



# Cooperative systems: enabling beneficial freight partnerships

POLIS Conference 2011 Brussels

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# Cooperative systems: from research to deployment...

- Research projects

- CVIS *802.11p ISO CALM FAST*
- Safespot *Local Dynamic Map*



- Technology project

- SPITS *Road side and in-car platforms*



- Field Operational Test

- FREILOT *One year real life operation*



**... and new cooperative partnerships**



## Cooperative systems... approach and mind set

“Cooperative” = ...

- V2I and V2V: communication technology
- Definition: “working together”
- Stakeholders: mutual assistance in working toward a common goal
- Approach: new mind set for partnerships with positive business cases to all stakeholders





## FREILOT - energy efficient urban freight

- CO<sub>2</sub> and fuel efficiency services for urban freight
- FOT in four cities in Europe  
*Bilbao, Helmond, Krakow, Lyon*
- Road manager, freight transport and traffic industry
- Pilot period of one year,
- Targeted at continuing the services after the pilot





## Urban freight stakeholders' views - Cities

### ■ Mobility policies:

- *Improve road safety*: speed limits enforcement, safer traffic crossings, manage mix road usage, etc;
- *Reduction of harmful vehicle emissions*: “steer” heavy, high impact vehicles supporting avoid “stops” and “accelerations”, and provision of eco-route advise;
- *Improve traffic flow efficiency*: optimized traffic signal operation, real time information traffic conditions and route advise.



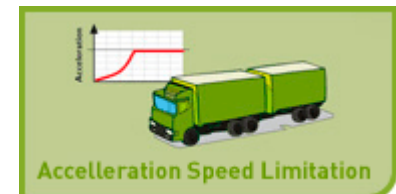
## Urban freight stakeholders' views - Freight

- Urban freight transport needs and issues:
  - *Access to cities info*: Many cities have many requirements on engine size, noise and pollution before allowing freight vehicles into a city area.
  - *Parking and deliveries services*: Bookable parking for commercial trucks in cities is an attractive offering for many operators.
  - *Access and city routes*: Not all city routes are adequate for freight vehicles: blocked by road works, events, etc.



## FREILOT – A win-win scheme

- City is responsible for traffic in a pilot location implement traffic management scheme giving priority to goods vehicles on certain roads and routes and/or during certain times of the day;
- Only heavy freight vehicles equipped with cooperative platform and speed limitation were eligible for priority at intersections;
- In addition, the pilot cities offer a service to the freight delivery vehicles for dynamic scheduling of loading/unloading spaces.

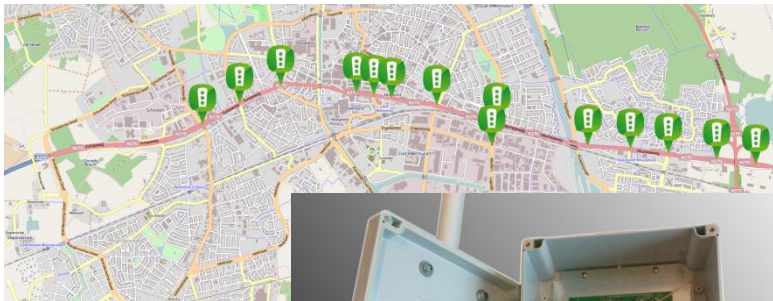




# FREILOT - energy efficient intersections



- Cooperative communication between trucks and the intersection traffic light controller



*FREILOT roadside, Helmond, the Netherlands*



*Windscreen mountable unit  
New Android based version rolled out soon*

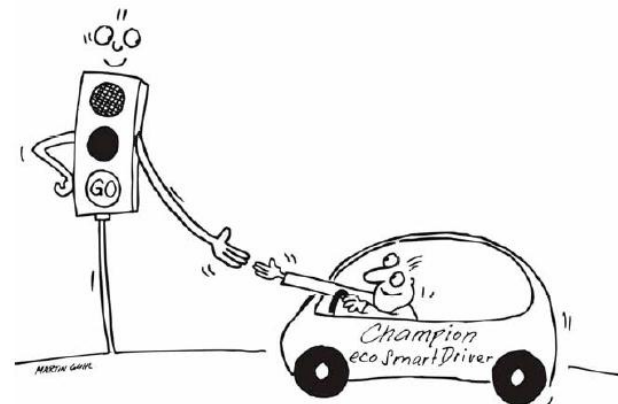




## FREILOT - energy efficient intersections



- Cooperative communication between trucks and the intersection traffic light controller
- Provide priority for scheme member trucks only
- Speed advice for the driver to pass the intersection without stopping

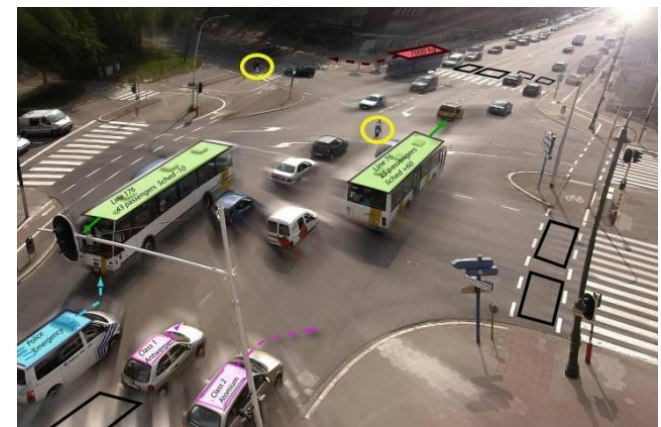




## FREILOT - energy efficient intersections



- Cooperative communication between trucks and the intersection traffic light controller
- Provide priority for scheme member trucks only
- Speed advice for the driver to pass the intersection without stopping
- Time-to-green or time-to-red
- Increased safety at intersections

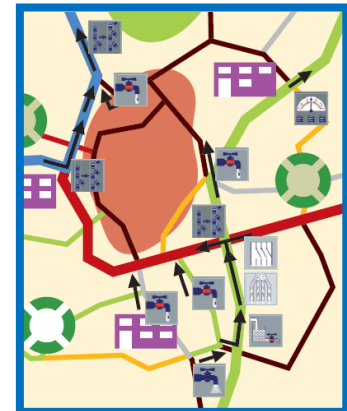




## FREILOT - energy efficient intersections



- Cooperative negotiation process to define a “package” of measures which benefit all stakeholders:
  - **Cities** get the possibility to “steer” goods traffic towards preferred roads or preferred times of the day (e.g. 5-7 in the morning), through an incentive-scheme.
  - **Freight vehicles**, reliable and shorter travel times through the city for efficient resource planning





# FREILOT – Shared benefits



Energy efficient intersections	City benefits	Freight transport benefits
<i>Less stops of heavy freight vehicle at intersections (5 -15% )</i>	<ul style="list-style-type: none"> <li>Reduction of heavy vehicle emissions in urban area</li> </ul>	<ul style="list-style-type: none"> <li>Up to 20% fuel saving for heavy vehicles = €</li> </ul>
<i>Efficient Travel time for heavy freight vehicles</i>	<ul style="list-style-type: none"> <li>Reduction of heavy vehicles presence in urban areas and traffic</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of travel time = €</li> <li>Reliable travel and arrival time = no extra hours = €</li> </ul>
<i>Extra results</i>	<ul style="list-style-type: none"> <li>Share cooperative platform with other priority vehicles:               <ul style="list-style-type: none"> <li>Emergency services</li> <li>Public transport</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Increased social responsibility and imago</li> </ul>



## Summary

- From *Cooperative Systems* to **Cooperative Approach**
- Enabler of Win - Win process with shared responsibilities and benefits for all stakeholders
- Attractive also to new partners: Emergency services and Public transport
- Requires active participation from everyone, so...

**Get involved!**



Thank you for your attention.

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