CEPT WS

New spectrum solutions for industry sectors - 1.1.3 Maritime Transport

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Kongsberg Maritime in maritime transport
Fast evolving trends in maritime operations

- Remote operations
- Autonomous vessels
- Ship-to-shore data distribution
- Near-coast operations
- Waterway monitoring
- IoT services
Important existing services for maritime transport

- Navigational RADAR-bands
- HF – Voice – Low capacity for data
- AIS – safety – Vessel to vessel
- VHF – Voice – Vessel to vessel and Vessel to VTS
- Mobile – General data – Within coverage from land
- VSAT – General data – Global coverage
Autonomous vessels

- Operational requirements – redundancy important
- Available communication services – Mobile & VSAT
- Gradual approach – Autonomous functions
Autonomous container vessel

- Collaboration between Kongsberg and Yara
- Requirements for triple redundant communication links
- Proximity detection – Maritime short range radar
Missing service for maritime transport
Broadband data links for maritime transport

- Addressing maritime service for ports, coastal waterways and vessel to vessel
- Requirement for higher EIRP than RLAN
- Range is further at sea than in land operations
- Steerable radio beams for resilient data link at long range and difficult conditions
- Mobile by nature
New maritime Transport systems – Area of interest

Point of intersection between equipment size and long range propagation

Sweet spot for compact size long-range system

![Diagram showing wavelength and frequency with rain attenuation]
Maritime Broadband Radiolink standard

ETSI EN 303 276

Phased array - Real-time steerable data links
Maritime transport requires possibility to use higher EIRP than RLAN
Thank you

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