

**EasyWay**



Annual Forum 2010



**Shortcut to the future.**

Lisbon • November 16<sup>th</sup>-18<sup>th</sup>



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**ITS freight platform in  
suburban areas connecting  
motorway to local road  
networks**

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## Objectives

- Analysing interconnections between motorway and local road networks for delivering goods in urban area
- Studying the role of an ITS freight platform in suburban area providing facilities and services to the road hauliers
- Identifying the guidelines for a future ITS freight platform implementation



## Scope

- Suburban area of a medium/big city, easily accessible by the motorway network
- Where restriction measures to the city access for High Goods Vehicles exist



# Methodology

Topic	Methodology
<b>City logistics concept: problems and challenges</b>	Analysis of the major trends for managing the access of HGV in the city and for optimizing the delivery of goods at national and international level
<b>Infomobility services</b>	Research of the main current Infomobility services provided for road travelers
<b>Facilities and services for road hauliers</b>	International review of the most helpful ITS for road haulage by taking into account the crucial role of the freight platform
<b>Transport model simulation</b>	Selected case study: hypothesis of a set of policies for managing traffic flows on the A4 (Torino – Milano) motorway in the suburban area of Milan



## Methodology – city logistics

### City logistics concept: problems and challenges

Problems	Challenges
Road congestion	Promoting research studies and project to improve efficiency of the distribution system
Noise pollution	Improving urban transport efficiency
Air pollution	Implementing political-administrative strategic actions
Road accidents	Adopting technological and innovative solutions for the management of goods transport and delivery
Quality of life	Establishing Urban Distribution Centres



## **Methodology – city logistics**

### **Action strategies**

- Restriction measures affecting infrastructures/delivery time/vehicle
- Economic measures such as road pricing, parking price schemes depending on the type of vehicle/day time
- Commercial measures promoting the purchase of less pollutant vehicles
- Operational measures aiming to achieve a more efficient freight distribution model by creating Urban Distribution Centres

**All actions are supported  
by the technology solutions**

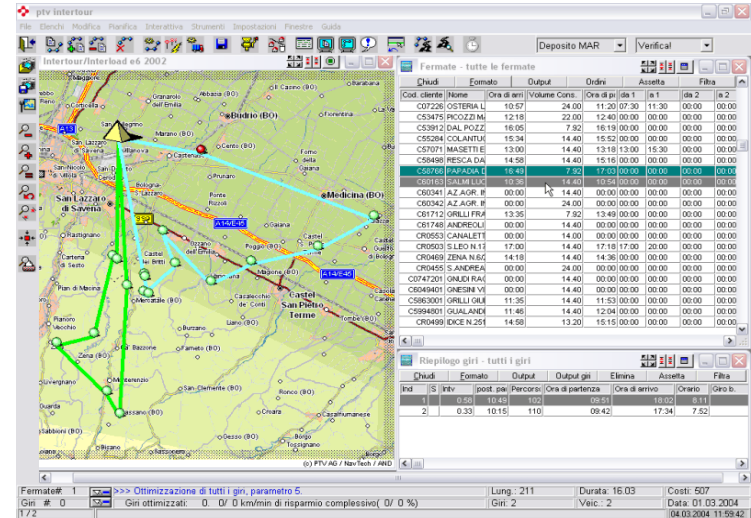
# Methodology – city logistics

## Technology solutions



**ANPR (Automatic Number Plate Recognition)**

**Application: Road pricing London, ECOPASS Milano - ITALY**



**PTV Intertour software Optimising vehicle trips and deliveries**

It is an interactive trip planning system which supports logistics managers, fleet operators or planners in their day-to-day business. It enables to reduce delivery time with the optimisation of vehicles (avoiding empty running) and routes.

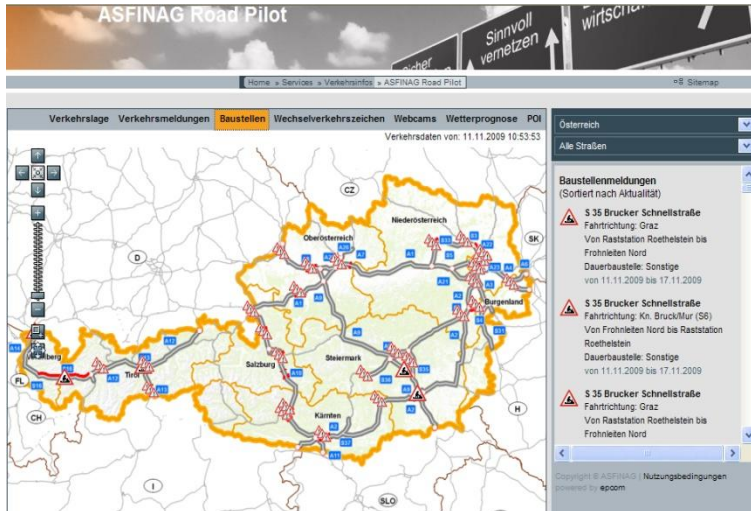
**Application: both for private haulage companies and local authority**

# Methodology – Infomobility services

## Infomobility services

- **Variable message signs** - placed alongside the main motorway network provide information about travel time, speed variations, accidents and congestion situations
- **Via radio traffic information** - update travellers periodically about the traffic situation and weather conditions on the motorway network
- **Messaging on mobile devices** - through a subscription service, users can receive updated information on major national road networks
- **Web information** - informative portal containing useful information for travellers such as stop area locations, location of road works, weather forecasts, view of the monitoring webcams placed alongside the motorways, etc.

## Methodology – Infomobility services



### Road Pilot webportal ASFINAG (AT)

#### Some provided information :

- Traffic flows and congested stretches of road
- Road work
- Weather forecasts
- Points Of Interest (POI)

### Traffic England Highway Agency (UK)

#### Some provided information:

- Average travel speed
- Congested stretches of road, accidents, bottlenecks and forecast about their resolving time
- Future road works or temporary deviations





# Methodology – Infomobility services

## Facilities and services for road hauliers

Service or Facility	Description
<b>Parking area</b>	Secure European Truck Parking Operation Services ( <b>SETPOS</b> ) 2007-2009 EU project meet the growing need of security for drivers who transport high-value goods, frequently subject to theft and robbery
<b>Devices and on-board technologies</b>	All those technologies already available on the automotive market that can help drivers in making safer and more comfortable their travel
<b>Multimedia platforms</b>	Informative web-based platforms that contain some helpful information and divulgate policies and rules to streamline the entrance of the HGV in the city
<b>V2V and V2I communication systems</b>	New telematic data transmission systems whose aim is to allow communication between vehicles and roadside infrastructures or between vehicles

## Methodology – Infomobility services

### Truck parking areas SETPOS Project

#### Project Objectives

- Define a common standard for truck parking areas, guidelines for parking areas operators or for those seeking to enter the business
- Building a number of secure monitored parking in the border areas between two states
- Building technological platform common to all Member States to provide information and to book in advance a place in these restricted areas

Some provided services by **Truckinform portal**:

- More than 2500 truck parking area in 40 states continually updated;
- Possibility to reserve a lot in a parking area;
- Possibility to know which are the additional provided services from each parking

### TRUCKinform

the European truck parking information portal

[LOGIN](#) | [REGISTER](#)

Registration is FREE, and you do not even have to register — [SO WHY REGISTER](#)

#### Quick-find truck parking

Enter

- a country and city name
- or a country, highway number and direction

[QUICK PARKING SEARCH](#)



#### ▶ CALLING DRIVERS AND DISPATCHERS

It is really easy to use this website...

To simply find parking information, just

#### ▶ CALLING TRUCK PARK AREA OPERATORS

- Show your facilities comprehensively to Europe's estimated 4 million long distance truck drivers and half a million dispatchers



## Methodology – Infomobility services

### Devices and on-board technologies – some examples

Technology	Goal and application
<p><b>Automatic Vehicle Localization (AVL)</b></p>	<p>Allow truck driver receiving real-time information provided by traffic control centres via roadside motorway infrastructures</p>
<p><b>Automatic Vehicle Monitoring (AVM)</b></p>	
<p><b>On-board computers equipped with GPS and Wireless systems</b></p>	
<p><b>Navigation Systems specific for trucks (e.g. “Map&amp;Guide Truck navigator”)</b></p>	<p>It contains database of road restrictions for HGV (e.g. high of bridges, maximum weight admitted, mandatory routes for dangerous goods). The driver can choose the route by avoiding residential areas, pedestrian zones, city centre. The driver is warned about possible danger of the selected route (e.g. narrow turns, steeper roads, damaged road pavement, etc.)</p>



## Methodology – Infomobility services

### Multimedia platforms – some examples

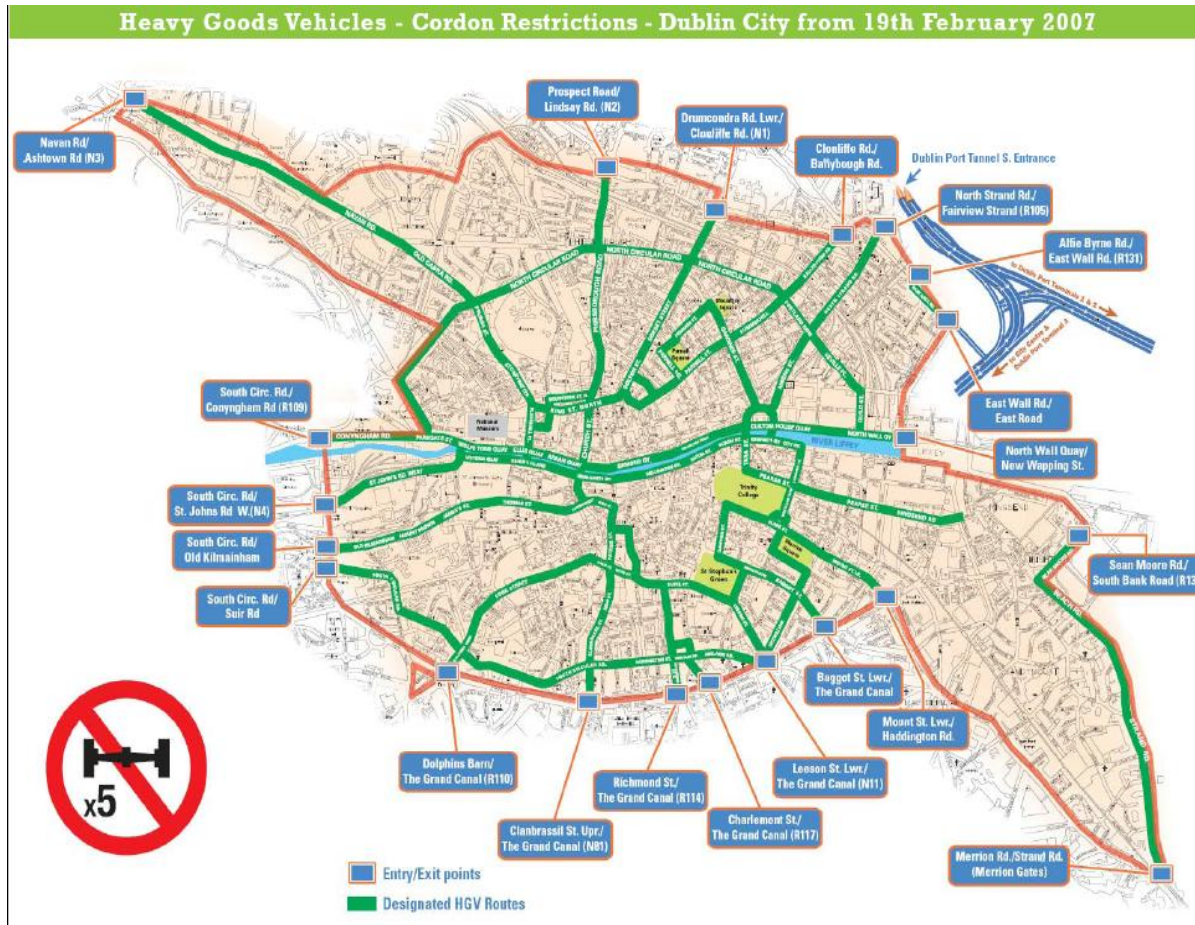


### London Lorry Control Scheme

Hauliers can compute and then submit the route throughout the city centre to the Local Authority for the permission .

## Methodology – Infomobility services

### Multimedia platforms – some examples

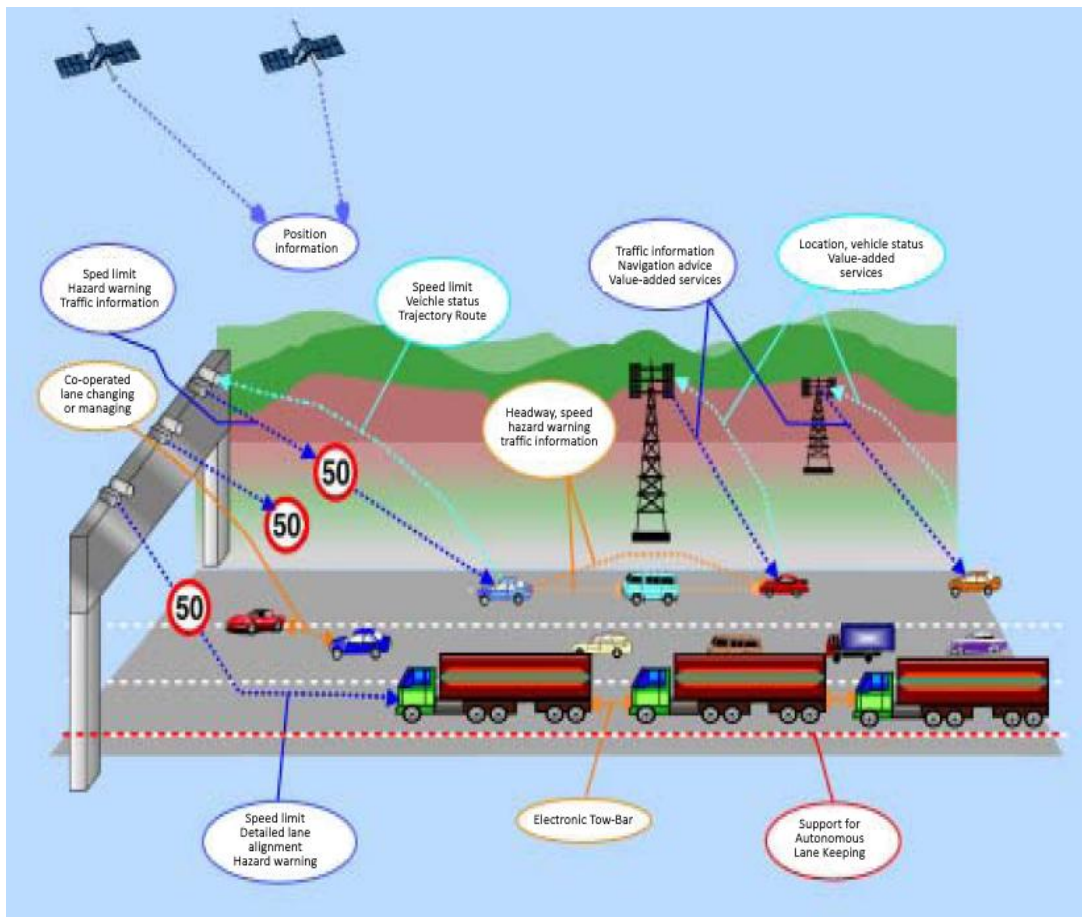


### HGV Management strategy - Dublin

- Day time restrictions for the entrance of HGV.
- Hauliers can ask through the portal special permissions.
- There are designated HGV routes within the cordon area

## Methodology – Infomobility services

### V2V and V2I communication systems



### COOPERS project

(Cooperative Network for Intelligent Road Safety)

- Real-time communication can help to manage congested situation in a **safer** and **more efficient** way
- V2V and V2I technologies aim to create a permanent wireless communication among roadside infrastructures and vehicles or between vehicles in order to exchange data related to the road conditions (e.g. speed limits, accidents, deviations, etc...)



## Methodology

### Transport model simulation

#### Objectives



Assessment of the ITS benefits in reducing congestion and improving transport efficiency

#### Scope



Italian motorway A4 (Torino – Milano)  
Micro – simulation of a stretch of motorway between Arluno and Pero toll booths. Simulations have been conducted both in peak/off-peak hours

#### Scenarios



5 different policies for managing traffic flows on the motorway have been simulated.

1. Decrease speed limit for LGV and HGV
2. Decrease speed limits both for cars and HGV
3. Overtaking prohibited for HGV (direction Milano)
4. Locate a freight platform (300 trucks) near the motorway
5. Locate a freight platform(300) closest to the city



# Methodology

## Transport model simulation

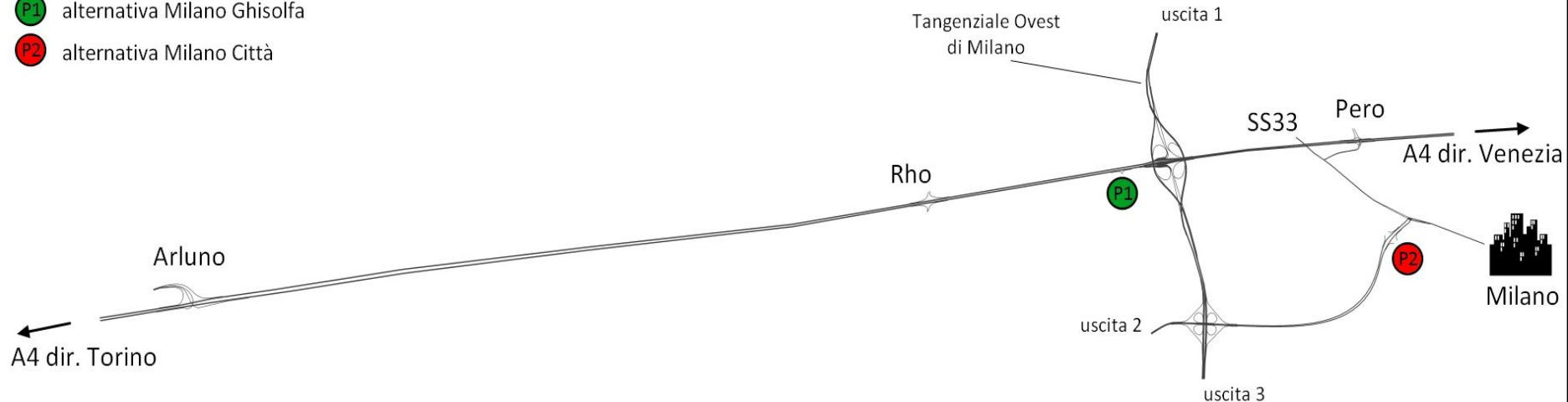
### Results

Scenario n.4 (freight platform P1) produced the best results in terms of:

- decrease of pollutant emissions (4-5%)
- Increase of average speed travel

Piattaforma merci:

-  alternativa Milano Ghisolfa
-  alternativa Milano Città





## Results and proposed guidelines

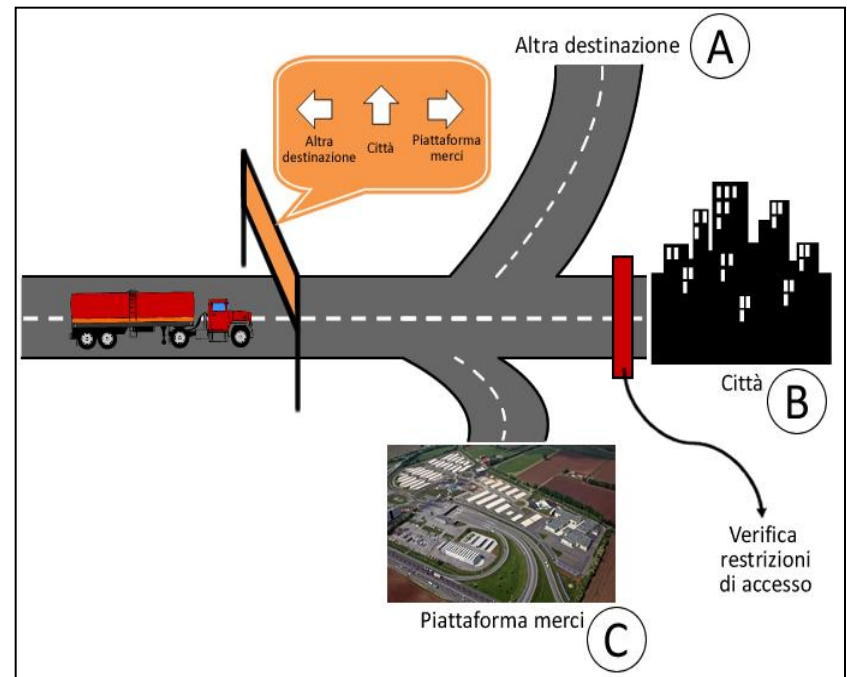
- **The functions of the platform** – The potential functions of the platform, by taking into consideration its strategic role between motorway network and urban road network and its functional role between transport operators and local authorities are the following:
  1. supply a set of services to the hauliers in general terms;
  2. give to the hauliers added value for logistics services;
  3. have role of “substitute” of the Local Authority in relation to the hauliers.
  
- **The interactions between the road hauliers and the platform operator** – Approaching the freight platform the truck driver will do different choices in relation to its final destination. In particular the following options have been considered:
  - A. continue towards other destination
  - B. enter direct the city centre
  - C. enter the suburban platform



## Guidelines for future implementations

**A. Continue toward other destination** – The haulier, who is not direct to the city centre, may decide to use alike the platform before to continue its travel towards the final destination. The role of the platform in this case is very streamlined and is comparable to a service or parking area. The platform may be equipped with services for the trucks and their drivers as well as with a multimedia room in which the haulier may find useful information for its remaining travel.

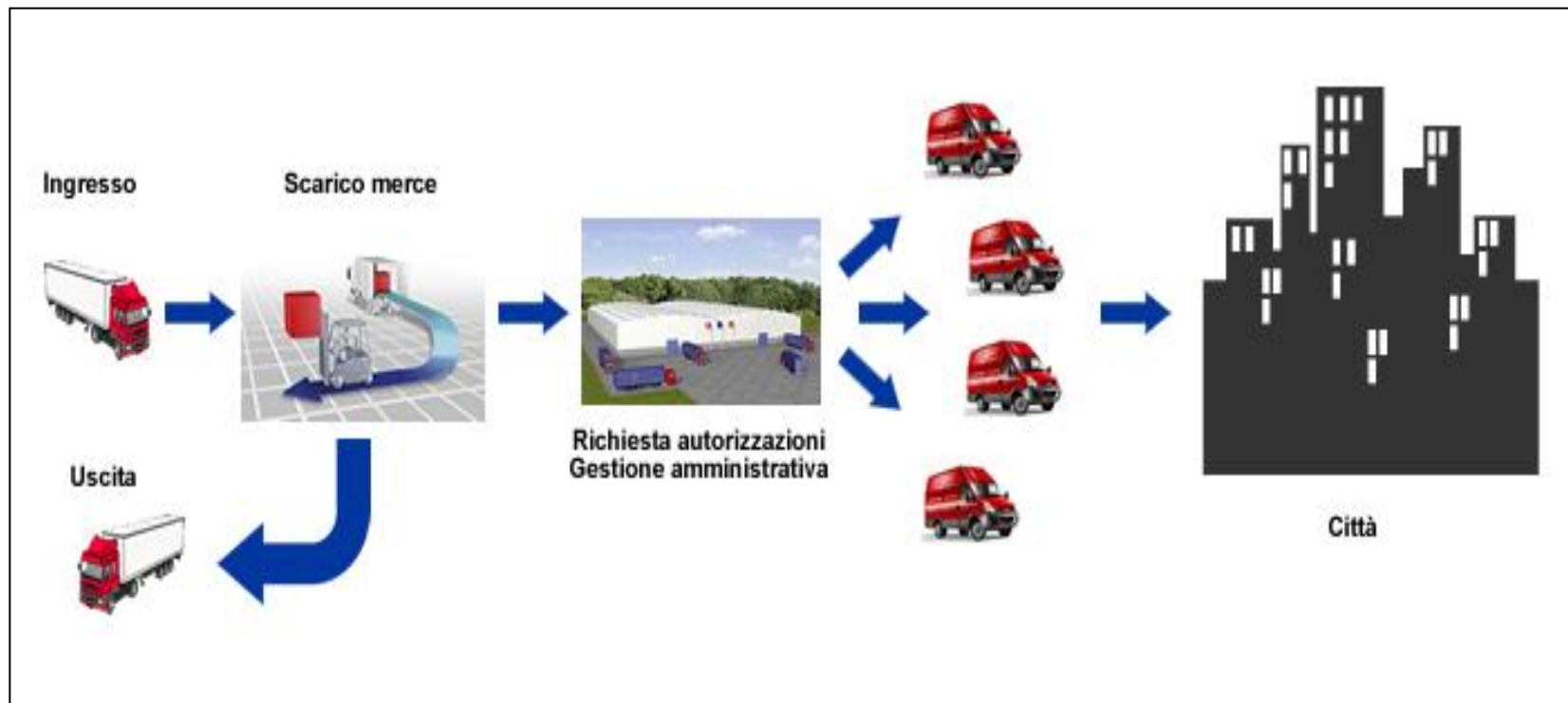
**B. Enter direct the city centre** The haulier has two choices: direct access after verifying the existing access restrictions or use of the platform as a parking area and to have some information about access restrictions. Possible role by the platform manager as “substitute” of the Local Authority.





## Guidelines for future implementations

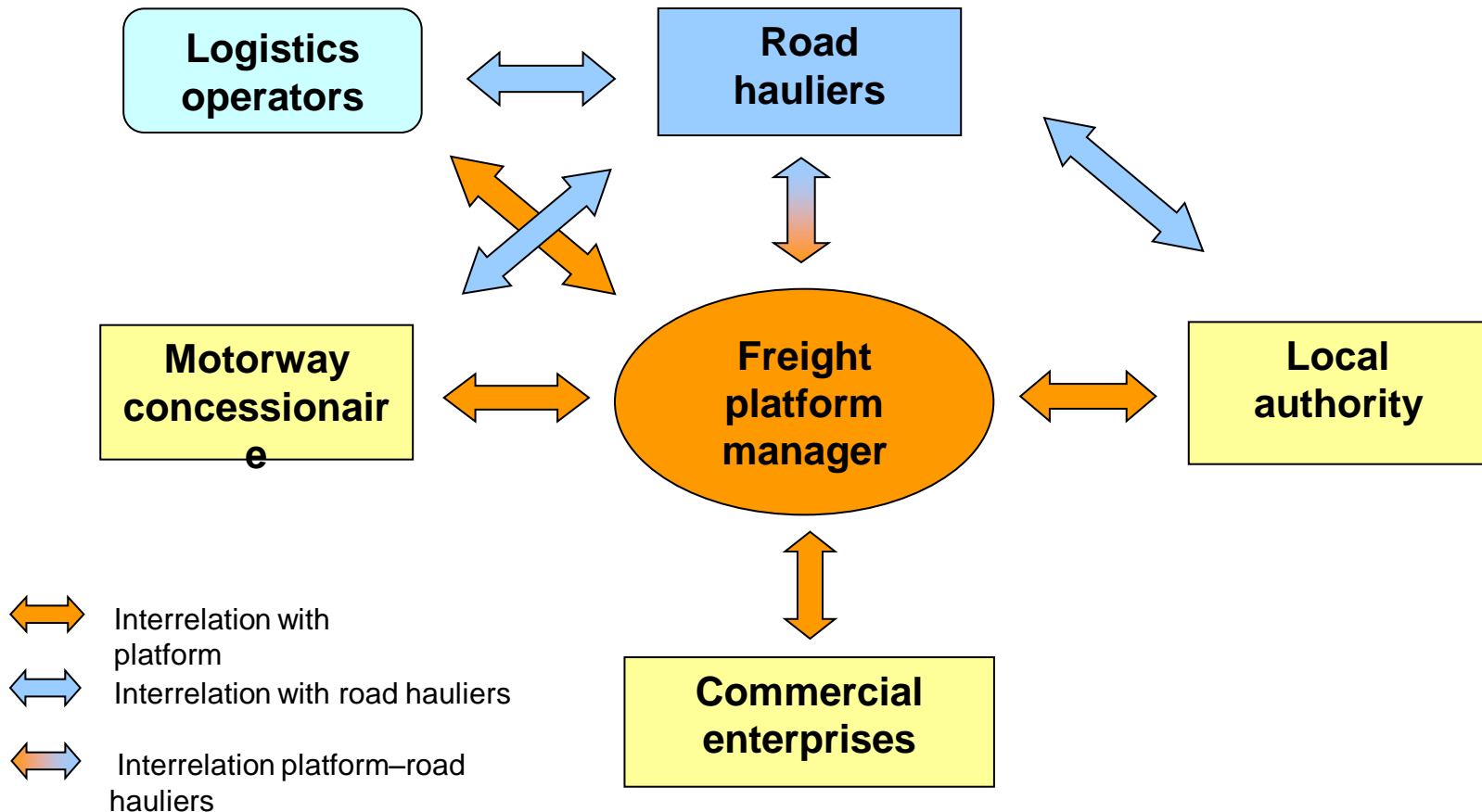
**C. Enter the suburban platform** – The haulier who has the final destination the city centre could decide to use the platform not only as a parking area but also as urban distribution centre, where leaving the goods for stock and distribution by low emission vans. Besides information and technological services, the platform could offer to the operators relevant logistics services.





## Guidelines for future implementations

- **Stakeholders and their roles** – Great relevance must be reserved to the interrelations among all the subjects involved focusing on their information exchange.





## Conclusions

### The key role of the ITS freight platform

- 1. Strategic** for tackling city logistics crucial issues and coordinating the stakeholders involved in the delivery process
- 2. Administrative** as “substitute” of the local authority in authorizing routes and permissions for HGV or dangerous goods in urban area
- 3. Innovative** since it provides technological solutions that can have high added value for logistics services
- 4. Crucial** for making easier the connections as well as data exchange between motorway networks and local road networks

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***Thank for your attention***