

Autonomous Vessels

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Digitalizing marine industry, SLUSH
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Rolls-Royce

Disruptive change



Digitalisation – disruptive change

Internet of Things

Industry 4.0

Big Data



U B E R



amazon.com



Digitalisation in the marine market



The dawn of the Ship Intelligence era

What is Ship intelligence



Asset management



Optimisation & decision support



Remote & Autonomous operations



**OBJECT
DETECTION**



INTERNET OF THINGS



**SATELLITE
COMMUNICATIONS**



BIG DATA



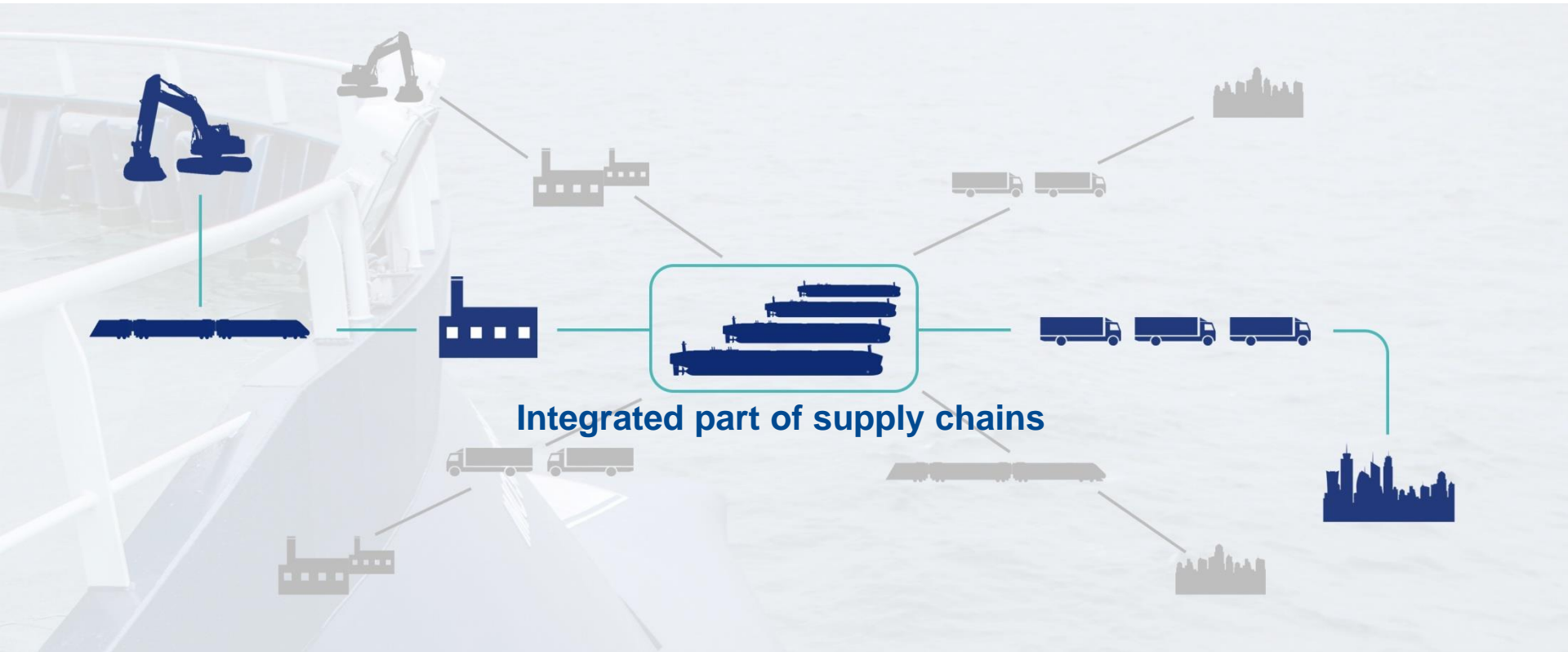
**AUTOMATION &
ROBOTICS**



**APPLICATIONS &
CLOUD**

Enabling technologies

Shipping trends – operation

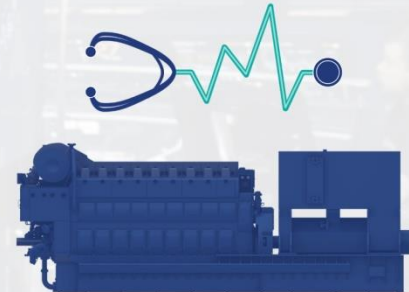


Shipping trends - management

”Total awareness”

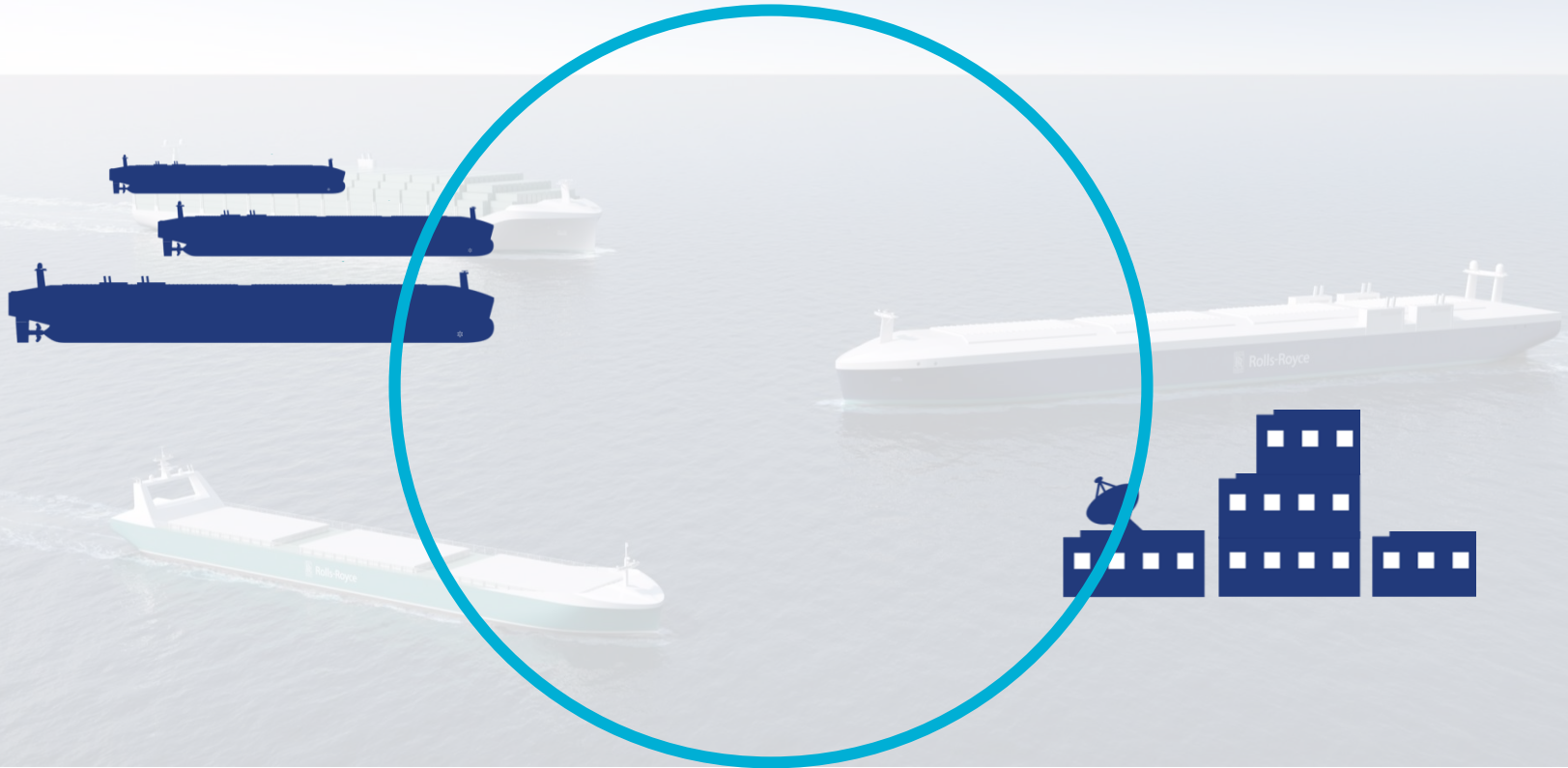


Asset management

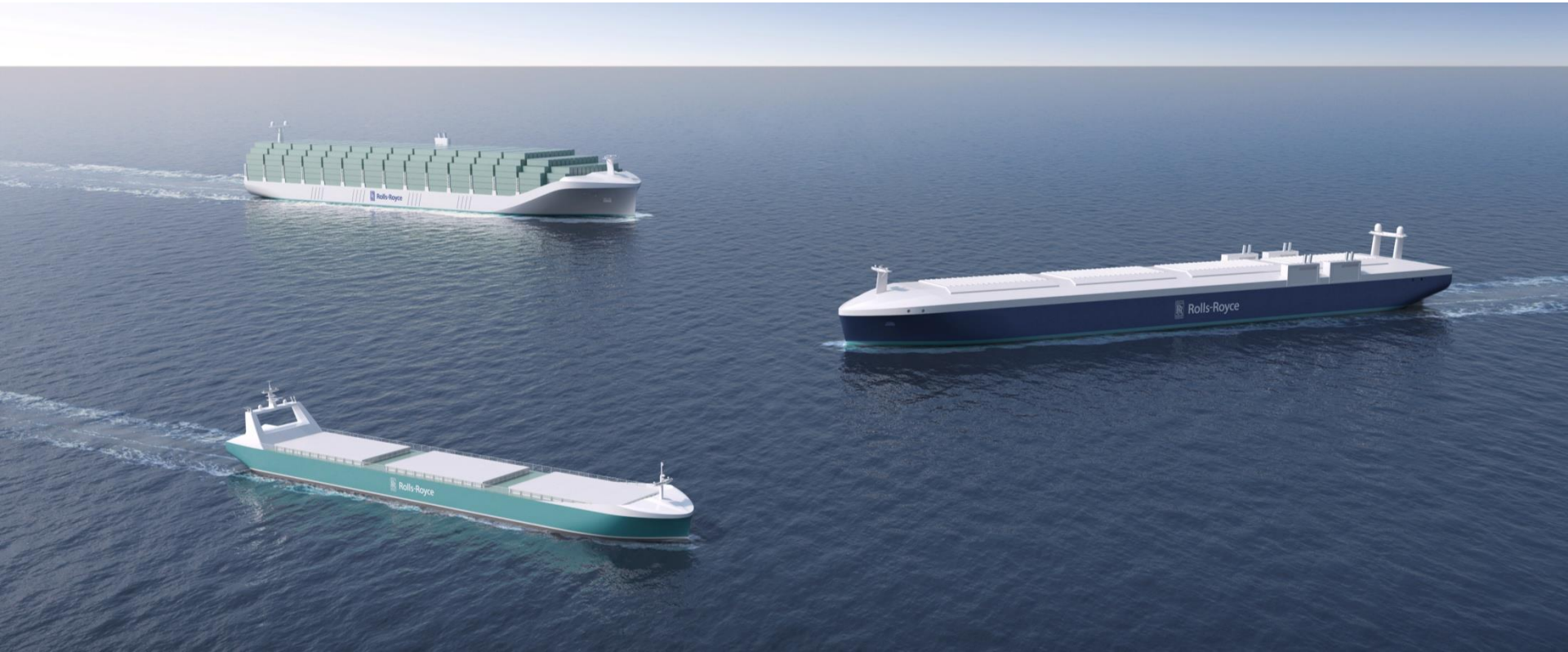


Health management

Integrating ship and shore

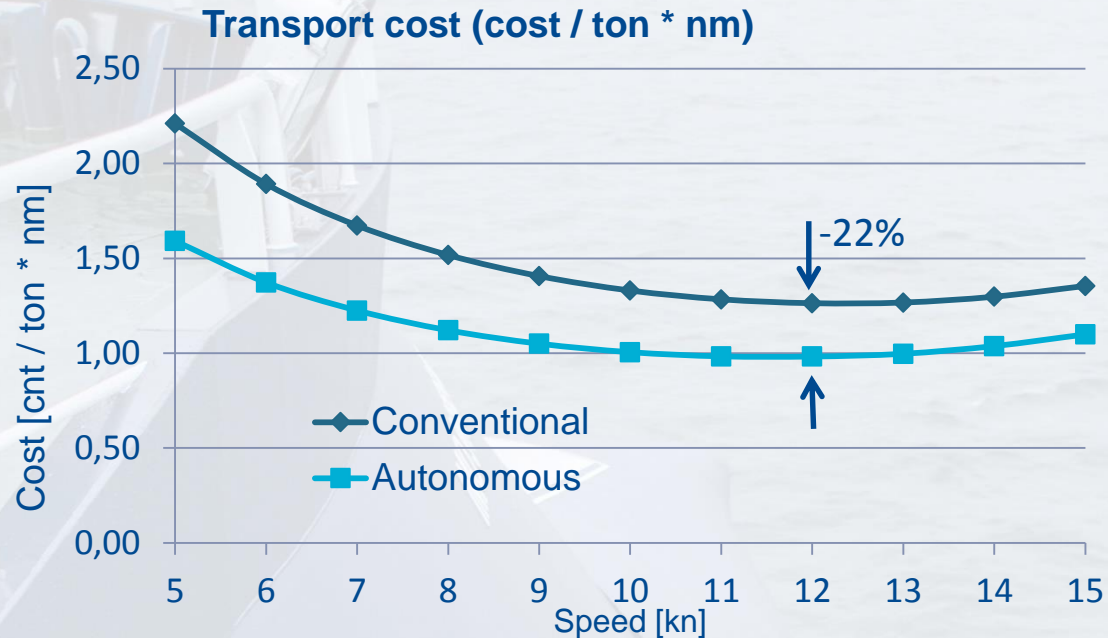


Autonomous vessels



Cost – sea transport

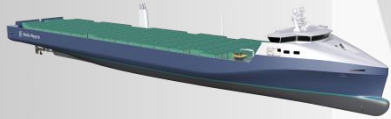
20.000 dwt general cargo vessel



Roadmap toward autonomous shipping

2020

Reduced crew with remote support and operation of certain functions

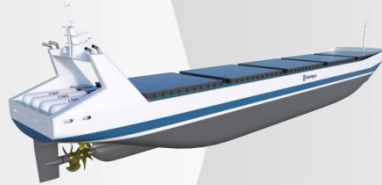


Remotely operated local vessel

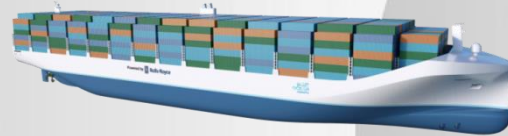


2025

Remote controlled coastal vessel

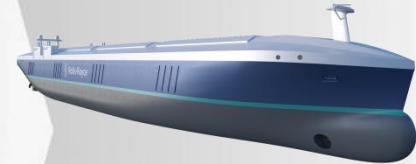


Remote controlled ocean going ship



2030

Autonomous ocean going ship



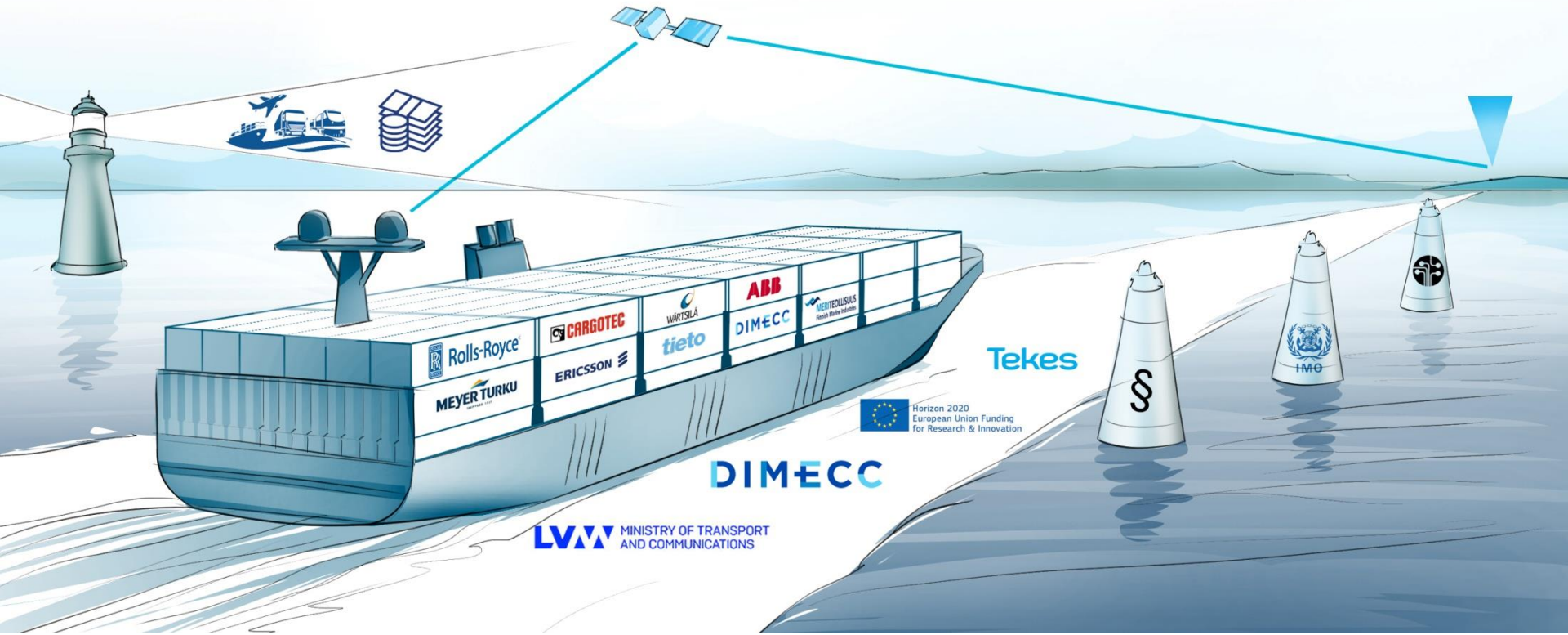
2035

Autonomous ships will start with local applications!

Rolls-Royce to supply first automatic control system to Fjord1

- The automatic crossing system ensures safe and energy-efficient transit by automatically controlling the vessel's acceleration, deceleration, speed and track
- The captain will supervise the system, and intervene if needed
- The vessels are due for delivery in 2017

Autonomous Maritime Alliance



 Horizon 2020
European Union Funding
For Research & Innovation

DIMECC

LVM MINISTRY OF TRANSPORT
AND COMMUNICATIONS

Tekes

Low cost airlines

Internet sales and marketing

Standard - new efficient fleet



Lean organisations

Point-to-point

High utilisation rate of fleet

Low cost smart shipping

Cost is focus

Leasing schemes

Low onboard manning

Ship Intelligence
(new way of operating)



New standardised fuel
efficient ships

Point-to-point routes

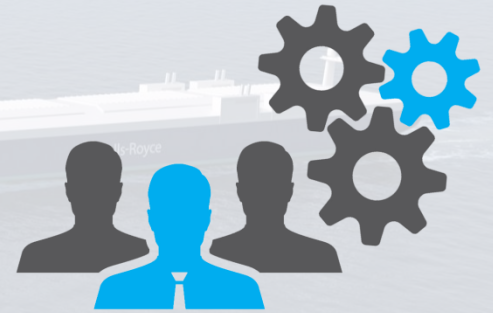
Digital market places and IoT
- “Uber of the sea”

New players?

Investors

Digital market place

Asset management



Redefining shipping!

