

Urban Wästljung

Manager Sustainable Transport
Environmental and Public Affairs



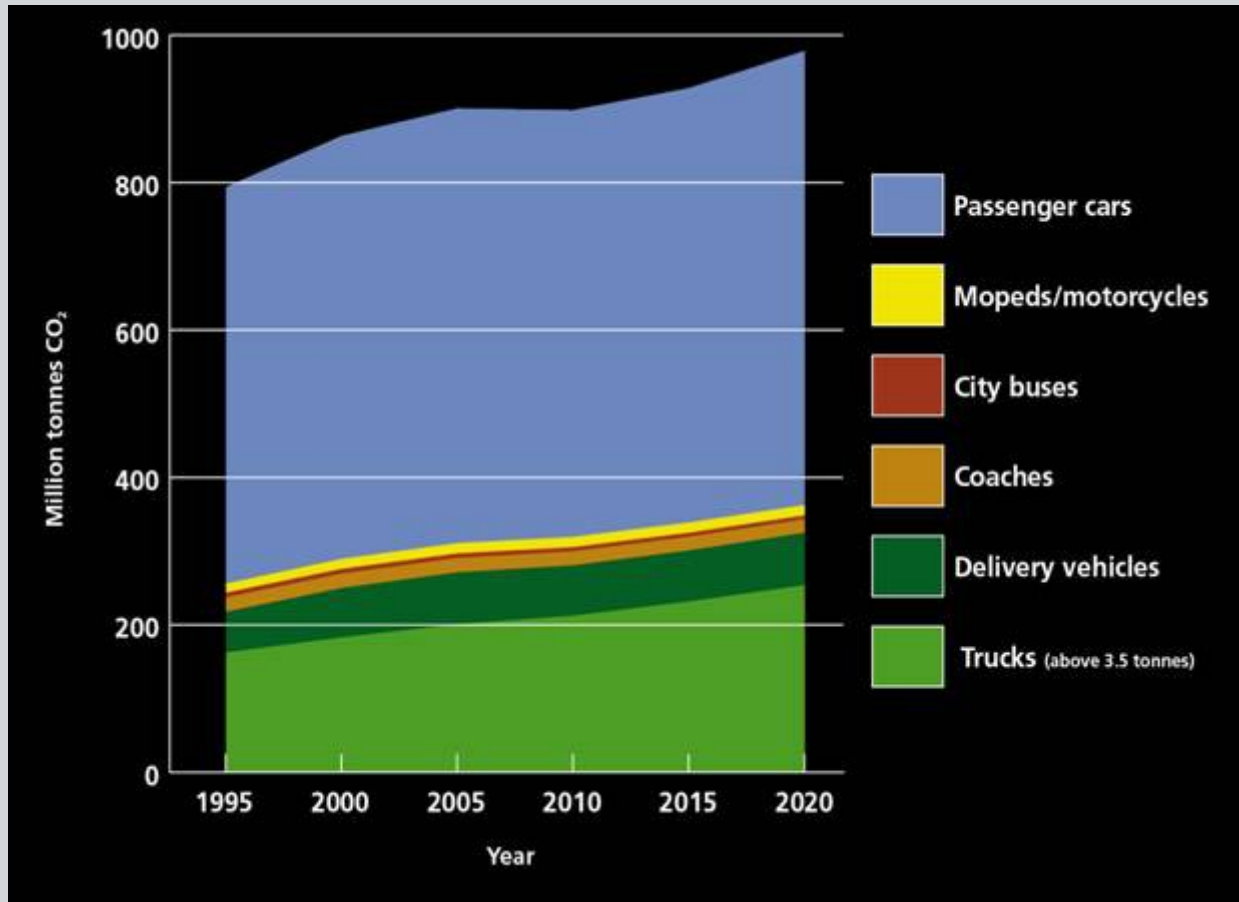
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18 June 2014



A system view on efficient heavy duty road transport

June 18, 2014
Urban Wästljung

Projected CO₂-emissions from road transport in EU



Domains of improvement

Tailored trucks & Standardized Load Carriers

- Cost effective vehicle combination architectures for different transport segments and assignments
- Configurable modules
- Aerodynamics & Light weight solutions

Self-Operating & Resilient Trucks

- Safe & Efficient self-operating trucks
- Available truck

Sustainable & New Energy Trucks

- Energy effective vehicle architectures
- Energy effective propulsion architectures
- Energy carriers and conversion
- Breakthrough concepts

Transport System Integrated Trucks

- Driver, truck, load & localization status & instructions data transfer (e.g. E-freight)
- Inter-urban transport and co- and intermodal hubs
- Urban transport and consolidation centers
- Truck & Driver Security

Traffic & Infrastructures Integrated Trucks

- Safe & efficient cooperative driving
- Energy & information infrastructure interface
- Trucks in Corridors

Heavy duty trucks in an efficient transport system

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Transport System Integrated Truck



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Transport System Integrated Truck

Growing transport need

Inefficient transport system

Increased efficiency - integrated mobility systems

- Driver, truck, load & localization status & instructions data transfer (e.g. E-freight)
- Inter-urban transport and co- and intermodal hubs
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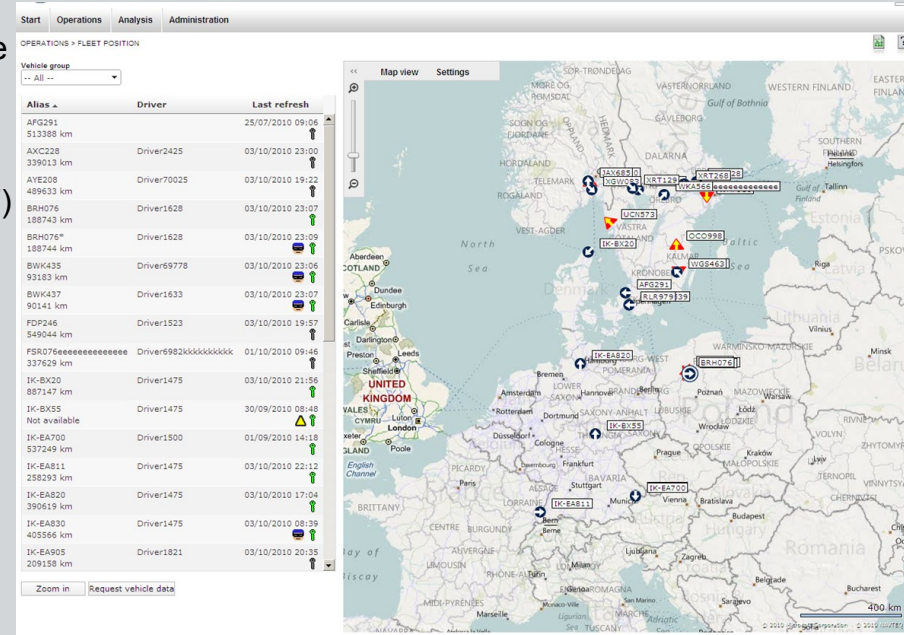
Driver, truck, load & localization status & instructions data transfer

Existing infrastructure and vehicles can be used more efficiently:

- Logistic chains
- Networks
- Information and communication technologies (ICT)

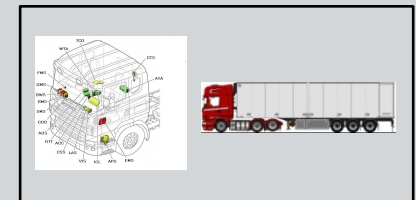
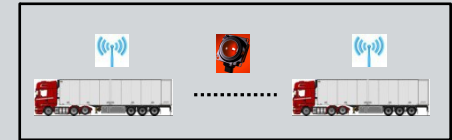
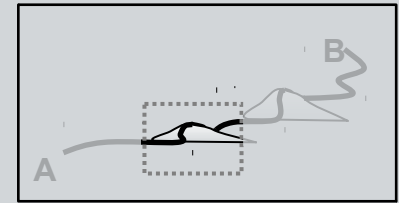
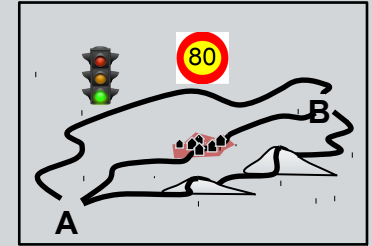
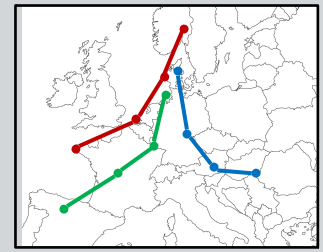
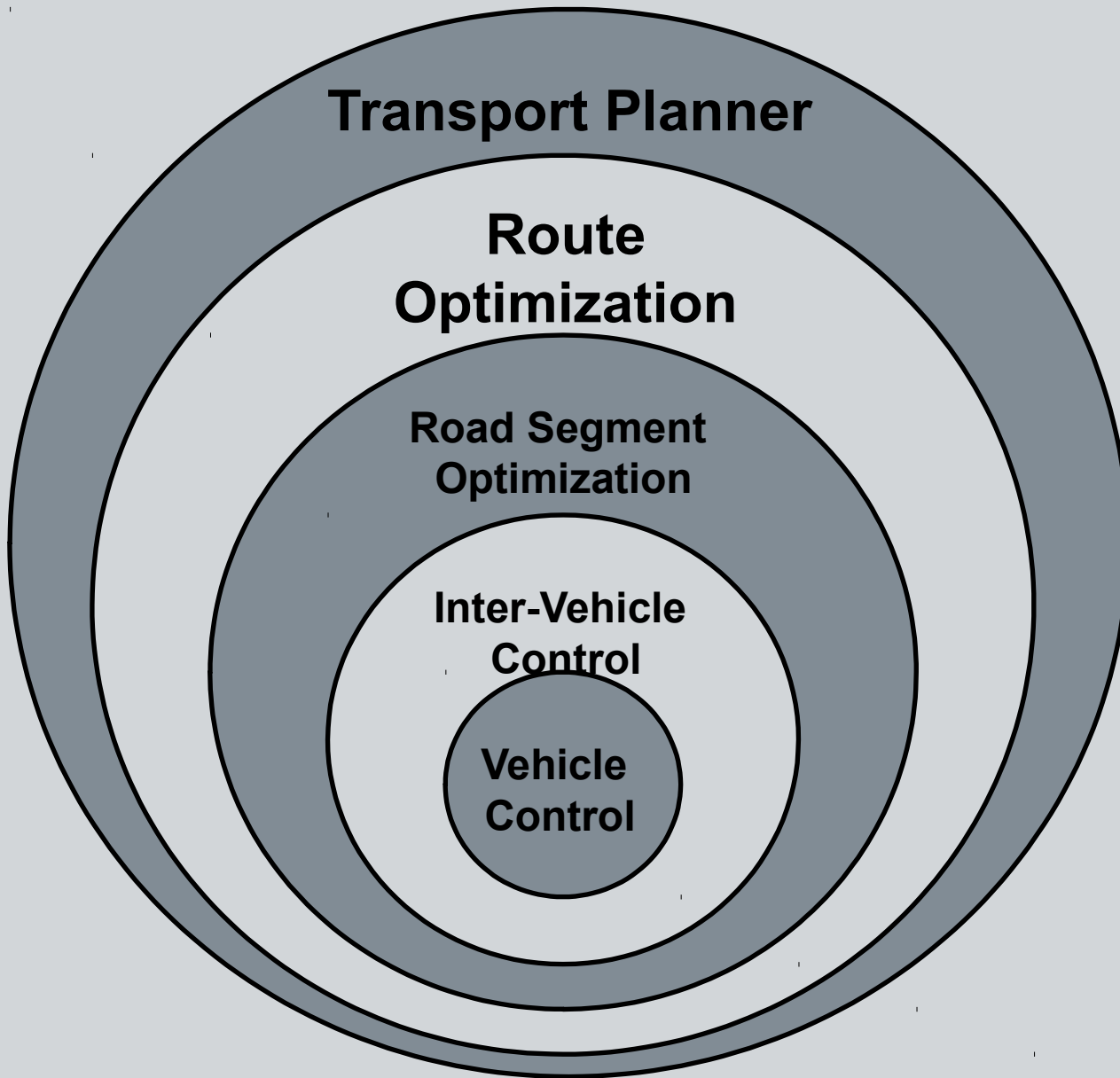
Solutions:

- Information management
- Data processing,
- Real time planning
- Data capture technology and
- Monitoring and evaluation



The main targets are to:

- Improve **load factors**
- Reduce **CO2 emissions**
- Remove **congestion**



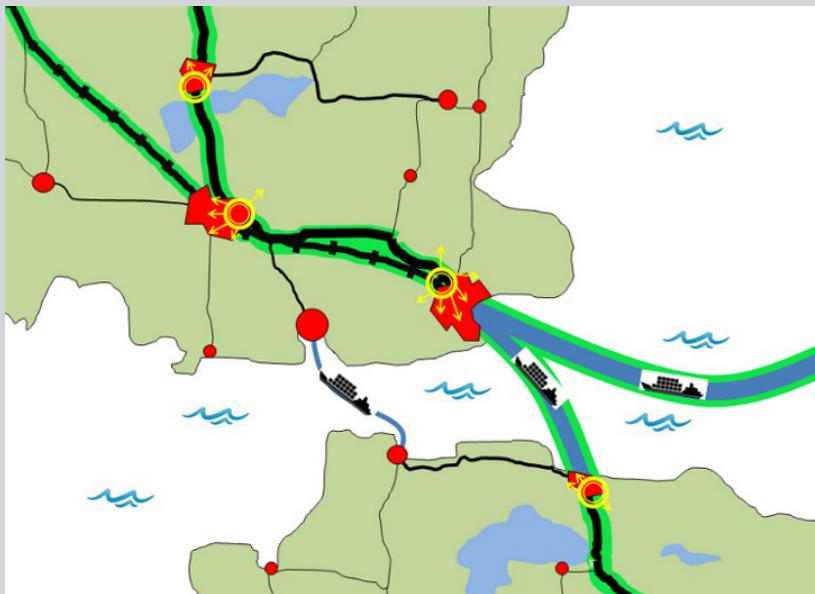
Inter-urban transport and co- and intermodal hubs

Efficient interfaces in the transport system - 'green hubs'.

- High operational performance
- Effective use of resources,
- Limited impact

Develop hubs – two dimensions

- the improvement of the hub itself – **Green Hubs**
- connecting the hubs with each other – **Green Corridors**



Challenges:

- Select Hubs and corridors for maximum benefits
- Tool to choose right transport mode



Urban transport and consolidation centers

Need for efficient urban transportation is still growing.
By 2020 75% of all Europeans will live in city regions

Heavy duty truck has and will have a significant part of
the city deliveries.

A new class of trucks will provide a solution for
megacity goods transport



Traffic and Infrastructure Integrated Truck

Fully integrated Trucks with the physical infrastructure for efficiency, safety and security



- Safe & efficient cooperative driving
- Dedicated corridors with adapted trucks & semi-automatic driving
- Energy/Information interface

Safe & efficient cooperative driving

Cooperative systems

Intelligent traffic management systems

Cooperative highly automated driving



Platoons

- Traffic efficiency
- Safety
- Fuel consumption
- CO2 reduction
- Capacity

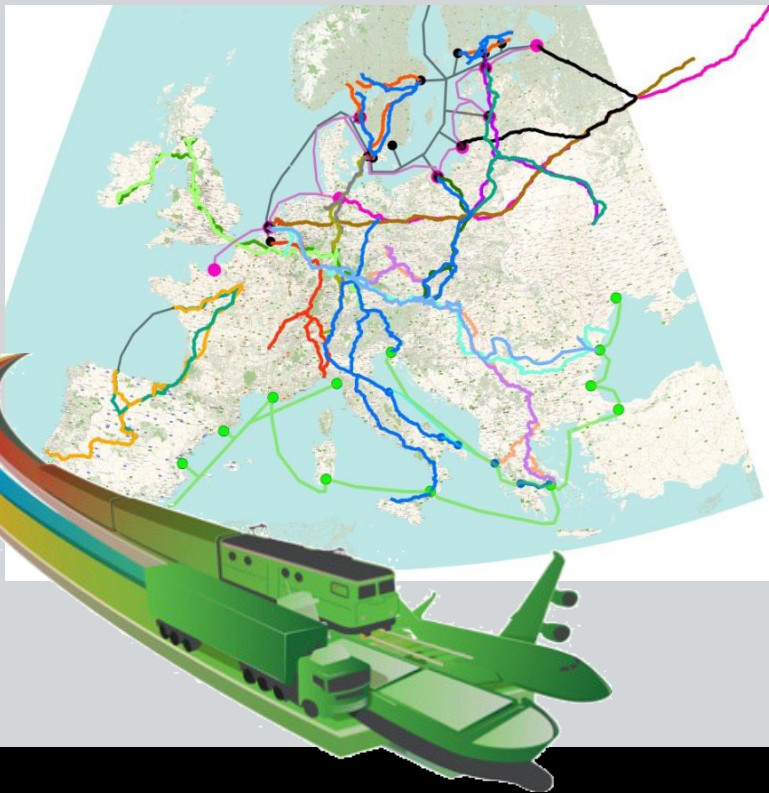
Trucks in Corridor

Enabling cost-efficient, reliable logistics solutions

Virtual corridors in existing infrastructure
Specific infrastructure step 2

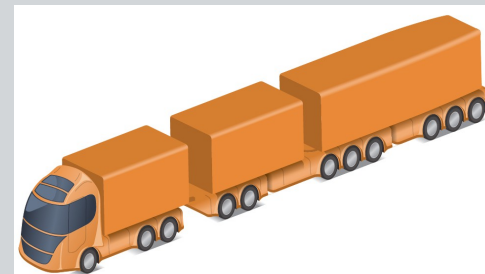
First corridors focus:

- Optimized load capacity
- Decreased congestions
- Energy reception technology



Key challenges:

- Interfaces and interoperability between different transport modes
- Logistics design; Goods flow optimization
- Interface and interoperability with local/urban network.
- Vehicle concepts
- Intelligent corridor access requirements
- Corridor specific services
- Infrastructural support measures



Energy/Information interface

In-vehicle drive train technologies advances with different concept in parallel

Energy supply and interfaces will be of key importance

RS (Electric Road Systems)

Promising technology for transfer of road transport to electric propulsion.

- Cost effectively
- Safe and Robust

ERS with energy transfer from the road surface to the vehicle

- Inductively
- Conductively



Summary: Integration of the truck in the transport system and the infrastructure

Improved logistic planning

Load and localization data
Hubs and route planning
Consolidation centers

Improved flow and energy use

Safe cooperative driving
Dedicated corridors
Interface between road and energy supply/information



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Thank You!



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