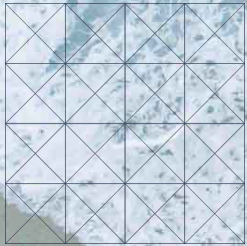




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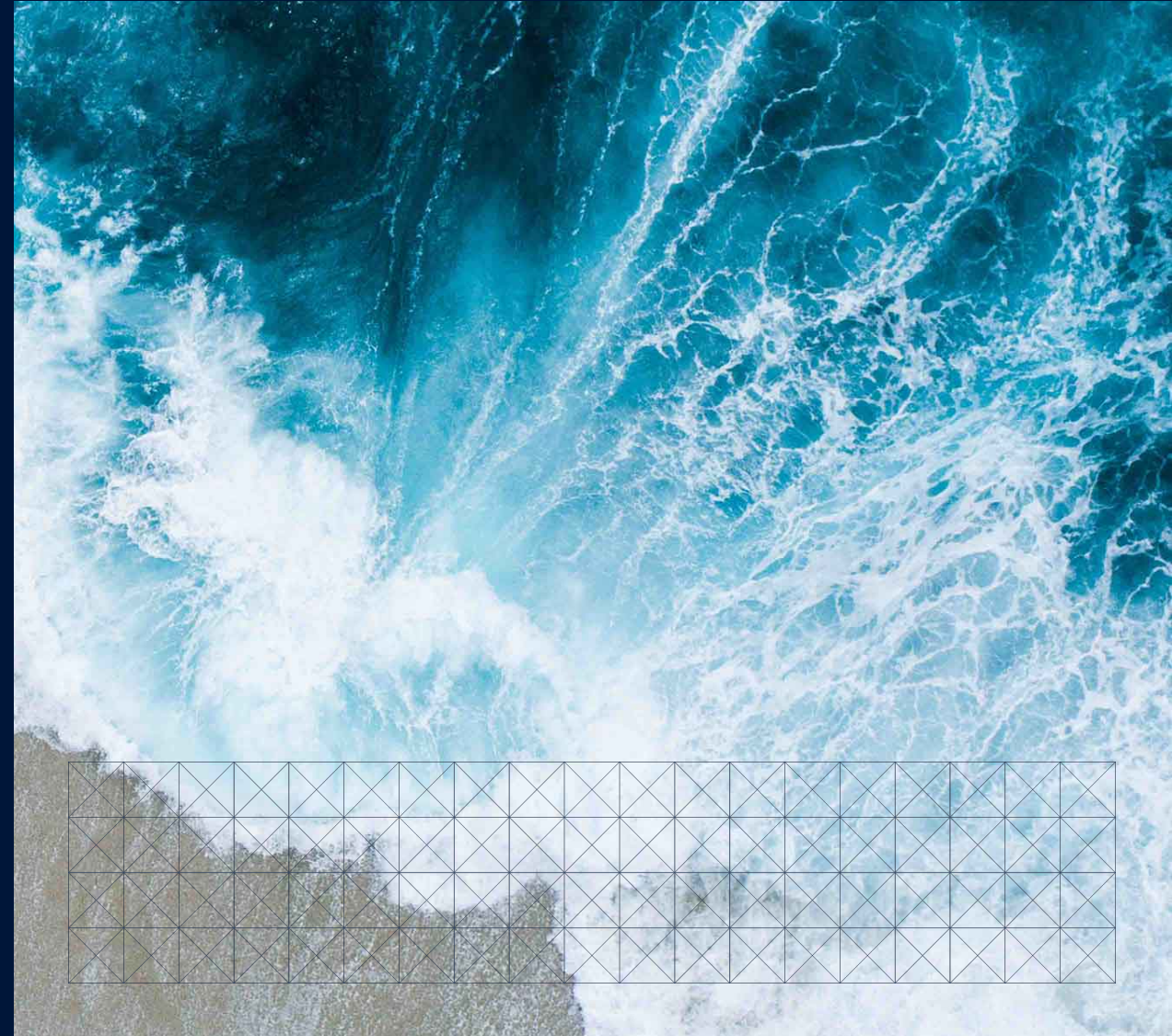
MARITIME RISK SYMPOSIUM

Situational Awareness Enabling Autonomous Navigation



Vivek Barve

Manager – Digital Performance, Americas





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AUTONOMY

Transformation for the maritime industry



The initial «spark» of this transformation is likely to come from outside our industry...

THE DRIVE TO EXECUTE AND MAKE THIS TRANSFORMATION A REALITY IS UP TO US!

New development and business models are needed to accelerate the adoption of new technologies

COLLABORATION ACROSS THE INDUSTRY

Although autonomy represents a disruptive step-change...

IT IS CRITICAL TO THINK OF AN INCREMENTAL APPROACH TO ADOPT NEW DEVELOPMENTS RESULTING FROM AUTONOMY PROGRAMS



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REMOTE & AUTONOMOUS OPERATIONS

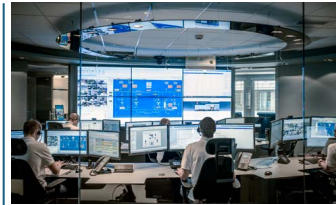
Military and civilian applications



Sea Launch

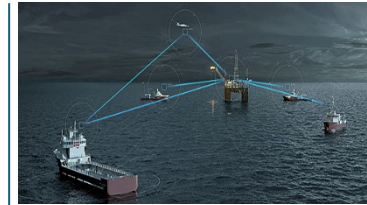
Remote control of DP system from Command Vessel

Autonomous Underwater Vehicles



Global Customer Support

Expanded offering of associated services and support - competitive asset management, life cycle support and remote services



Maritime Broadband Radio

The Maritime Broadband Radio is developed for use in maritime applications where digital high-speed reliable communication and data transfer are crucial for efficient and safe operations



YARA Birkeland

Zero emission autonomous vessel concept announced

1999

2007

2018

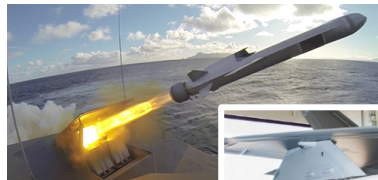
KSAT

World leading ground station provider for Low Earth Orbit (LEO) satellites



Joint Strike Missile / Naval Strike Missile

50 years of experience from a variety of missile programs



Kongsberg Protech Systems

World leading provider of remote weapon systems. Awarded the CROWS II (Common Remotely Operated Weapon Station) contract by the US Army.



Remote Tower

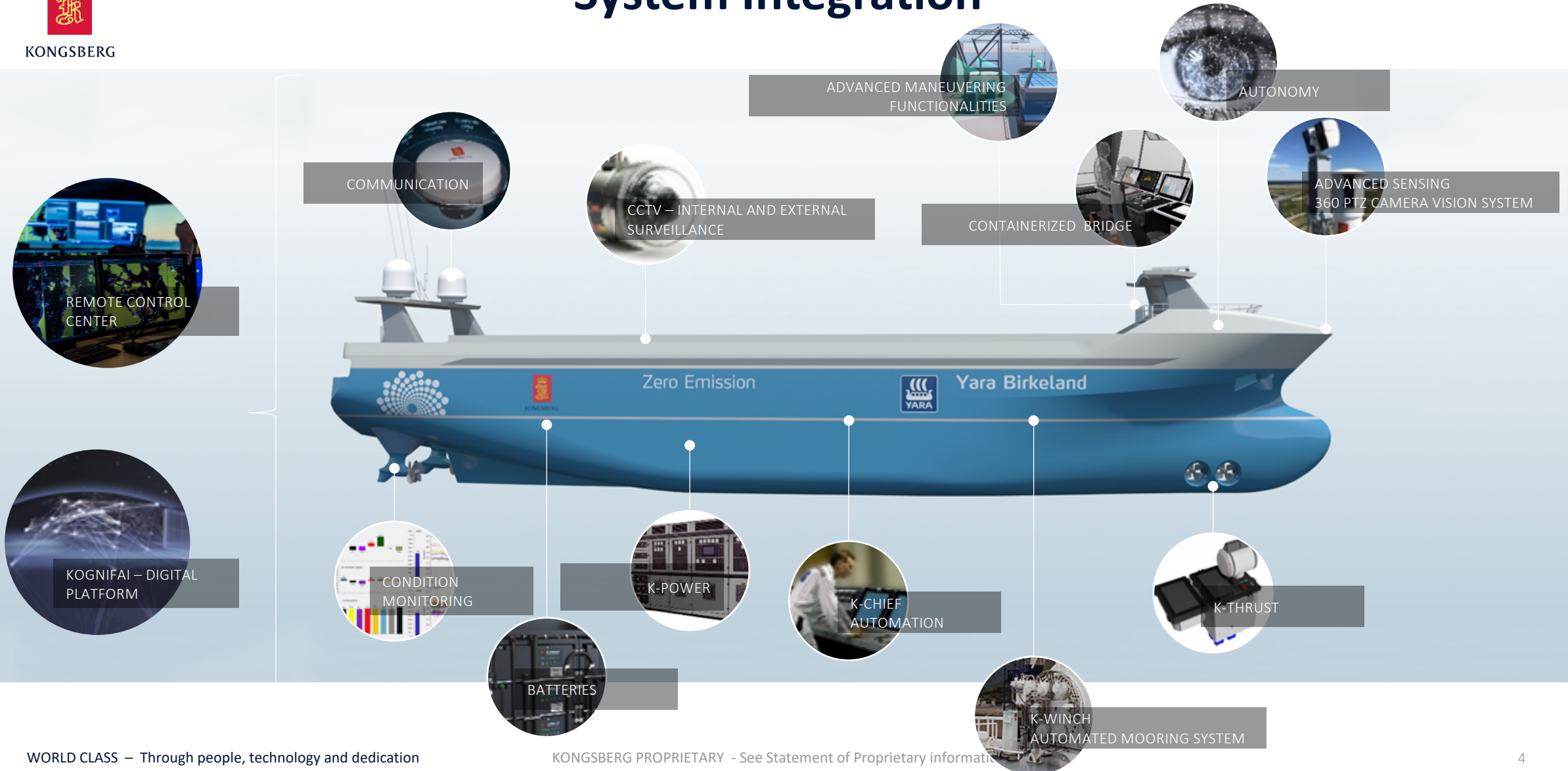
Avinor and KONGSBERG enters into agreement on the world's largest investment for remote towers





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System Integration

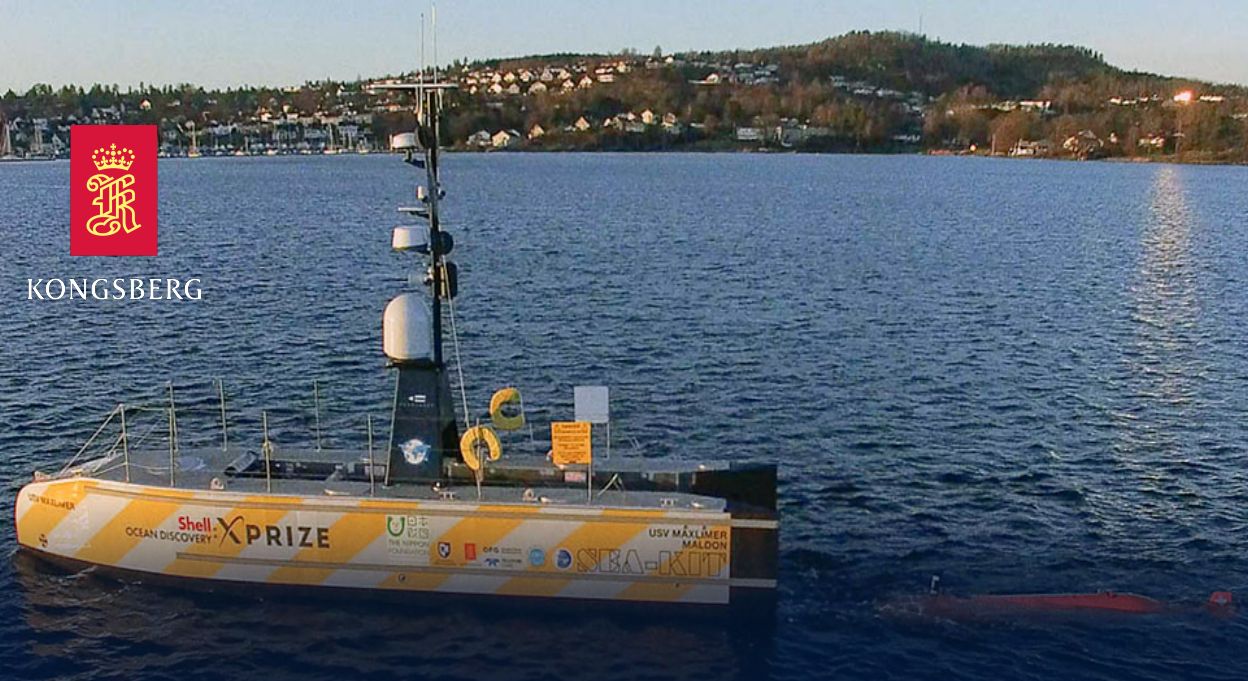


WORLD CLASS – Through people, technology and dedication

KONGSBERG PROPRIETARY - See Statement of Proprietary information



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INCREMENTAL TESTING OF NEW FUNCTIONALITIES



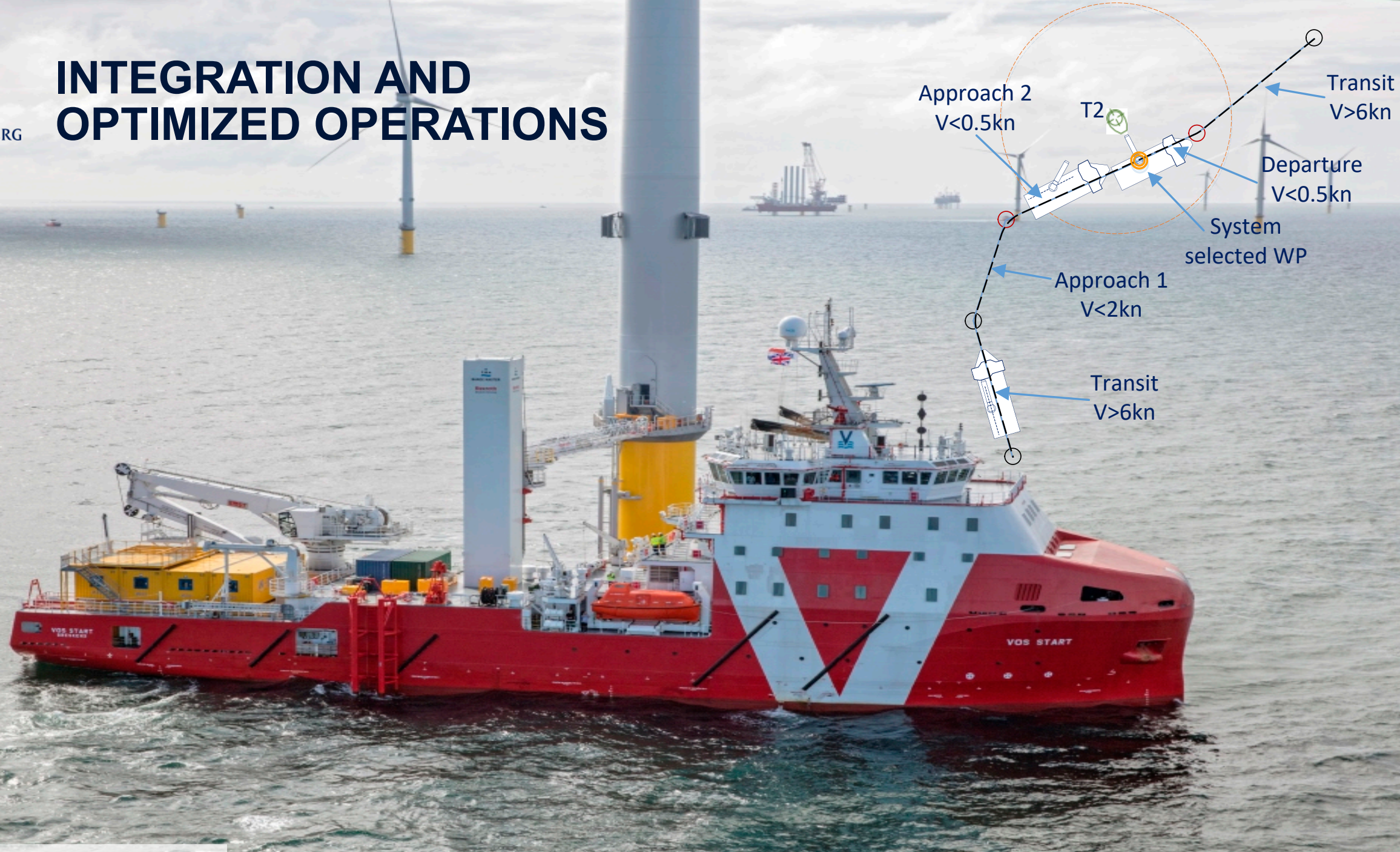


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AUTONOMOUS FERRY



INTEGRATION AND OPTIMIZED OPERATIONS

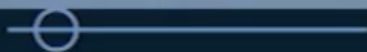


INTEGRATED WEATHER AND NAVIGATION SYSTEM

Advanced route planning and optimizing based on weather forecast
Automated execution of complete operation



BACK





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LEVERAGING EXISTING HIGH-RELIABILITY APPLICATIONS



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Analogy with the Development of Dynamic Positioning

BUSINESS DRIVE, COLLABORATION, DETERMINATION, CONTINUOUS IMPROVEMENT





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COLLABORATION ACCROSS THE MARITIME ECOSYSTEM

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Thank You!

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