Herøya Industrial Park is “spear heading” green and smart freight transport. The park is a “Living lab” in the Horizon 2020-project “Orchestra” for pilots for automated freight transport and a digital traffic management system for multimodal transport of goods and persons.

How and what benefits can smart and green solutions bring to industry and society?

Tove Sørensen, Herøya industripark, Horizon 2020-project “Orchestra”
Our challenge –
green and smart freight transport

- How can we optimize the operations in the park?
  - Freight transport
  - Maintenance
  - Other?

- Industry innovation (EU)
- Responsible consumption and production (EU)
- Climate action (EU)
- Partnerships (EU)
- Future relevant (HIP strategy)
- Safe and Secure (HIP strategy)
- Climate positive region (HIP strategy)
- Efficient (HIP strategy)
Ongoing projects - green and smart freight transport

- **Autonomy**
- Digital infrastructure
  - 5G
- **Orchestra**
  - EU-funded project; multimodal traffic management
- Optimized logistics
Autonomy at Herøya Industrypark

Part of the strategy:

- Safety and security
- Efficiency

- Become an autonomous industry park
  - keep up with new demands
  - Industry 4.0
Autonomy – first step – Be autonomous ready

- Rules and regulations
- Control system
- Equipment
This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 953618. The content of this presentation reflects only the author’s view and the European Commission is not responsible for any use that may be made of the information it contains.
Coordinating and synchronising multimodal transport
improving road, rail, water and air transport
through increased automation and user involvement

The **ambition** is to design a multimodal traffic management ecosystem
and build and demonstrate technical solutions,
organisational aspects, processes, and tools.
The long-term vision of the ORCHESTRA is a future where it is easy to coordinate and synchronise the traffic management of all modes to cope with diverse demands and situations.

Traffic management for sea, road, rail, and air transport should work together to support new multimodal transport services. It needs to facilitate better utilisation and more resilience in all situations – from daily operations to disasters.
ORCHESTRA project fact sheet:
Name of project: ORCHESTRA
Total cost: 5.1 million €
EU Contribution: 4.9 million €
Coordinator: ITS Norway
Start: May 2021
Duration: 36 Months
Transport sector in general

One or more modes

Transport aspects

Road
Sea
Air
Rail

Traffic aspects

How to get the mobility/transport we need without too many negative effects from the traffic?
How to get transport that is safe, efficient, environmental friendly, flexible, resilient, ...
Traffic Management Today

- Traffic management is done in silos – there is no or little coordination across modes
- In some modes: Coordination between areas/segments (e.g. air and sea)
- Focus on safety/security and utilisation of capacity
- Some focus on automation - mainly related to safety and manoeuvring

- No focus on/support for transport chain
- Limited focus on transport operation
  - Mainly on safety, dangerous cargo, data collections for authorities, ...
  - Not on the transport operation execution
Future traffic management
Public road/rail networks

Terminal/Milano centrale

Road/Rail – Bus/Airport Express Train

Terminal/airport

Flights/airways

Traveller centric

Metro public networks

Terminal/airport

Goods/freight centric

Public road/rail networks

Autonomous Pilot car

Terminal/harbour Herøya Industry Park

Autonomous vessel

Sea lanes/Fairways

Source: ITS Norway

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HIP Traffic management system

Overall status, priorities, emergency situations

Fleet management system (pilot cars)

Route, pick-up, return, timeslot etc

Autonomous pilot car

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How and what benefits can **smart** and **green** solutions bring to industry and society?

Why do we do this?
How and what benefits can **smart** and **green** solutions bring to industry and society?

**Smart?**

- **Effectivity**
  - All day and all night
  - Lights-off
- **Reduced cost, personell and equipment**
- **Safety**
How and what benefits can smart and green solutions bring to industry and society?

Green?

- David Attenborough: A Life on Our Planet | Official Trailer | Netflix – YouTube

- Sharing resources
  - Equipment and capacity
- Green energy
- Circular economy
How and what benefits can **smart** and **green** solutions bring to industry and society?

**Changes?**

- City-design / Urban planning / public transportation
- Sharing is caring
- Regulations on emissions