Province of Livorno

ITS to promote a change in travel behaviour

MOBILITY MANAGEMENT PLATFORM

Individual mobility monitoring system

5 - Bike-Sharing

4 - Car-Sharing

6 - *Private car*

3 - Electric Mobility

2 - Cycling

1 - Public Transport

Green behaviours rewarding system

No-Green behaviours penalty

Mobility credits market

GreenCard

Transport public mobility monitoring system
The advantages

1 – Automatic detection of **getting on and off**

2 – **Origins and destinations of travel monitoring** (both for subscribers than single

   tickets)

3 – **Decreased tariff evasion** (each RFID read in the control unit will give a green signal if

   correct, red if there is no credit or subscription and no signal without device).

4 – Ability to make paper card on board without disturbing driver (increased safety) and

   greater availability of rest

5 – Chance to recharge their **GreenCard** on board, at retail or via mobile App/SMS

6 – No need to validate the ticket or pass it (contactless systems) and, therefore, easier to

   use (cases of full bus or people with hands bags or babies in their arms or others)

7 – Integration with other ticketing/payment systems

Transport public mobility monitoring system
A self-financing system

Example of **Pisa urban transport** service:

Annual Revenues from travel tickets = 4.500.000 €

Mean percentage of tariff evasion = 10%

Yearly possible monetary recovery = 450.000 €

Number of vehicles used in the urban transport service = 50

Expenditure (approximation in excess) for vehicle preparation = 10.000 €

Total expenditure for the whole fleet = 500.000€

This means that the system is completely self-financing!!

Private car and cycling mobility monitoring system

Innovative individual **gate detection system** both for cars, motocycles and bycicles

<u>Description:</u>

- For cars or motocycles a simple passive sensor on the windshield glass

- For a bikes a monitoring system anti-burglary has been developed

- It allows urban zoning/streets mobility analysis and management (credits counting

  for each travel between O/D zones or for each transit in an 'high cost' street)

<u>Advantages:</u>

- Bycicle anti-theft system connected with individual Mobile App application tracing

- Collection of Origin/Destination travels to use for following transport planning

Car-sharing, bike-sharing, parking and electric mobility payment system

Introduce payment systems based on the **Green****Card**

Options:

- For existing systems (integration/to verify);

- For new car/bike-sharing system (implementation)

Advantages:

- It allows the use and automatic payment for park&ride solution;

- Automatic collection of parking and daily use data to rating planning and others;

- No need for coins or tickets (problem to buy from urban activity in non-open hours)

- Chance to recharge the **Green****Card** device at retail or via mobile App/SMS

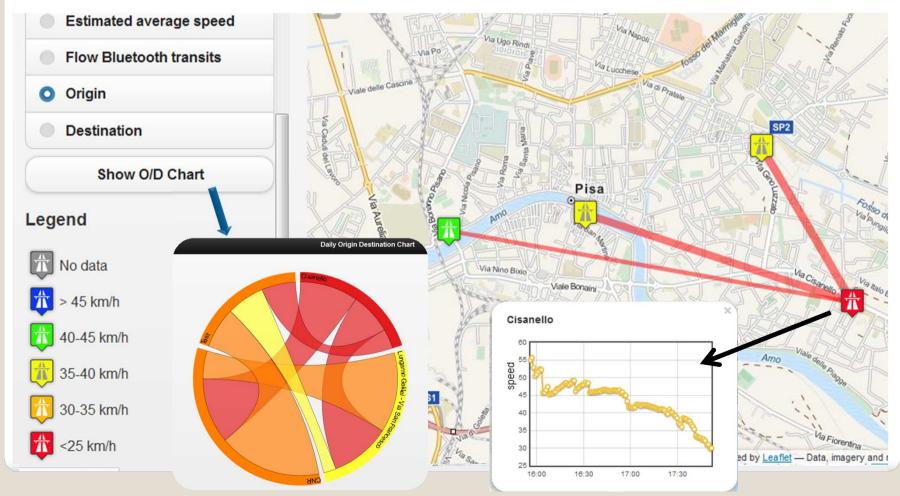- Possibility to show free 'place' by mobile App → low travel 'to search for'

Origin-Destination and real-time congestion monitoring system

A flexible non-invasive system to control real-time traffic state and to investigate Origin-Destination moviments (both vehicles than pedestrians) has been developed and is in protytiping phase.

Green behaviour rewarding/credit system

Method/Complexity	Management	ITS framework
Rewarding system by means of ITS	Simple	Complex
Rewarding system by means of car GPS (linked to insurance)	Complex	Simple
Credit Mobility Market	Complex	Complex

3,6 million inhabitants

GreenCard

Passive Rfid tag where it can be stored ISEE index

Implement welfare policies

16.765 city-users
(Pisa has 91.000 inhabitants) = 18,5%

Green behaviour rewarding system
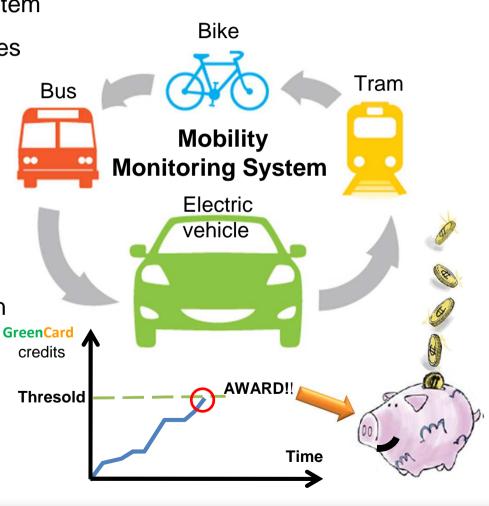
Introduce a first simple rewarding system

for user of sustainable transport modes

- More facility to use in respect to

  credit mobility market;

- Simple monitoring of modal split

  dynamics;

- Rewards are automatically loaded in

  the **GreenCard**

- Politically more 'usable'

Bus   Bike   Tram

**Mobility
Monitoring System**

Electric
vehicle

GreenCard credits
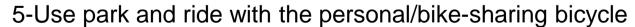
Thresold   AWARD!!

Time

The points awarding model

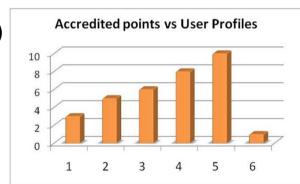In the city there are different possibility to access to green mobility mode.

The points awarding model system needs to encourage more people that has a no green transport mode possibility (bringing in the city pollution and congestion).

Different user profiles related to sustainable travel modes:

1-Use of the only public transport means (bus, tram)

2-Use of the only personal bicycle

3-Use of the only bike-sharing system

4-Use park and ride with the public transport means

5-Use park and ride with the personal/bike-sharing bicycle

6-Use of particular parking lots or along the road (linked to political planning choices)

The project of Pisa

Pisa will be the first experimental application at the urban level

ciclOpi
Pisa pedala in grande

Rewarding system with
-bike sharing
-private cycling
-bus
-park & ride

Legend
- Blue Line
- Green Line
- Red Line
- P Parking
- People Mover

Park Pietrasantina
Park Paparelli
Park Pratale
Park Morrona
Park People Mover
Park Hospital

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Thank you for your attention

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