Automation and autonomy in short sea logistics – An AEGIS perspective

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Questions to be investigated in this workshop

1: How will automation and autonomy contribute to efficient and sustainable short sea cargo transport in Europe?
2: What are the challenges and what are the solutions that these three projects propose?
The six most polluting countries in the world

1. China: 30%
2. United States: 15%
3. India: 7%
4. Russia: 5%
5. Japan: 4%
6. Shipping industry: 3.1%
EU ambitions

Road freight over 300km shift [%]

% Shift from road to rail/waterborne

2030 2050

The project has received funding from the European Union’s Horizon 2020 Research and innovation program under Grant Agreement No.859992.
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Actual numbers for 1995–2016:

Total freight increased with 29% (ton-km)
Sea transport has drawbacks compared to road transport

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Need new transport systems
- Smaller ships, more flexible
- More efficient transhipment
Some more challenges

- **Cost of transhipments**
- **Cargo handling** at small terminals is slow, costly and energy consuming
- **Lack of standardisation**, both for cargo and communication
- **Regulations** are not up to date on new technology
- **Dependent on larger terminals**
Critical technologies and operations

- Logistics system redesign
- New terminal concepts
- Automatic cargo handling
- Autonomous and green shuttle
- Digital connectivity
- Policy measures
- Safety, security and resilience

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Use-case A: Short sea terminals in Norway

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Use-case B: RORO Short sea and inland shipping in Belgium and Netherlands

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Use-case C: Revitalizing regional ports and city center terminals; Aalborg and Vordingborg

- From road to sea
- Use of autonomous feeders?
- Automatic cargo handling
- Improved port logistics

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Solutions – summary

- Autonomus shuttle, e.g. mother-daughter concept
- Standardized cargo, e.g. 20' and 45' containers
- Revitalization of small and medium ports
- Autonomous cargo handling, both onboard and at the port
- Digital connectivity
- Last mile automation
- Improved access to waterborne transport
Project data

• EU Horizon 2020 call:  
  *MG-2-6-2019: Moving freight by Water: Sustainable Infrastructure and Innovative Vessels*

• Budget: EUR 7.5 Million

• Start: June 1st 2020

• End: May 31st 2023 (36 months)

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Thank you for your attention