KONGSBERG

Remote Operation Centre

REMOTE OPERATION SOLUTIONS

OUR MISSION

Enabling remote operations of vessels and other floating assets in a safe, efficient and secure manner.

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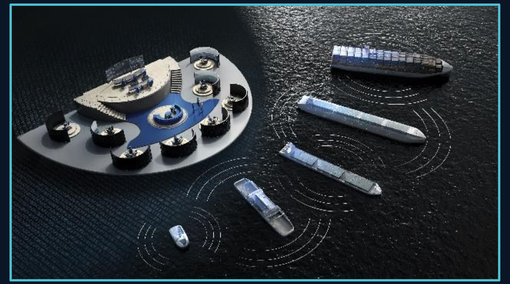
The Context

For Remote & Autonomous operations



Value Proposition

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BUSINESS

- Increasing revenue
- Increasing attractiveness
- Enabling lean operations

SAFETY

- Reducing human errors
- Increasing situational awareness
- Removing humans from hazardous environments

COST

- Reducing crew costs
- Reducing fleet operation costs
- Reducing newbuild vessel costs
- Reducing fuel costs

RISK

- Reducing overall risk due to transparency and availability of data
- Reducing risk of interruption

SUSTAINABILITY

- Reducing traveling for onboard crew change
- Optimizing fuel and energy consumption
- Supporting emission regulations

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Focus Segments

Tug operations

Ferry operations

Short sea shipping

Offshore operations

Special operations

Categories of Operations

Levels of Interaction

MONITORING

- Observe onboard systems
- No control over critical systems
- Give support based on real-,near real-time or historical data
- System-level, single vessel or fleet-level

SUPERVISION

- Allows high-level commands to digital orchestrators
- System may ask assistance from the operator
- Suitable for fleet-level operations

INTERVENTION

- Allows detailed commands to digital orchestrators or onboard systems
- Operator can override algorithm-based decisions
- Focus on a single vessel

DIRECT CONTROL

- Allows direct commands to low level control loops.
- High attention on a single vessel

Remote Operation Centre

INFRASTRUCTURE

Built in customer premises according to ROC facility requirements.

BACK-END

Systems providing computing power, connectivity and cybersecurity.

FRONT-END

Consists of x amount of modular Remote Operator Workstations (ROWS) to host x amount of remotely operated vessels.

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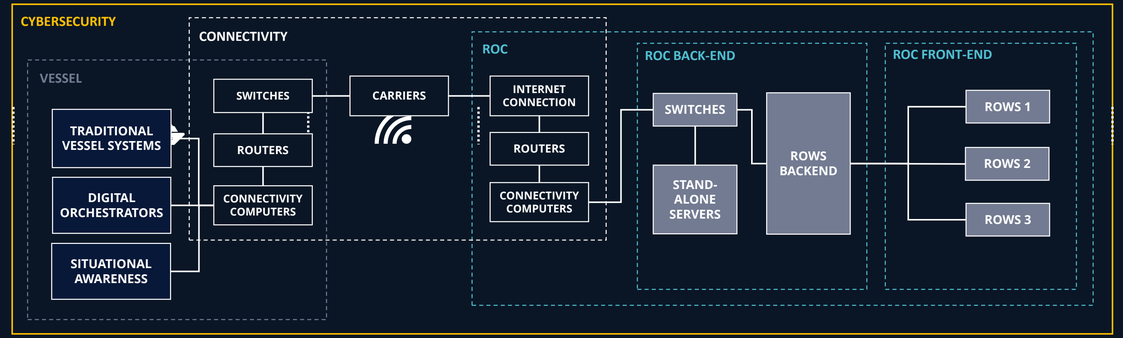

Topology

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Modularity

One solution does NOT fit for all

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ROC operator roles

Remote & Autonomous environment will introduce new tasks and new ways of operating, which will create new roles in ROC

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MODULAR DESIGN

Built modularly from physical and digital components depending on operator tasks.

CONTROL LAYER

Providing necessary control capability for systems and operator environment.

UX & ERGONOMICS

Designed in accordance with related ISO standards and other guidelines.

PRESENTATION LAYER

A flexible display setup allows best system arrangement for different operations.

ROWS

Remote Operation Workstation

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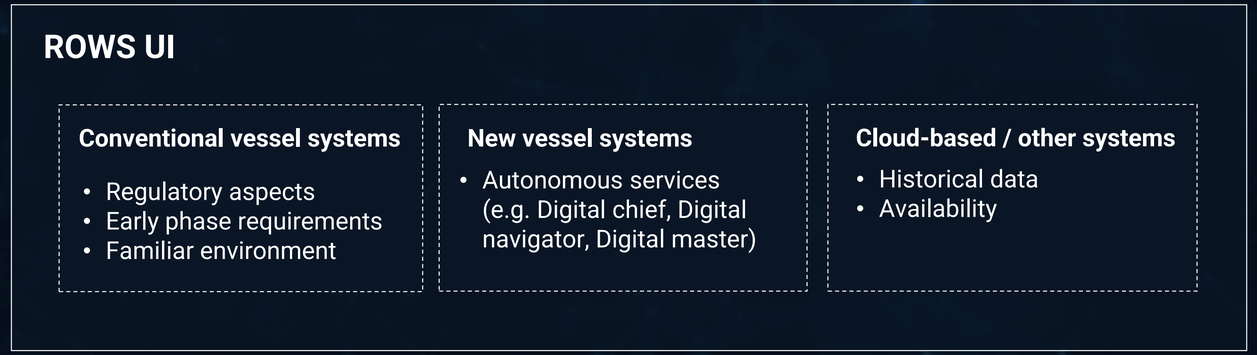

ROWS UI

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The journey has begun, welcome onboard

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