



# Sustainable & efficient ferry operations, without losing sight of safety

A case for Ferries, RoPax and RoRo ships

# Quick intro

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## About NAPA:

- ✓ World-leading software and data services for ship design and operation.
- ✓ De facto standard for ship Stability and Safety for passenger ships.

## Our Customers:



ROYAL CARIBBEAN CRUISES LTD.



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Color Line



# Today's presentation

- 1 Current challenges
- 2 Possible solutions with case examples
- 3 Data to simulate a safer and sustainable future
- 4 Discussion: Q&A and comments

# Current operational challenges:

And how data and simulations can help increase efficiencies without compromising on safety.

# Sustainability and efficiency challenges in the ferry industry



Cut emissions with fixed itineraries in competitive routes



Complex reporting and compliance



Information gap between ship & shoreside



Ensuring safety of all operations in a hectic environment

**Solution: Not just data, but precise data-driven tools that support:**

- ✓ Clear decision-making
- ✓ Predictable and planned operations

# 1: Cut emissions with fixed itineraries in competitive routes

Fixed itineraries mean very little scope for route-based voyage optimisation.

## Possible Solution(s):

- ✓ Deadweight management: Optimal bunkering &/or cargo-loading to optimize floating position & save fuel.
- ✓ Voyage comparisons and performance benchmarking with data simulations.
- ✓ Route suitability based on collected voyage data can also be used in new building performance simulations.

Case Examples:



## 2: Complex reporting and Compliance

Factors like crossing multiple jurisdictions in a short time, complicated customs and stricter environmental regulations near densely populated waters present added complexities for ferries.

### Possible Solution(s):

- ✓ Electronic record-keeping for easy, automated and error-free data collection.
- ✓ Cloud-based fleet data management for integrating, standardising and simplifying reporting and compliance.

Case Examples:



MARELLA  
CRUISES



### 3:

# Information gap between ship & shore

Compared to cruises, ferries typically operate with smaller crews and fewer resources onshore and gaps in communication create operational inefficiencies.

#### Possible Solution(s):

- ✓ Cloud-based data platform to ease information exchange & streamline planning
- ✓ Comprehensive vessel profiles of the whole fleet.
- ✓ Integrated data intelligence platform as a digital FOC.
- ✓ Cross-analysis of operational, commercial, technical, and safety performance on a single platform.
- ✓ Continuous monitoring and faster emergency response

Case Examples:





## 4: Ensuring safety of operations in hectic environment

From multiple arrivals & departures in a day to frequent loading/unloading while maintaining procedures and various safety parameters present a challenging work environment for ferries and RoPax.

### Possible Solution(s):

- ✓ Simulating & comparing voyage plans for multiple dockings.
- ✓ Real-time stability and voyage monitoring - onboard and onshore.
- ✓ Adaptable weight distribution planning for 'unknown cargo'.
- ✓ Electronic checklists that ease daily standard procedures.

Case Examples:

 *Finnlines*

  
corsica ferries

VIKING LINE

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# Data to simulate a safer and sustainable future:

Evaluating and validating long-term strategies like new ship designs, energy-efficiency systems and future fuels.

# Data to predict, test and plan ahead

Changing fuels or installing a new energy system will likely impact a ship's structural strength, intact stability, damage stability, deadweight management, as well as voyage optimization possibilities. Data analysis and modelling capabilities can be a cost-effective and risk-free way to test these technologies even before piloting.

## What's possible:

- ✓ Simulate the introduction of new techs like scrubbers, batteries, propulsion systems, new fuels, and better ship designs.
- ✓ Check technical viability
- ✓ Test design and safety viability
- ✓ Validate performance and cost-effectiveness

Case Example:



# Discussion

Q&A and Comments





# Thank you,

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