binntelligent

IHATEC
Innovative Hafentechnologien

Gefördert durch:

Bundesministerium für Verkehr und digitale Infrastruktur

aufgrund eines Beschlusses des Deutschen Bundestages

11.04.2019

Smart services for inland ports and IWT

Two case studies from the projects “SELIS” and “Binntelligent”

PORT DIGITALISATION CONFERENCE

DANUBE PORTS IN THE DIGITAL AGE: CHALLENGES & OPPORTUNITIES

ISL

Facts and figures

binntelligent

- Funded by BMVI within IHATEC Programme
- Project Coordinator: ISL
- 6 partners from Germany
  - Inland ports
  - IWT operator
  - RTD partners
- Duration from 10/2018 till 09/2021
- Budget: 2.2 Mio Euros

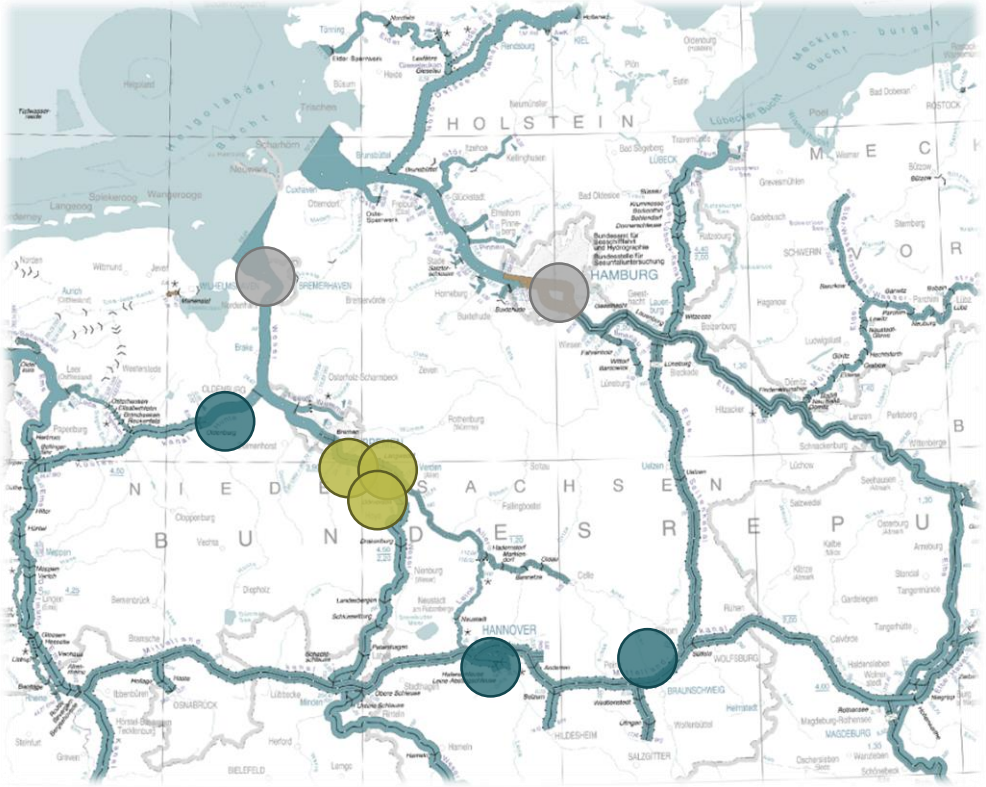
SELIS

- Funded by European Commission within H2020 Programme
- Project Coordinator: Inlecom Systems Ltd
- 38 partners from Europe
  - Cargo owners
  - LSPs: ports, forwarders, IWT operator
  - RTD partners
- Duration from 09/2016 till 08/2019
- Budget: 17.7 Mio Euros

Project goals

Implement and evaluate **smart digital services** as well as **intelligent processes, methods and technologies** for the optimisation of multi-modal logistics- and transhipment processes in inland ports in addition to **enhanced collaboration** between inland- and sea ports.

Geographical scope of binntelligent



Inland ports

- Hafen Hannover
- Hafen Braunschweig
- Rhein Umschlag / WCX

RTD partners

- ISL
- Bremer Institut für Produktion und Logistik
- Datenbank Bremische Häfen

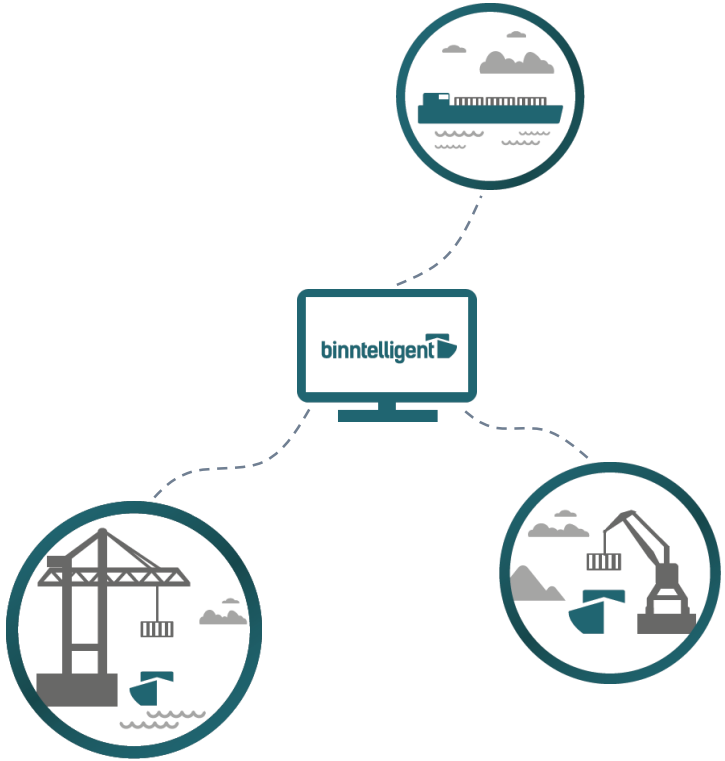
Seaports

- Bremerhaven
- (Hamburg)

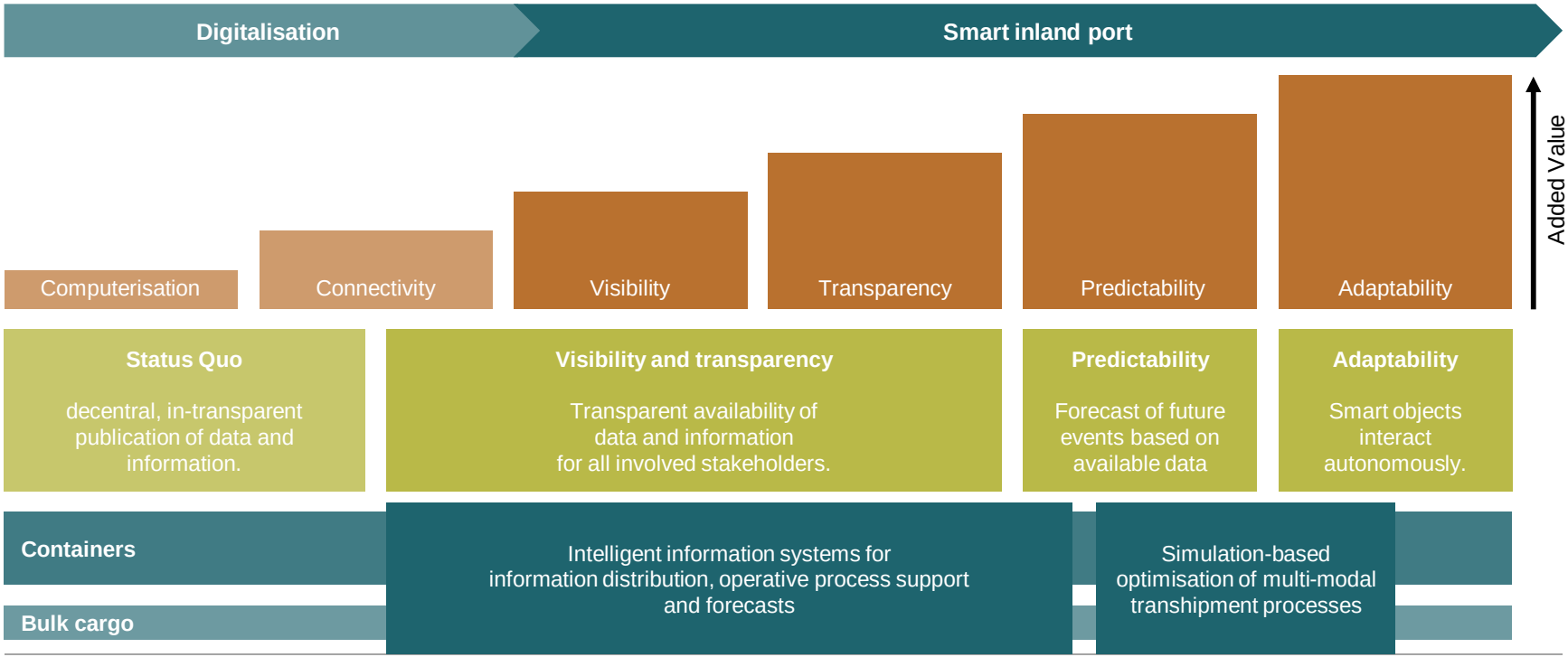
Smart digital services…

…acquire and **aggregate data**, which is gathered at **physical places or processes.**

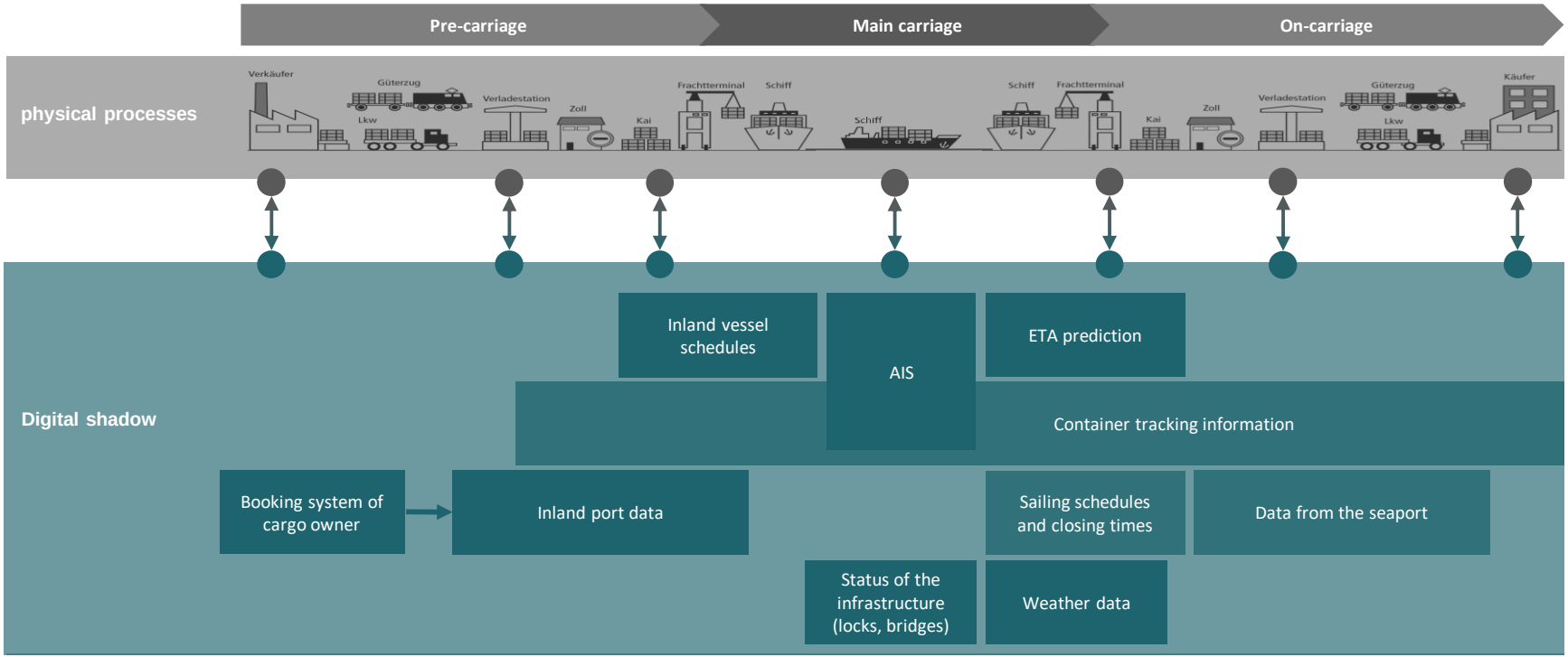
… **add value**, by processing the data intelligently in order to deliver **customized decision support information** over a digital channel



Intelligent information technologies for IWT and inland ports



Inland Port Community System

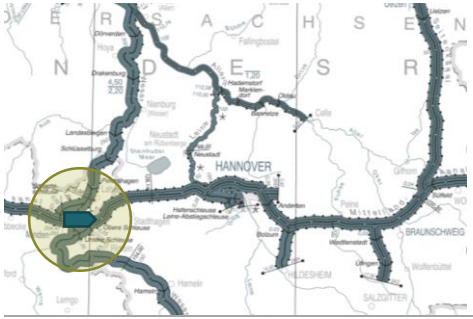


Intelligent Information system

- Synchronizing means of transport and cargo items in inland ports

Means of transport

Estimated Time of Arrival
and
Requested Time of Arrival



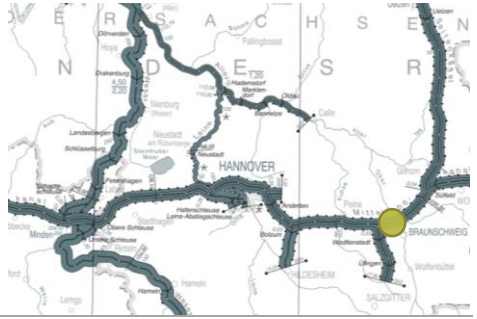
Inland port of the future

Optimized transhipment

Transport

Cargo items

Estimated Time of Availability
und
Requested Time of Availability



Identified functional requirements

Predictability of the transport processes	• Forecasted times of the passing of specified waypoints (ports, locks etc.) • Estimated time of arrival in inland ports • Estimated time of availability
Automated digital information exchange	• Enhanced and automated communication between stakeholders • Support for mandatory reporting towards authorities
Status information on cargo in sea- and inland-ports	• Availability of import container • Handling information of vessels in the port • Cargo status information (i.e. container movement status) from sea- and inland-ports

Towards a Shared European Logistics Intelligent Information Space

Information sharing for collaborative sustainable logistics

Innovation – technical Approach – Demonstration

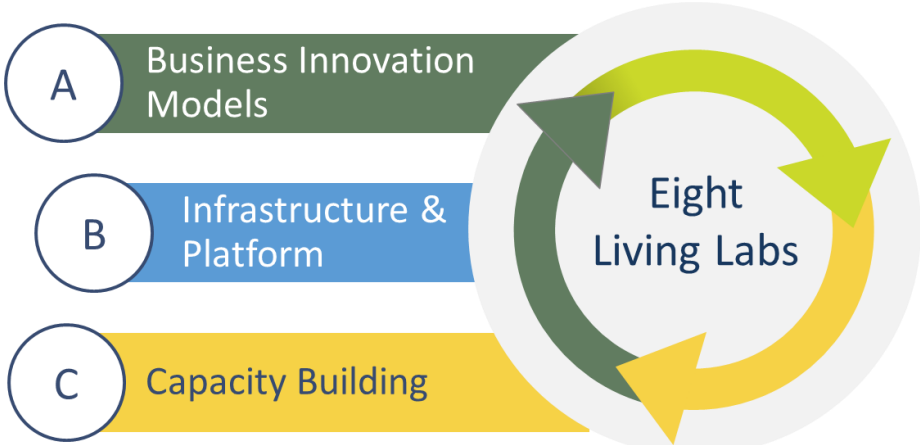
PORT DIGITALISATION CONFERENCE, VIENNA

11. April 2019

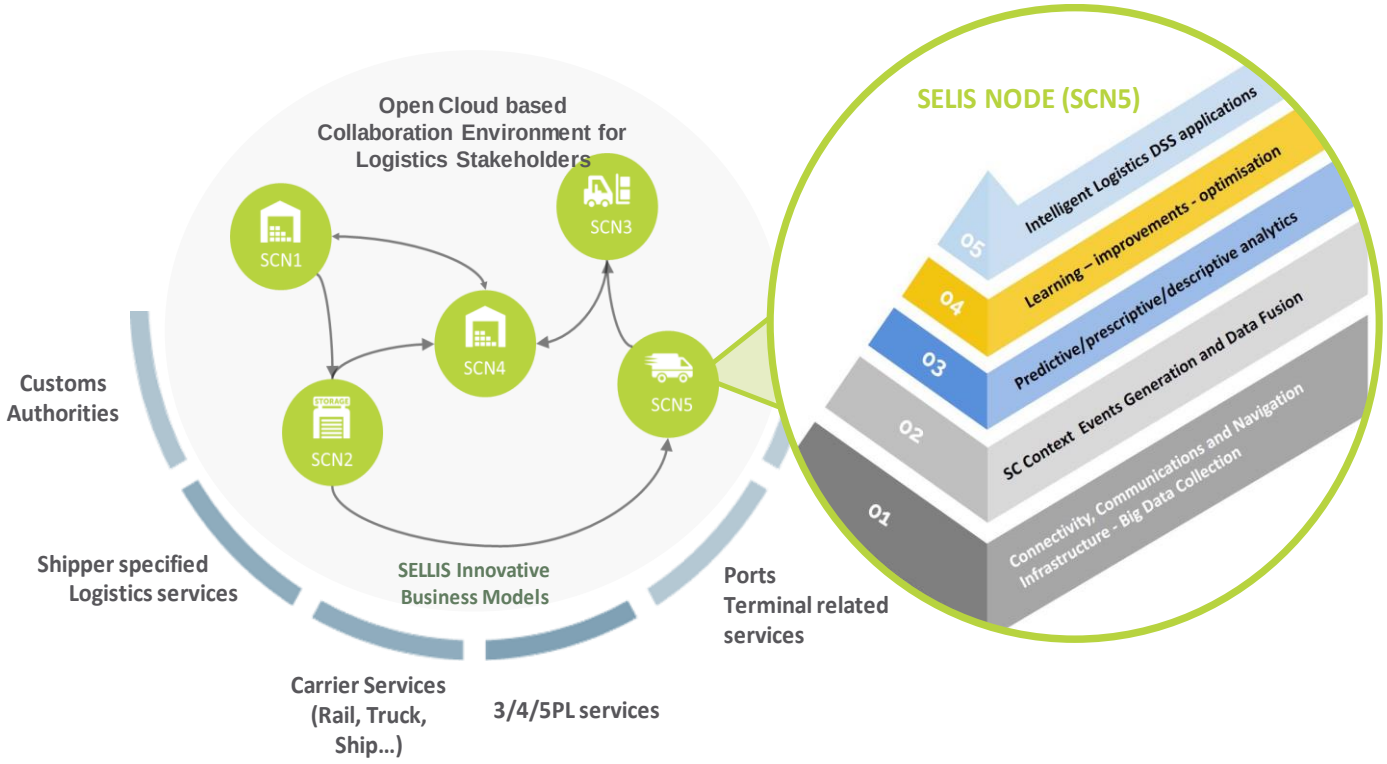
Project Goals

Delivering a platform for connected logistics applications

- Cooperative business models based on logistics information flows
- Out-of-the-box data and information services
- Distributed and applicable to different logistics communities of variable sizes



Network of SELIS Community Nodes



Community Perspectives

Living Lab Demonstrator

- IWT service providers: TRIMODAL & NWL
- Inland Ports: e.g. Container Terminals in Bremen & Hannover
- Sea-Port Terminals: e.g. Eurogate Bremerhaven

Business Benefits

- Optimization of planning & operational processes
- Increase of capacity use by improved planning capabilities
- Cost & CO2 reduction
- Modal shift towards inland shipping

Living Lab Application Development

Current Business Challenges & Problems

Supply Chain Visibility

- Perception of a lack of operational reliability of IWT
- Lower maturity level of planning processes
- Lack of monitoring capabilities (visibility)

Dashboard

- Lack of data access and non-existent integration of relevant logistics events
- Difficult and work-intensive evaluation and control of KPIs

Advanced Capacity Planning

- Sub-optimal capacity utilisation
- labour-intensive manual planning activities
- uncertain transport volumes (i.e. provisional bookings)
- unpredictable operational issues (i.e. container availability, deep sea vessel schedules, travel & handling times)

Solutions and Benefits

SELIS Community Node Application

- **SCN-Application** providing **SC Visibility services** to enable cooperative solutions
  - Status of container bookings
  - Integrate deep-sea data, vessel schedules, container availability, and handling status (load/unload)
  - Provide Information services via APIs complementing the SC Visibility services
- **Dashboard** on top of the visibility services and external information sources to provide real-time KPIs and operational status overview:
  - Delays & Reliability
  - Data quality and advised workload
  - Capacity utilization
  - Customer analytics, order patterns and prediction
- **Advanced Capacity Planning** tool to simplify daily planning
  - integrated visibility data
  - Situational awareness and prediction

Inland Port Perspective

Smart digital services

Sea Port	IWT	Inland Port
• Inland Vessel call size • Missed connections • ETA/ETD deviation • Container dwell time	• Lead Time • Capacity utilisation	• Call size & Frequency • ETA/ETD deviation • Waiting time • Handling performance • Container dwell time

- Benchmarking
- Promoting IWT
- Predictive analysis