



French-Swedish Workshop on
Research, Innovation and Education

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Closure address on “Innovation Challenges”

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City logistics

- Urban freight remains a low cost/low price
- Market with huge environmental impacts
- Behaviour's changes and fragmented policies
- New players and logistics landscapes
- Innovative tools for sustainability:
 - EVs, delivery hours, modes and infra
 - Access Control
 - Digitalization and automation, IoT
- Construction logistics:
 - Cooperative consolidation centres
 - Fossil/Disturbance free cities, waterways...





Electrical mobility (freight)

- ERS to achieve the decarbonisation's challenge



TRAFIKVERKET
SWEDISH TRANSPORT ADMINISTRATION

- Pilot tests on-going in Sweden with several technologies

- Ground power supply (APS) by Alstom...

 **ALSTOM**
Designing fluidity

Infrastructure of every day and innovation

- The key issues in cities are not technical, but concern ownership, dynamics, identity, culture, social fabric, economics, ethics and politics.
- AVs in the cities should be anticipated
- Road infrastructures and evolution of mobility ?
Challenges for the future of road network:

- Performance, functionalities, maintenance financing, PPP
- Modernization of road assets,
- Consistency of major options, anticipate changes

Smart cities

- Challenges:
 - Urbanization, densification
 - Climate change
 - Mobility, health
- Smartness:
 - Energy harvesting, storage, saving
 - Water supply
 - Mobility infrastructure
 - Smart buildings, roads → resilience



Sustainable Water Resource, Eco-pavements and Energy Management

- Water supply monitoring by nano-sensors:
 - Network efficiency
 - Water quality, contamination control
 - Water harvesting and purification (solar)

ESIEE
PARIS



- Bio- and recycled pavement materials
and smart testing by modal analysis



- Multi-energy networks and modelling:
 - Buildings retrofitting, connection
 - Energy diagnosis & recovering



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Mobility as a Service (MaaS) - 1

- Sustainable mobility for people
 - accessibility, information, ticketing
 - public-private service providers, digitalization, electrification, vehicle design, integration



- Multimodal cloud based employee mobility service + e-bike



SCANIA GO!

→ benefit assessment: cost & time savings + air quality

Mobility as a Service (MaaS) - 2

- Human factors in automated driving
 - performance, acceptance and comfort
 - vigilance, non driving activities, transitions AD-MD, interaction in mixed traffic
- Distributed and dynamic management of a fleet of autonomous taxis:
 - use of city graphs
 - vehicle redistribution algorithms
 - Optimization: fleet size, ridesharing

