Smart Marine ecosystem approach

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THREE PRINCIPAL SOURCES OF WASTE

- Overcapacity
- Fuel efficiency
- Waiting time in terminals
Shared capacity  
Big data analytics  
Smart vessels  
Automated ports
SMART MARINE ECOSYSTEM CREATES FUNDAMENTAL BENEFITS

- Efficient use of resources
- Least climate impact
- Highest safety
In August 2017, operations of an OSV sailing off the coast of Aberdeen were controlled remotely from San Diego, 8,000 km away, using standard bandwidth (<75 kb) onboard satellite communication. The retrofitting of the DP software was completed within just 30 hours.
Auto-docking/undocking/dock-to-dock tests on Norwegian hybrid powered car ferry Folgefonn in 2018

Combination of auto-docking and wireless charging

Autonomous operations utilised uninterrupted for the entire journey, visiting all three ports serviced by the ship at no time the captain taking manual control

ADVANCED INTELLIGENT ROUTING (AIR)

Automatic route planning based on meteocean data, traffic separation schemes and regional regulations on acceptable fuel types, using artificial intelligence technologies

- Fastest and safest route, including real-time updates
- Weather optimization
- Up to 5-7% fuel savings
- Reduced bridge crew workload
- Safety check and Voyage plan documentation
- Enables Just-In-Time arrival at the port
VOYAGE OPTIMISATION
 Saving per voyage with just-in-time arrival:

74.5 tons of fuel*
22,200 EUR**

CASE:
5,500 TEU Containership
Distance: 1,150 Nautical Miles

* Assumption: average SFOC = 230 g/kWh
** Assumption: fuel price = 300 EUR/t
THE VOYAGE OF THE FUTURE REQUIRES AN INDUSTRY TRANSFORMATION

* Wärtsilä case study from one major port identified the range of 100-200 million euros per year of total fuel savings and CO₂ emission reduction potential in the range of 1-2 millions of tons per year
THE FUTURE IS NOW!