How ITS can contribute to urban freight efficiency

Innovation in Road Transport, 2.10.2009
Opportunities for Improving Efficiency

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Presentation overview

- Goods transport activities at ERTICO
- Quantifying the benefits
- Bases for successful pan-European deployment – Open platform
- Future developments
ERTICO - ITS Europe

Public-private, multi-sector partnership with over 100 Partners from:

- Industry
- Infrastructure Operators
- Public Authorities
- Users
- Industry associations
- Research institutes
- Technology centers

... to promote ITS in Europe.

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Goods transport activities at ERTICO

... towards increased efficiency of goods transport in Europe

ERTICO Partner Topic Group on Goods Transport is working on creating a roadmap for deploying goods related ITS services in Europe.
Core group comprises: IRU (convenor), Volvo, Logica, Satellic, Oracle, CRF (representing IVECO), CERTH…
Quantifying the benefits

FREILOT – a pilot on urban freight energy efficiency

During 1-year of operational driving measure and quantify the energy saving benefits from:

- Eco-driving support
- Adaptive acceleration/speed limiters
- Energy enhanced intersection control
- Dynamic management of delivery bays

Other measures of success:
- Sustainable after-pilot operation
- Involve additional stakeholders (cities/fleet operators)
Quantifying the benefits

To live up to the full potential of ITS cooperation between stakeholders is needed!
Bases for successful pan-European deployment

The CVIS project has developed an open reference platform for cooperative applications and services.

- Efficiency
- Safety
- Security
- Infotainment
- Etc...

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Bases for successful pan-European deployment

CVIS reference platform anno 2010
Future development

Goals

To develop a combination of cooperative systems and tools using V2V and V2I communication to help:

- drivers sustainably eliminate unnecessary fuel consumption,
- road operators manage traffic in the most energy efficient way
- fleet managers to provide incentives to drivers to save fuel, and most economical vehicle management
Future development

Wasted energy due to:
- Inefficient deceleration
- Wrong gear & engine speed
- Excessive speed, acceleration
- Poor anticipation
- Congestion
- Poorly synchronised signals
- Choice of inefficient route
- Lack of know-how, motivation

Energy consumption of “perfect eco-driver”

The future

Residual wasted energy

eCoMove benefit

ecoSmartDriving
ecoFreight & Logistics
ecoTrafficManagement + Control

Energy consumption of “perfect eco-driver”

Situation today

Time

Energy

10

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Future development

Factors
- inefficient route choice
- excess acceleration/speed
- wrong gear/speed choice
- inefficient deceleration
- improvement not sustained
- lack of motivation
- too many stops
- non-optimised signals
- unstable flow, speed too high
- congestion

Theoretical minimum fuel consumption for specific vehicle, driver and journey

Green Routing
- Optimum route from static & dynamic factors
- Map learns from experience

ecoSmart Driving Assistant
- Generate most efficient driving strategy
- Dynamic driving advice via HMI

Post Trip Driving Analysis
- Feedback from “Virtual Trainer”
- Long-term coaching strategy

Measures for Freight
- eco logistics planning
- Training and eco bonus scheme

Adaptive Balancing & Control
- Balanced priority control
- eco green wave
- eco route distribution

eco Motorway Management
- Speed and headway control
- Prioritised ramp metering
- eco merging assistant

ecoTraveller support
- Fuel consumption and emission prediction
- eco strategy model

eCoMove Solutions

eCoMove savings target = 20% of total energy use

Residual wasted energy
Theoretical minimum fuel consumption for specific vehicle, driver and journey

Situation today

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Thank you for your kind attention!

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