

Dynamically Adaptive FI-Applications: Beyond Adaptive Services

Scenario: Transport & Logistics (T&L)

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Finest (FI PPP Use Case Project)

FIA-Budapest, 18th May, 2011

- **Economic impact of Transport & Logistics in the European Union**
 - 7% of the GDP
 - 5% of total employment
- **Ecological impact of T&L***
 - ~15% of the global gas emissions are caused by transportation
 - Transport-caused emissions
 - Increased 50% in 2010 (compared with levels from 1990)
 - Expected to double again by 2030

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Efficient T&L processes
are important in terms of
economical and
ecological aspects

- Highly distributed inter-business activities



Current problems

- Closed logistic supply chains
- Limited support for agile inter-organizational information exchange and collaboration
- High fragmentation of ICT technologies used by different stakeholders
- Highly manual process associated with legal and governmental regulations

- Highly distributed inter-business activities

Current problems

- Closed logistic supply chains

Requirements for FI Applications in T&L

- **R1 - Efficient support for inter-organizational collaboration in cooperative business networks (operation in agile and dynamic environment)**
- **R2 - Seamless integration of information and data along with real-world data acquisition and integration**

- High fragmentation of ICT

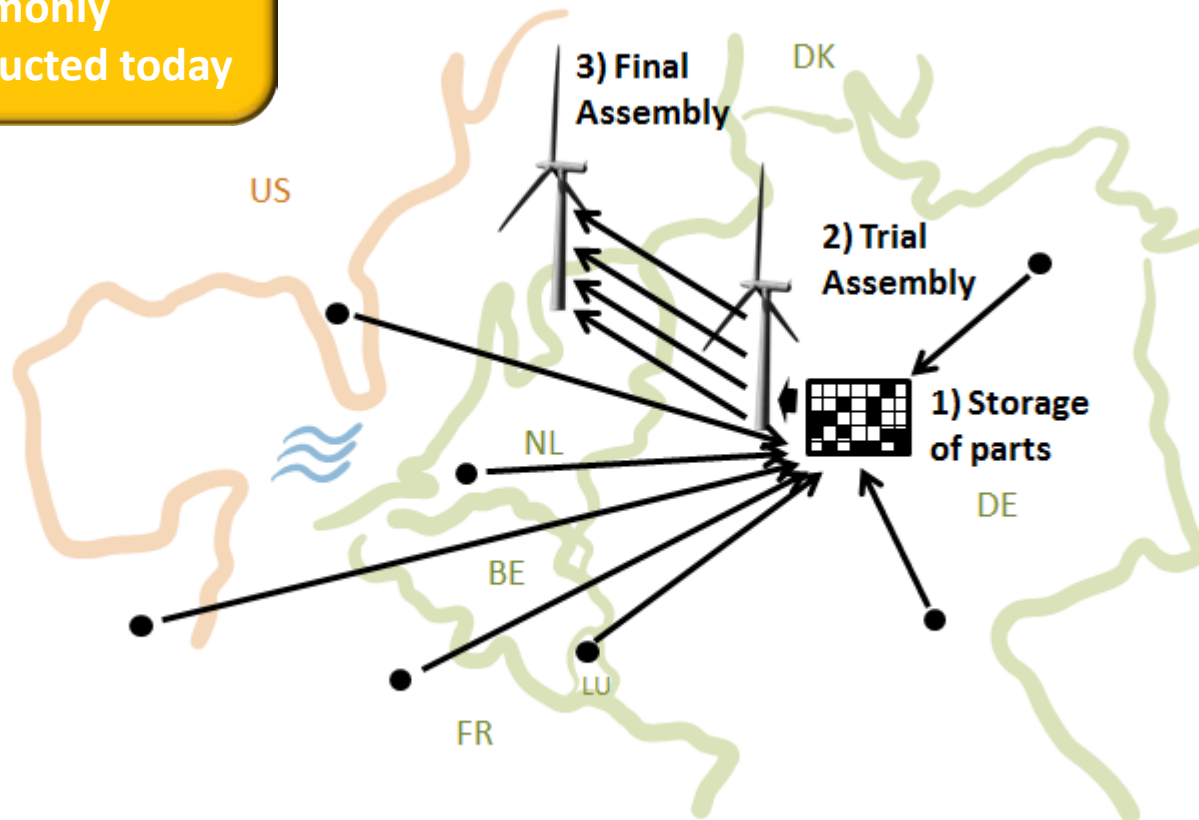
T&L Processes

- Use Case: Construction of Offshore Wind Energy Plant



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Logistics processes as commonly conducted today

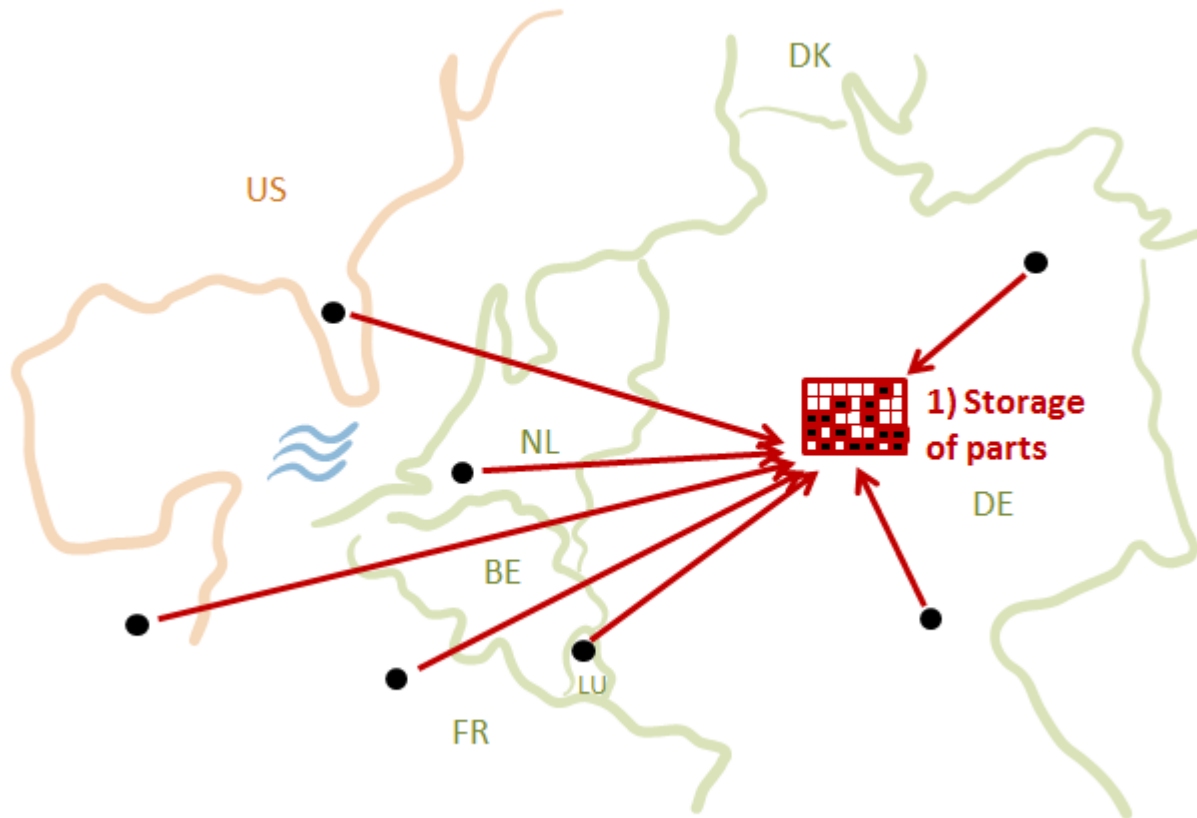


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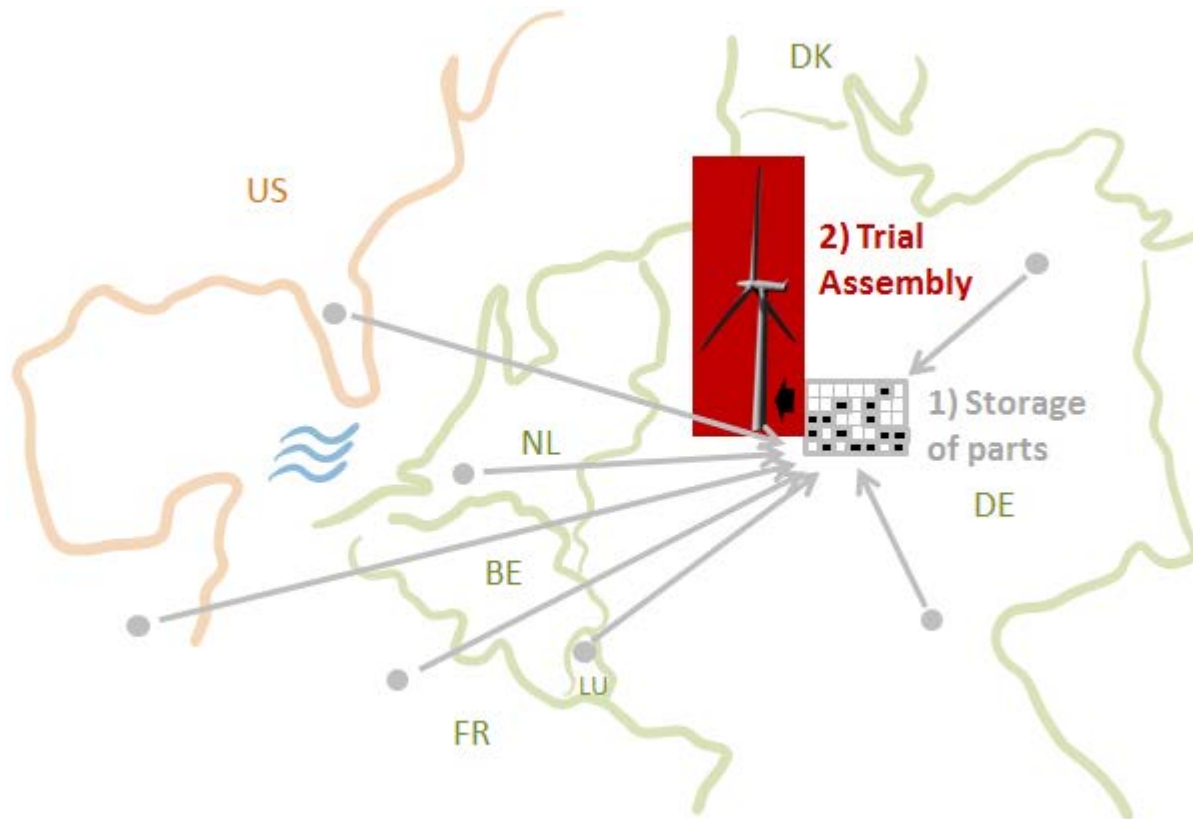
➔ Individual components produced by different suppliers

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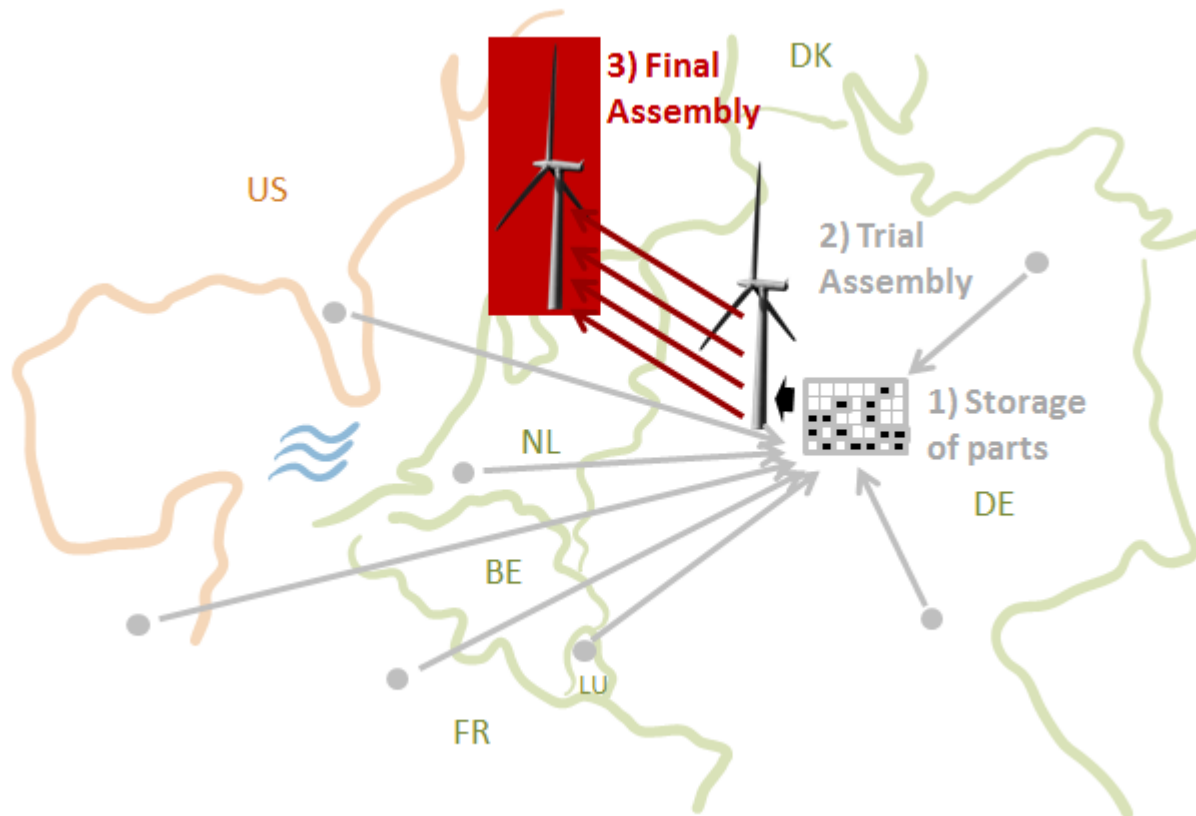
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- ➔ OEM or system integrator receives the components

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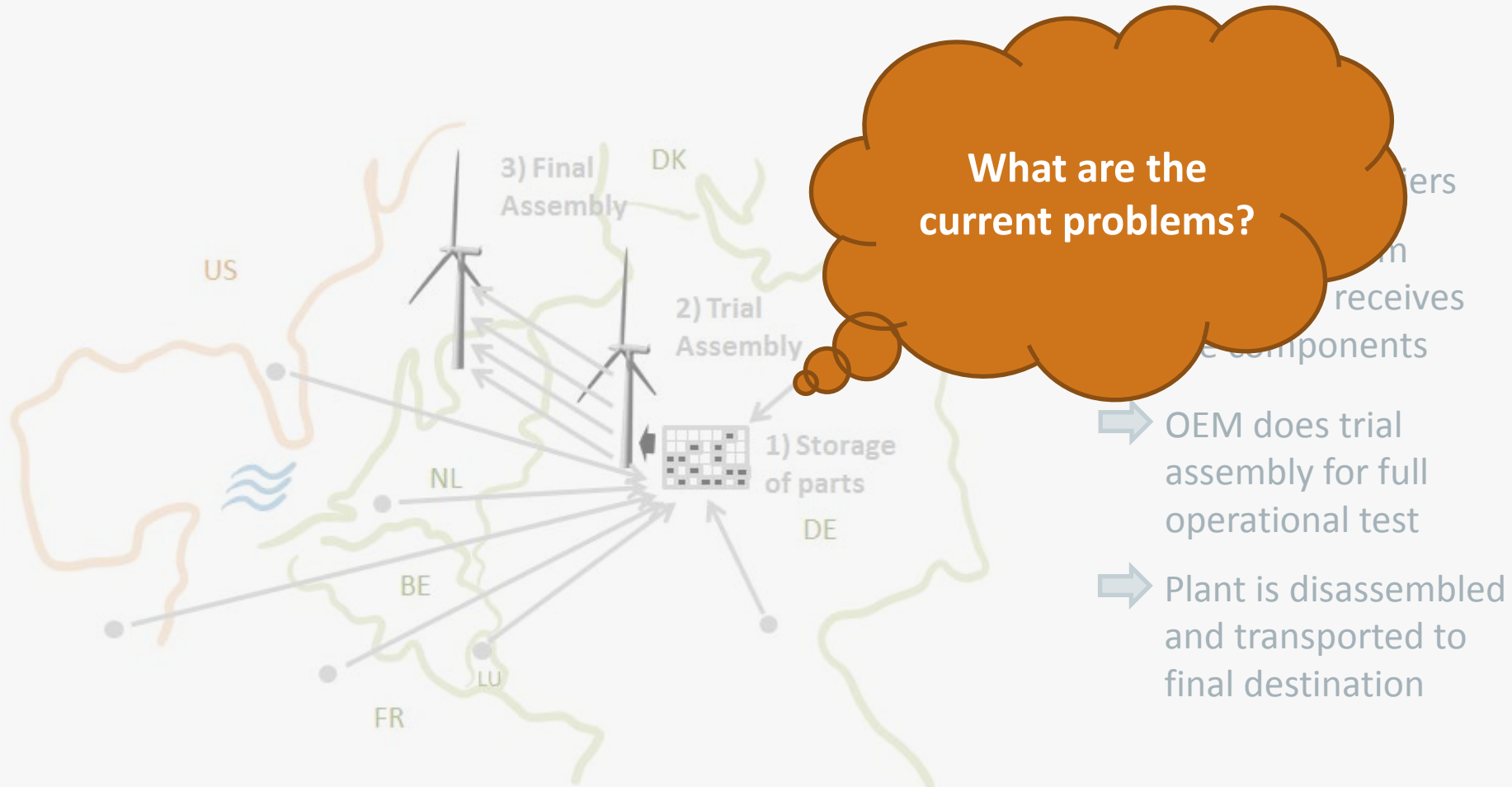
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- ➔ **OEM does trial assembly for full operational test**

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- ➔ Individual components produced by different suppliers
- ➔ OEM or system integrator receives the components
- ➔ OEM does trial assembly for full operational test
- ➔ **Plant is disassembled and transported to final destination**

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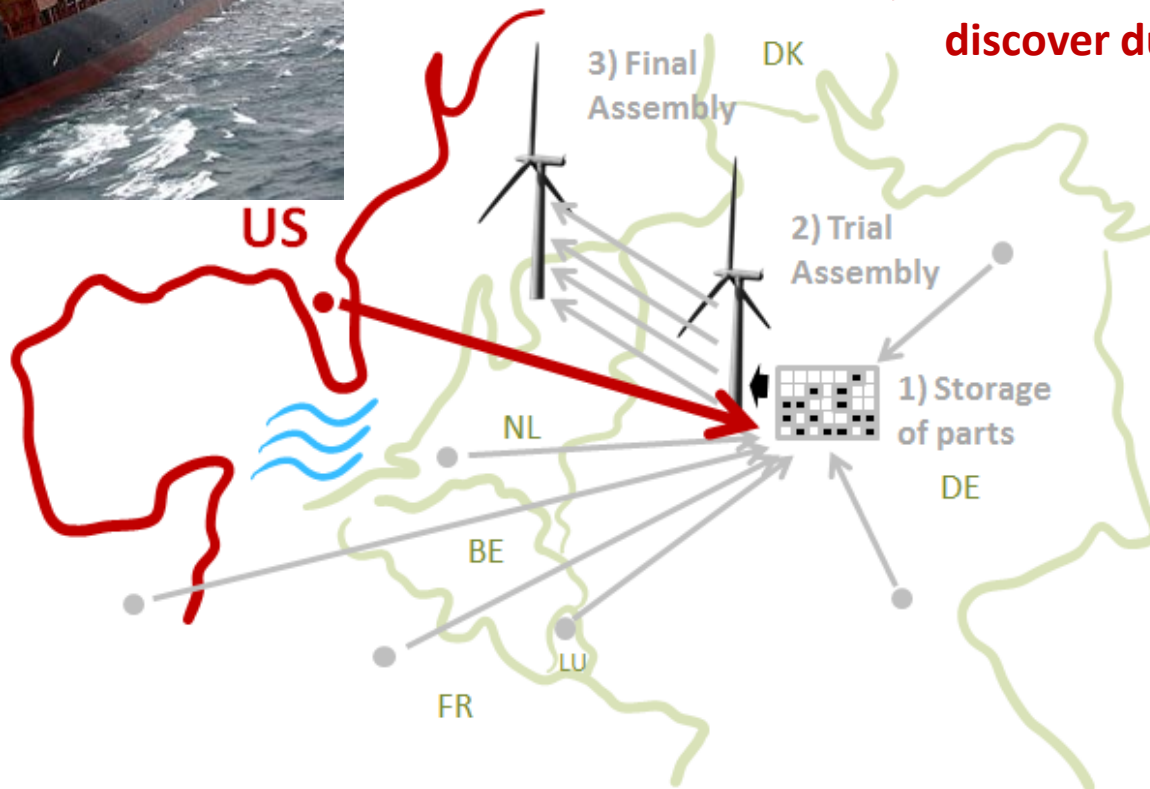


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No end-to-end visibility during transport process

Eventual damages to the parts of the wind engine will be discover during trial assembly



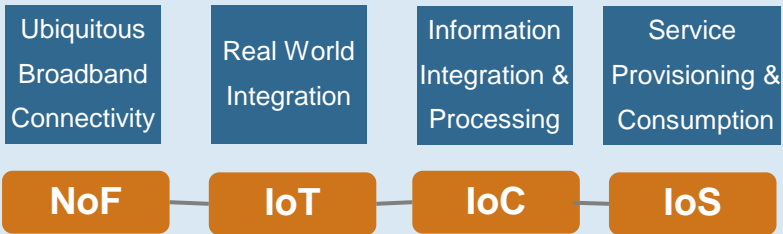
Associated problems:

- delay on assembly
- warehousing

Future Internet T&L Applications

- Use Case: Construction of Offshore Wind Energy Plant

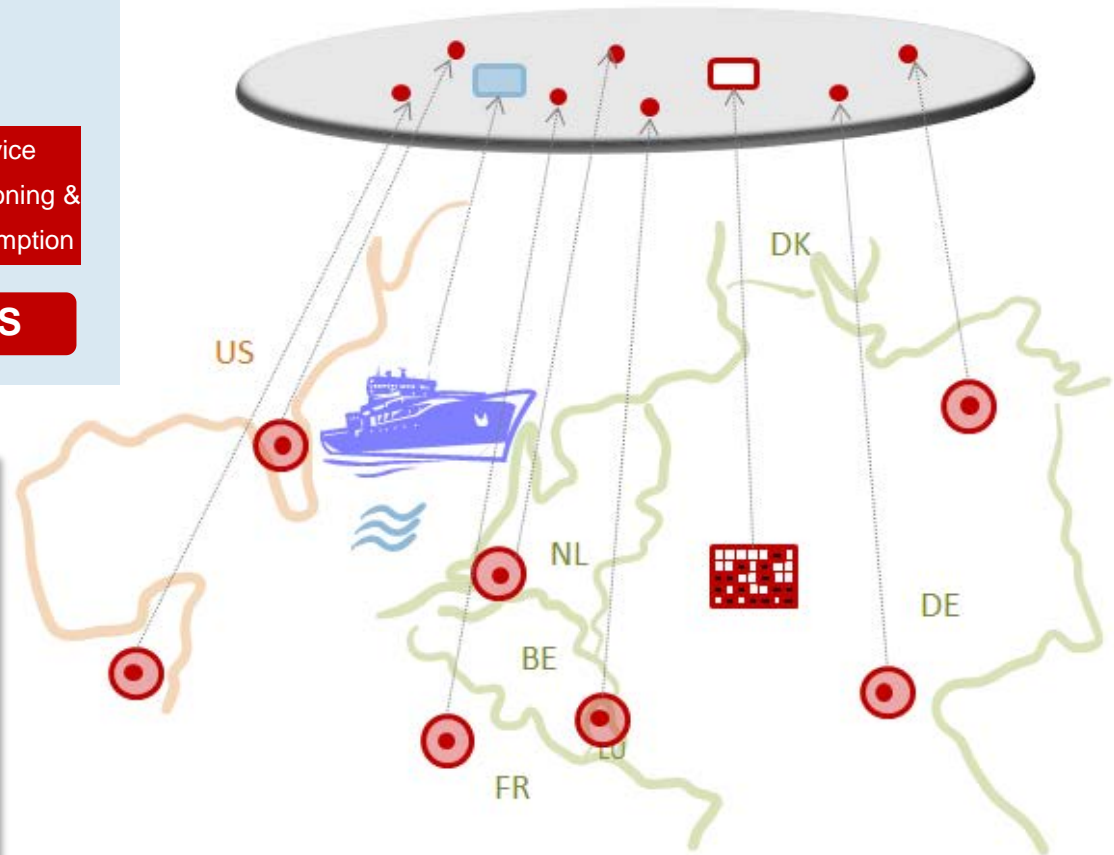
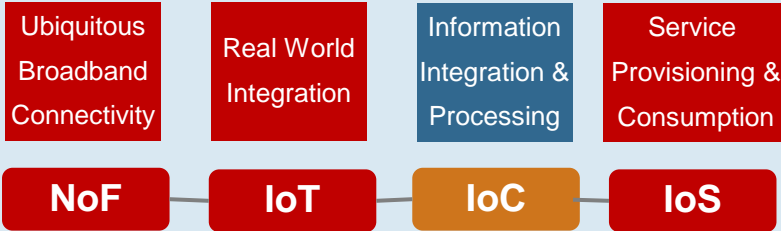
Areas of Future Internet Platform



Future Internet T&L Applications

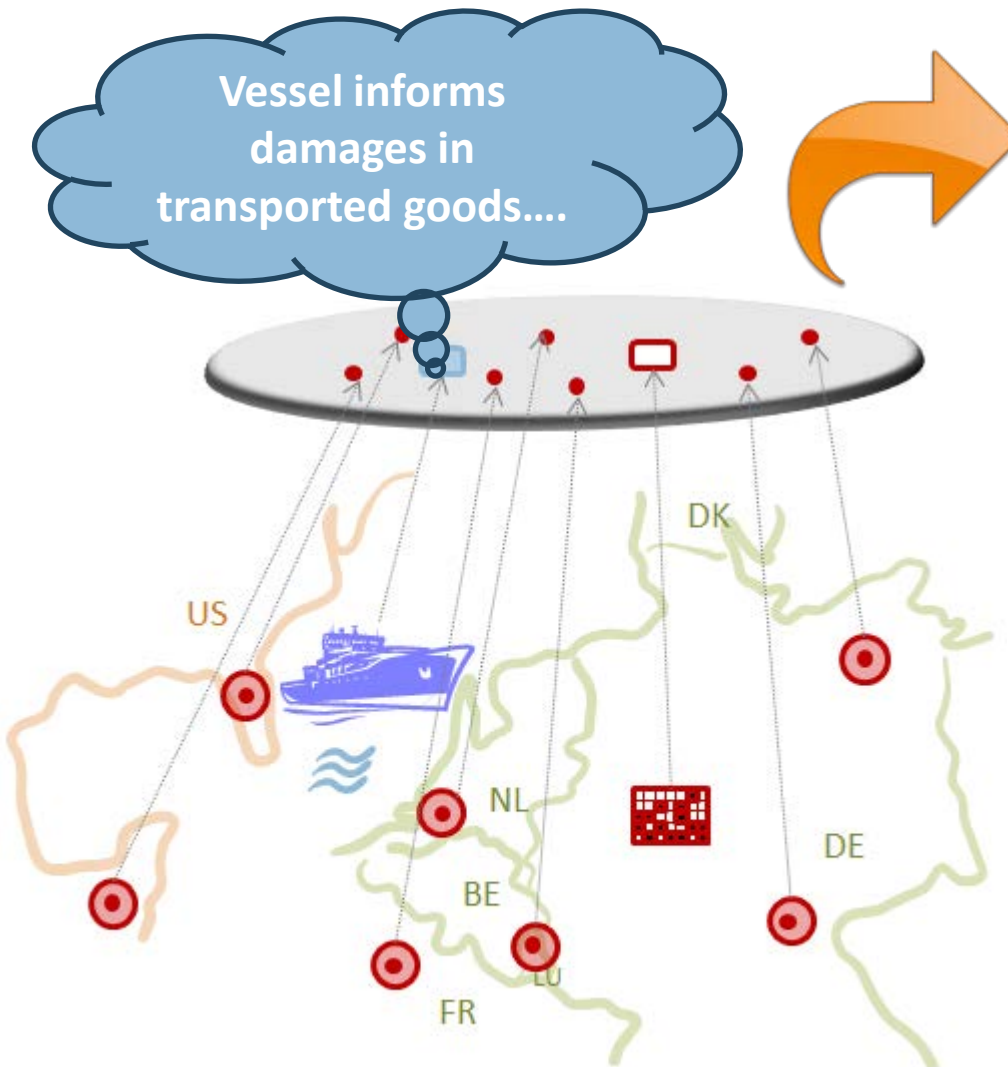
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Areas of Future Internet Platform



- Facilitate access to information across organizational boundaries
- Comprehensive monitoring
- Real-time information
- Ubiquitous access to information

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- Who is responsible for taking a decision?
- How to re-organize the inter-organizational dependencies?
- How to avoid a chain of effects derived from the reported problem?



**Tracing of Intelligent Logistic
Objects – TILO Project**



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FUTURE OF LOGISTICS

THANK YOU!

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