Digitalization and Autonomous Ships

Conference on Maritime Autonomous Surface Ships, Copenhagen 14.11.2017

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Favourable Operating Environment for Digital Services

- Robotics and Automation
- Information Security Strategy
- Internet of Things
- Digitalisation of Logistics
- Dataeconomy and Big Data
- Mobility as a Service
- Satellite Navigation Strategy
- Broadband Strategy
FINNISH VISION: TO BE A GLOBAL TEST SITE FOR AUTONOMOUS SHIPS

The Ministry of Transport and Communications is committed to:

- Encourage Finland to become a pioneer in intelligent maritime test sites
- Enable experiments with autonomous vessels
- Enhance testing of autonomous vessels promptly, efficiently and in a flexible manner
- Be active on international forums (IMO, EU) to introduce international legislation favourable for autonomous vessels
Automation – way forward
- Finnish Roadmap for transport automation 2017-2019

Transport services

- Aim: Intelligent automation and robotics enables new business oriented and user friendly services models for all modes of transport

Digital and physical infrastructure

- Aim: Finland has an exemplary digital and physical infrastructure for automated transport solutions. It is a great basis for experimentation and versatile service design

The use of data and traffic management

- Aim: The data required by automated transport is open and efficiently usable. Automated transport is safe and technically secure. The automation in traffic management has increased.
Building EU Data Economy: Finland as a partner

EU Digital Single Market
• Free flow of data → ambitious objectives and efficient measures

Access
• Public and privately held data

Portability
• Application programming interfaces (API)

Interoperability
• Structured data models, open interfaces and decentralised data management

Data producer and user rights
• Principles-based, horizontal

News, 5/22/2017
From Well Begun to Data-Driven by Default

“Well begun is half done”, five famous words of Aristotle. Interestingly enough, the sentence is found in his work Politics. Is well begun half done a fitting guideline even today, in our efforts to achieve the Digital Single Market?

According to the recently published European Commission’s mid-term review, there has been considerable progress in the EU’s pursuit of harnessing digitalisation for the benefit of its enterprises and citizens. For example, its modernised data protection rules are the most ambitious ones in the world. By combining our dedication to protecting citizens’ rights with the enhancement of business opportunities, these rules will surely serve Europeans in the digital era. Still, there are areas that need more attention – such as online platforms, cybersecurity, and the data economy.
Autonomous shipping - closer than we think?

• Automation is expected to enter vessels gradually:
  - New advanced technology and highly automated work on vessels
  - Partly automated operations on vessels
  - Remotely controlled vessels
  - Autonomous vessels

• Automation can offer advantages:
  - Reduction of fuel consumptions, costs and emissions
  - Reduce the amount of manual work onboard
  - Optimization of cargo flow in logistics
  - Improving the safety related work and operations
Autonomous maritime ecosystem started in Finland

New business ecosystem brings together global forerunners and agile ICT start-ups to develop first autonomous shipping solutions in the world by 2025

The roadmap creation and implementation is steered by a group of globally leading industry partners: ABB, Cargotec, Ericsson, Meyer Turku, Rolls-Royce, Tieto and Wärtsilä
The Finnish Maritime Cluster
Why ecosystem?
GLOBAL TEST SITE FOR AUTONOMOUS SHIPS IN FINLAND

- The first globally open test area to anyone wishing to test autonomous maritime traffic, vessels, or technologies related to it
- The test area is available for one organization or party at a time
- Test area is managed and controlled by DIMECC Ltd, the administrative partner of the One Sea – Autonomous Maritime Ecosystem;
- More information on test area: - https://oneseaecosystem.net/test-area/test-application/

The Ministry of Transport and Communications enables testing of autonomous ships in Finland in a flexible manner
Intelligent fairways
A step towards autonomous vessel traffic

The VTS Centre ensures electronically that vessels’ routes are safe and efficient.

The intelligent fairway utilises vessel data.

The vessel receives up-to-date digital weather reports and forecasts.

Aids to navigation adapt to conditions and vessel movements.

The vessel receives up-to-date digital water level data and forecasts.

Benefits
- Facilitated route planning and navigation.
- Improved cost-effectiveness and optimised cargo volumes.
- Enhanced safety through reduced risk of groundings and collisions.

The vessel receives seabed data.
How to Ensure Future-Ready Legislation?

• Holistic approach to the transport system  
  – No more silos!

• Enable digitalisation and Automation  
  - Deregulate + Have an influence on international rules!

• Link MaaS / LaaS to wider context  
  - Data Economy and Paltform Economy, Multimodality the 1st choice!

• Decarbonisation  
  - In everything!
Future possibilities for developments in automation of ships, digitalization, use of data and information technology
Digitalization Covers Whole Society

finland-defining-the-next-100-years.mp4
Thank you for your attention!

=> LOOKING FORWARD FOR FUTURE WITH MARITIME AUTOMATION