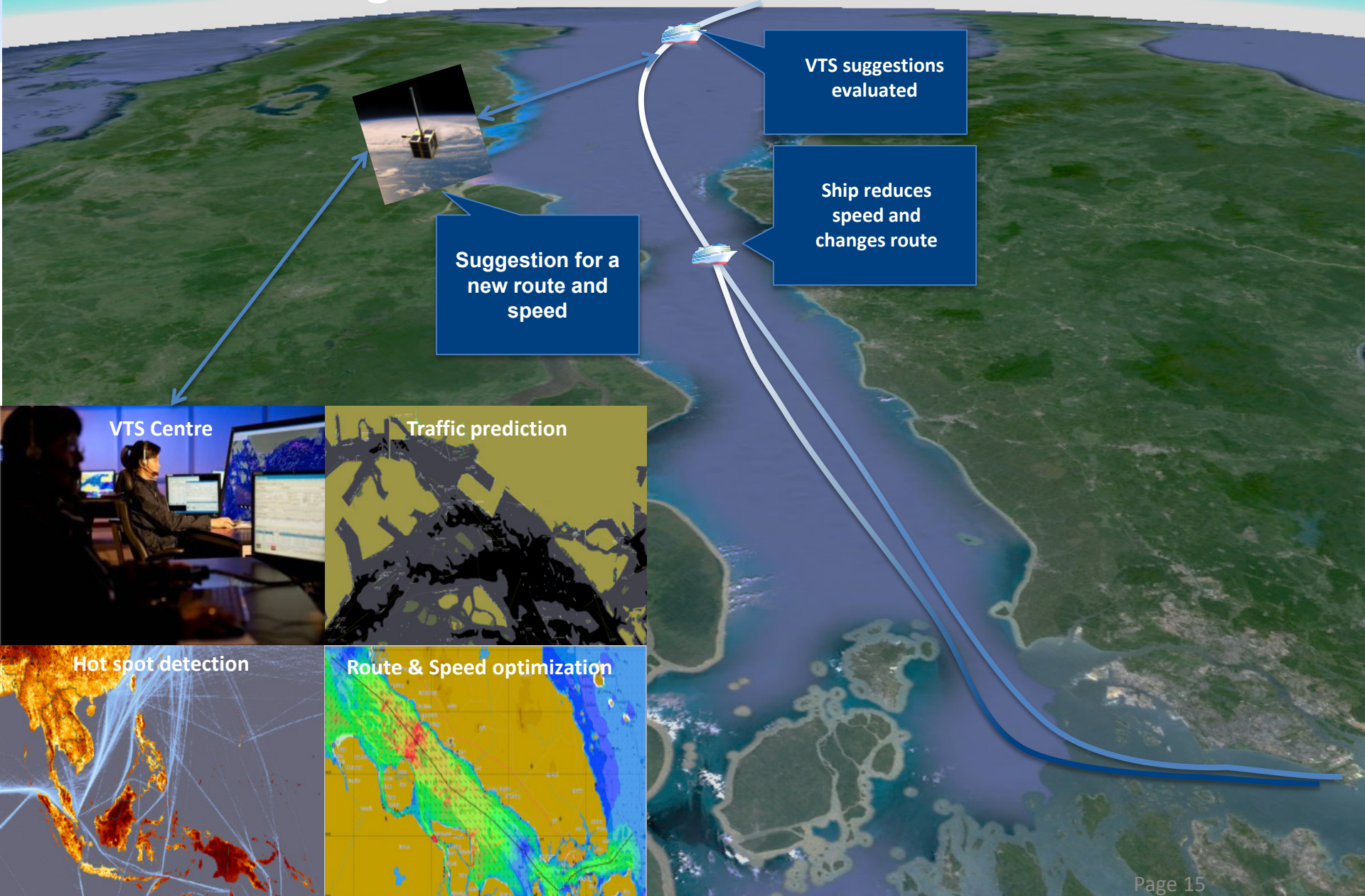
ReVolt by DNV-GL



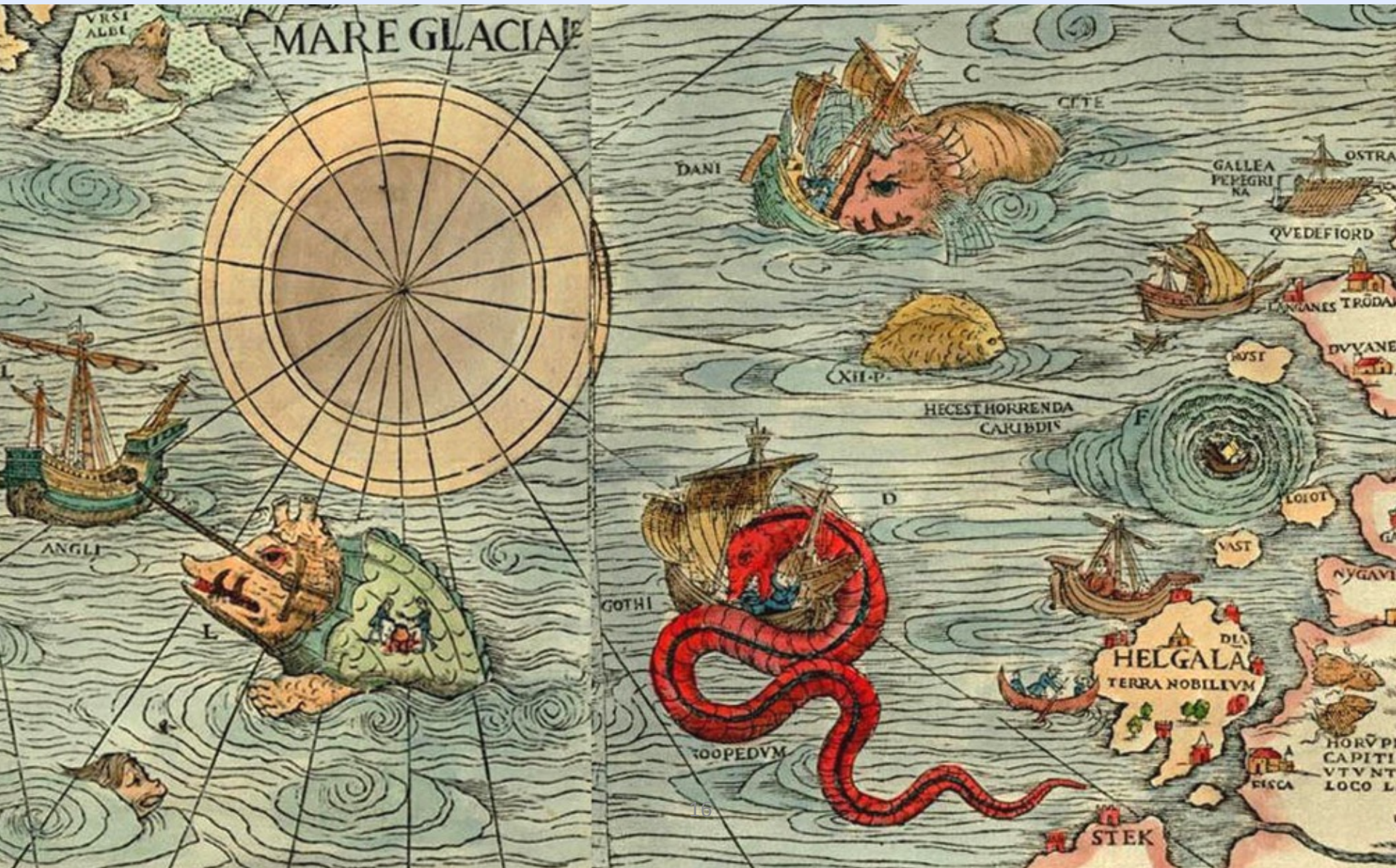
Rolls-Royce



Traffic management: SESAME Straits



From fear, uncertainty and doubt ...



... to known dangers and safe sailing.

