



ADVANCED LOGISTICS  
PLATFORM WITH  
ROAD PRICING AND  
ACCESS CRITERIA TO  
IMPROVE URBAN  
ENVIRONMENT AND  
MOBILITY OF GOODS



With the contribution of the  
LIFE financial instrument  
of the European Commission

Lucca, 12.10.2018  
**1st Annual Workshop**

# INNOVATION IN URBAN MOBILITY OF GOODS: REWARDING POLICIES AND MEASURES

## **On rewarding policies for city logistics in small and medium historic towns**



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*MemEx Srl*

# LIFE ASPIRE in Lucca



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Started date: 1<sup>st</sup> October 2017

Duration: 3 years

Leader: Municipality of Lucca

Technical Coordinator: MemEx

Consortium: 6 partners from 3 different  
EU Countries (*Italy, Croatia and Sweden*)

**Demo Site: Lucca , Italy**

Main goal: Realization of a set of ICT measures – regulation in order to achieve higher standards of air quality in urban freight distribution process



**“credit based”** access policy with  
**dynamic awarding criteria** related to  
the **last mile** goods delivery

# Lucca access regulation

- The access, transit and parking in the historic centre is based on permits

→ special rules for each type of permit and target user groups

- **Permits:**

- Associated to the user category and Vehicle type (EURO 1,...,5, EV)
- - Allows different timing windows

Type of goods	Permit area(s)	Time and other limitations
Perishable goods	LTZ, A Area, B Area	7:00-10:30, 15:00-16:30 and 18:30-20:00
Medicines & drugs	LTZ	Any time of the day (max. 20 mins parking)
	A Area, B Area	7:00-10:00, 12:00-13:00, 16:00-17:00, 18:30-19:30 (max. 20 mins parking)
Fuels	LTZ	Any time of the day
	A Area, B Area	8:30-13:00, 14:30-15:30
Sales representatives (yearly duration permit)	LTZ	Any time of the day. Parking allowed only in dedicated yellow marked lots
	A Area, B Area	8:00-14:00, 14:30-15:30, 19:30-20:00
Tobacco and state monopoly goods (yearly duration permit)	LTZ	Any time of the day. Parking allowed only in dedicated yellow marked lots
	A Area, B Area	8:00-12:00



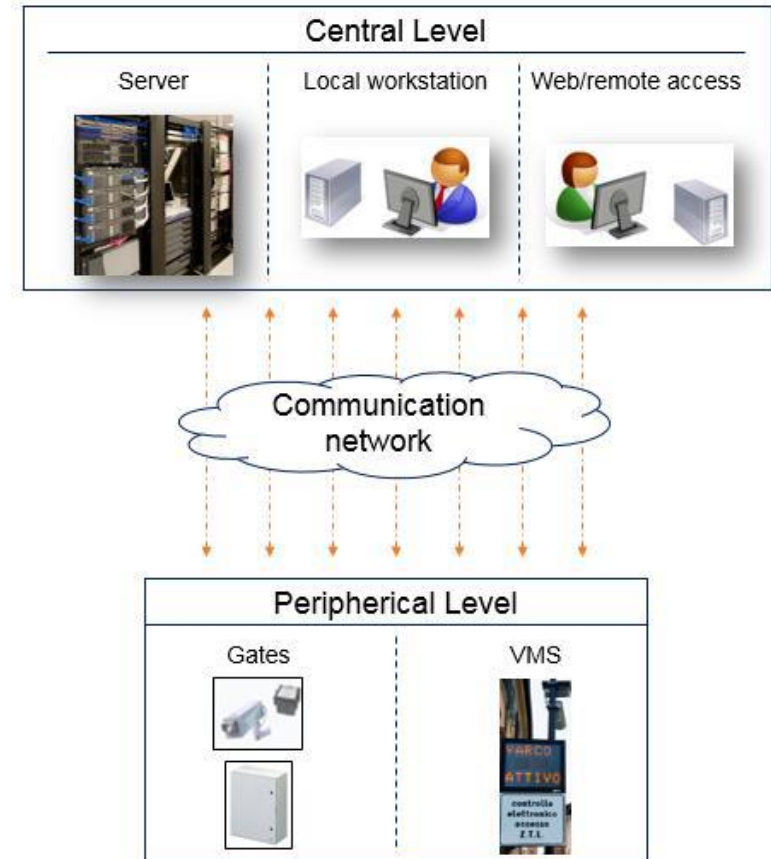
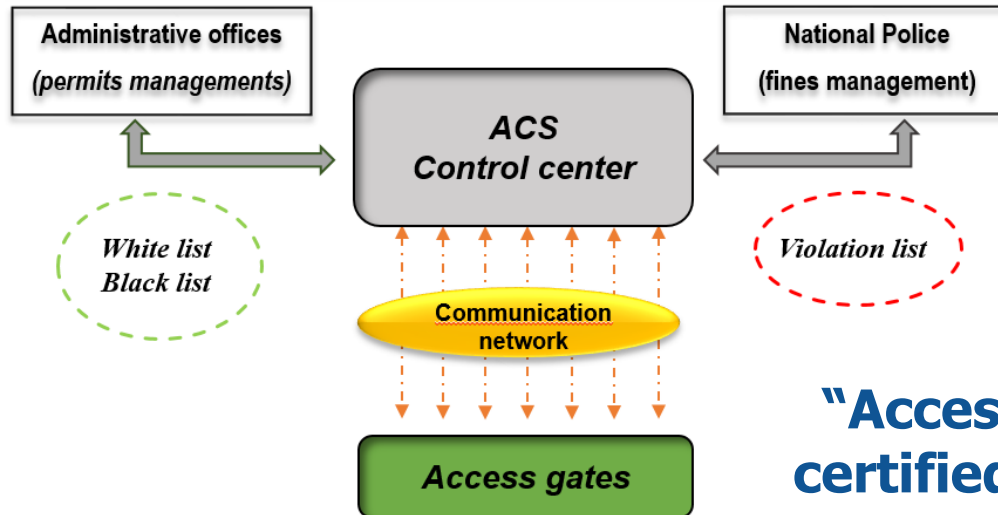
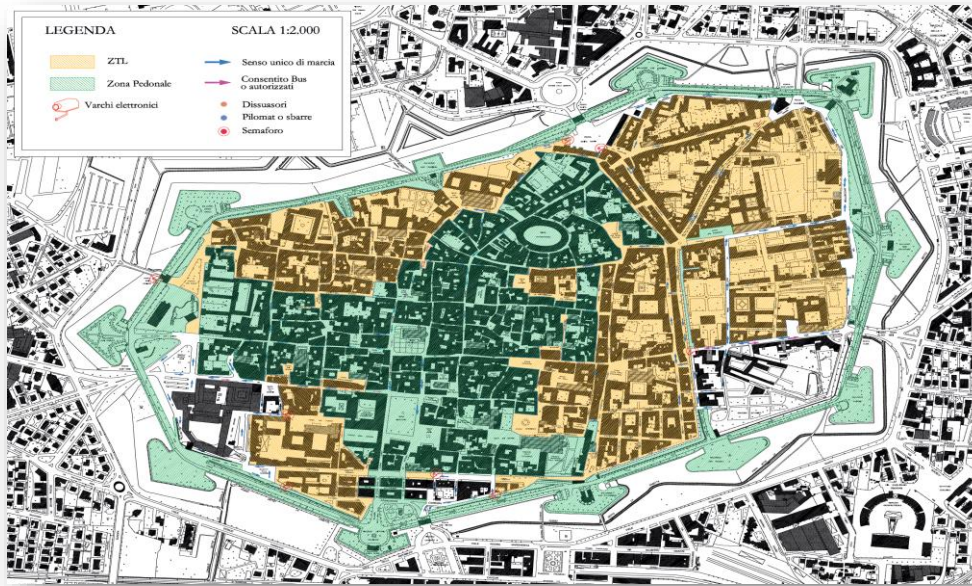
## Special focus on freight delivery rules



Access Control System  
as enforcement tool...



# Access Control System



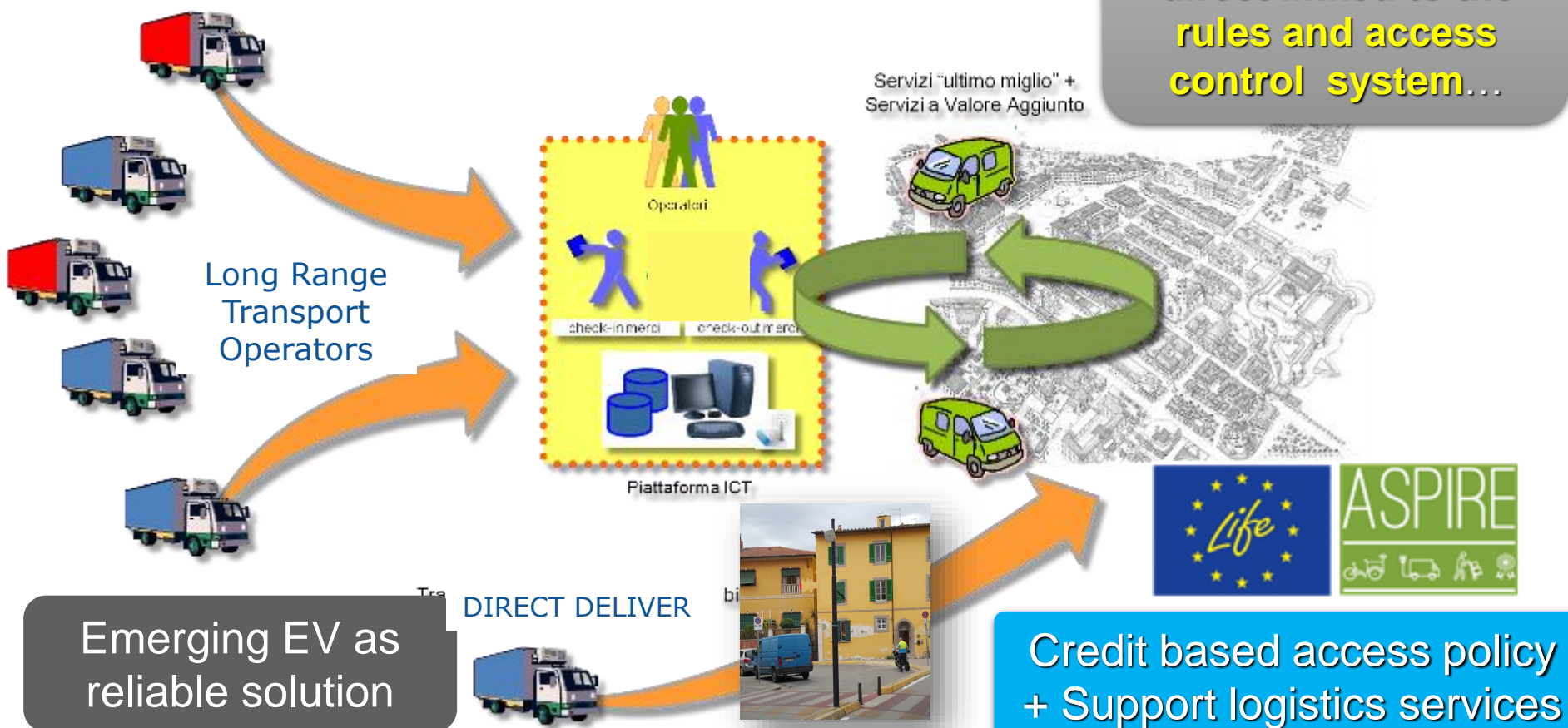
**“Access Control System” must be certified at Ministry level for fining**

# The UCC «CONCEPT»

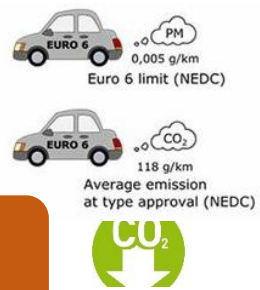
Municipality Initiative:  
Top-Down approach

Last Mile and  
Cross Docking Services

**UCC productivity is  
direct linked to the  
rules and access  
control system...**



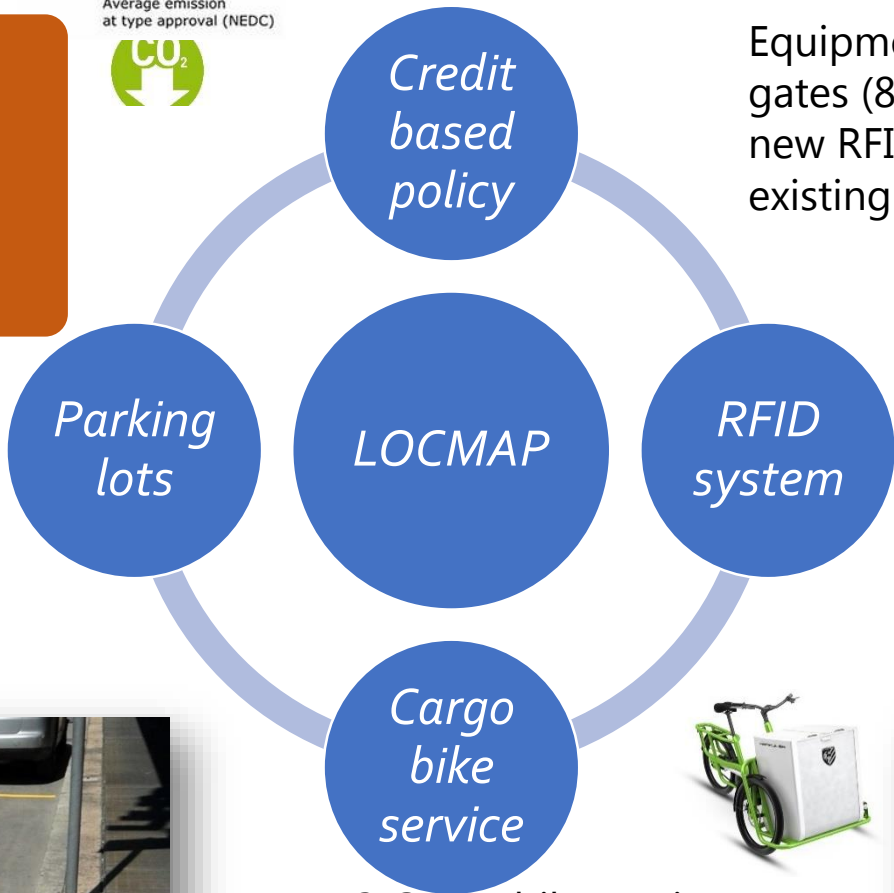
# LIFE ASPIRE Credit Platform and support services



## Urban freight distribution management

**INES Cloud Platform**  
for *integration and management of different eco-logistics services*

N. 34 L/U parking lots, equipped sensors



Equipment of a total of 22 LTZ gates (8 entry, 14 exit gate) with new RFID devices, besides the existing OCR gate system

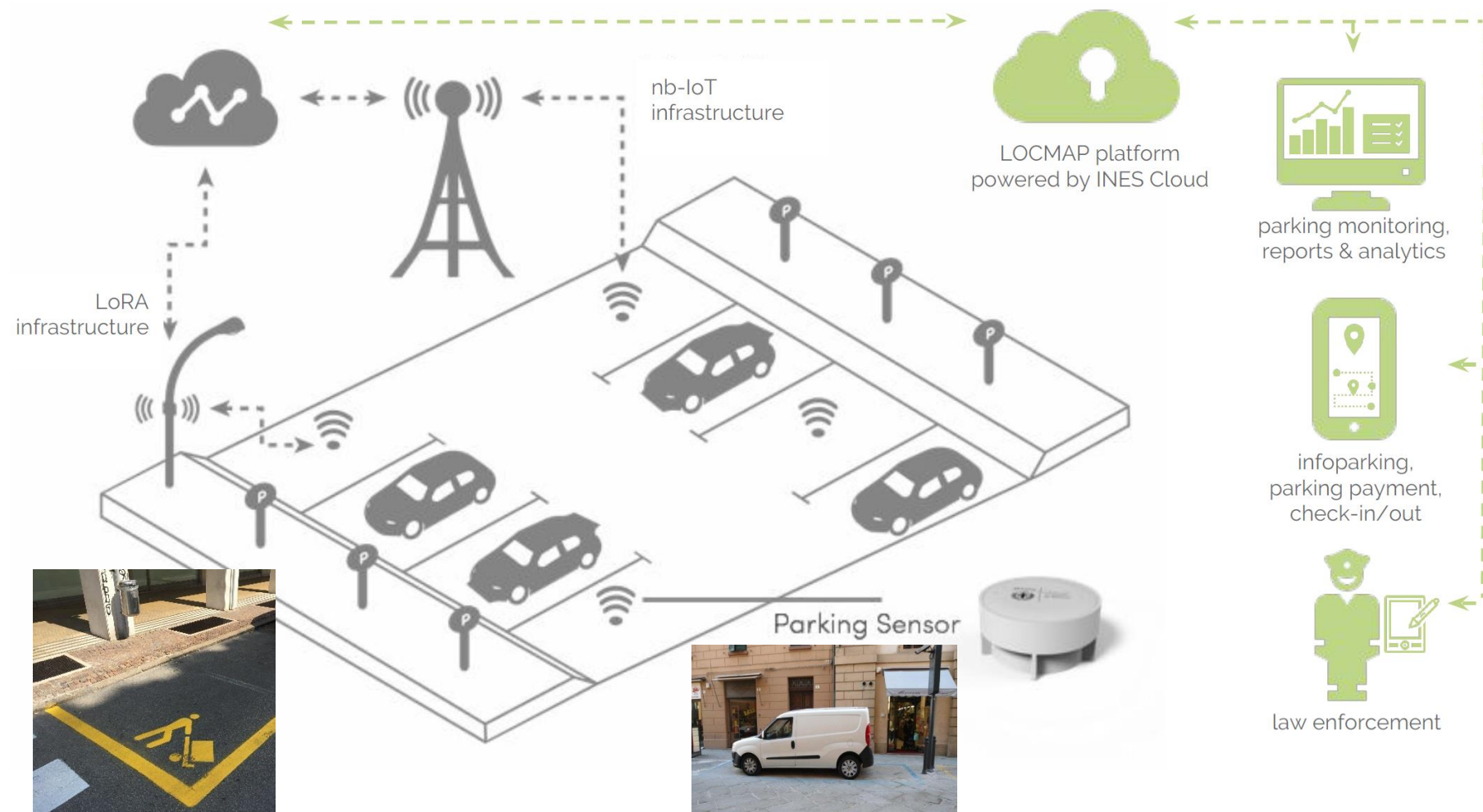


3 Cargo bike stations equipped with n. 3-4 cargo bike each



## Load/Unload parking lots management system

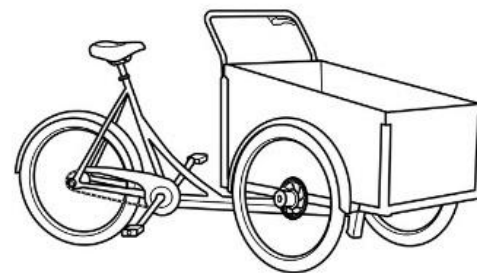
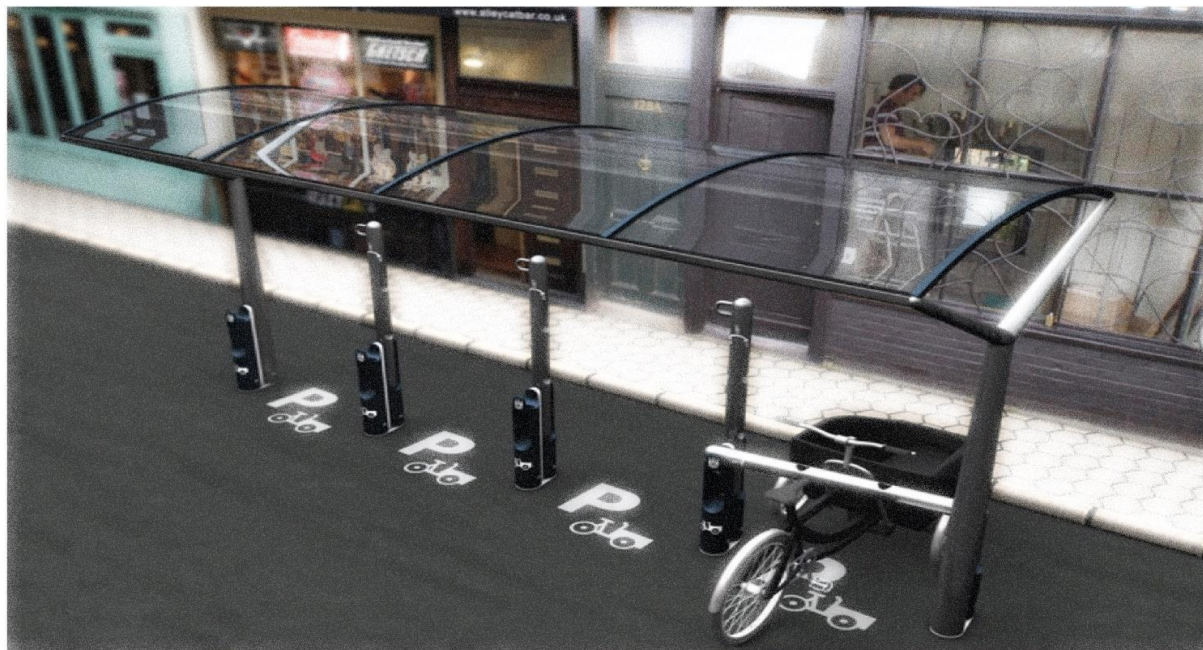
- 34 L/U lots equipped with sensors

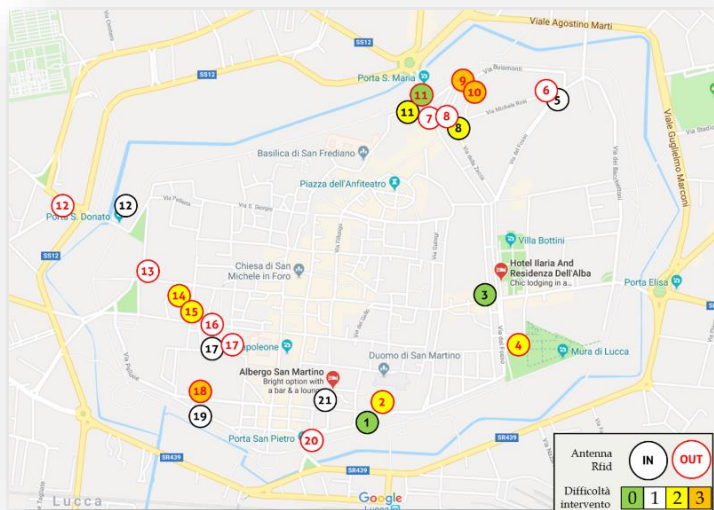


# LIFE ASPIRE – Cargo bikes service

3 stations  
9 cargo bikes

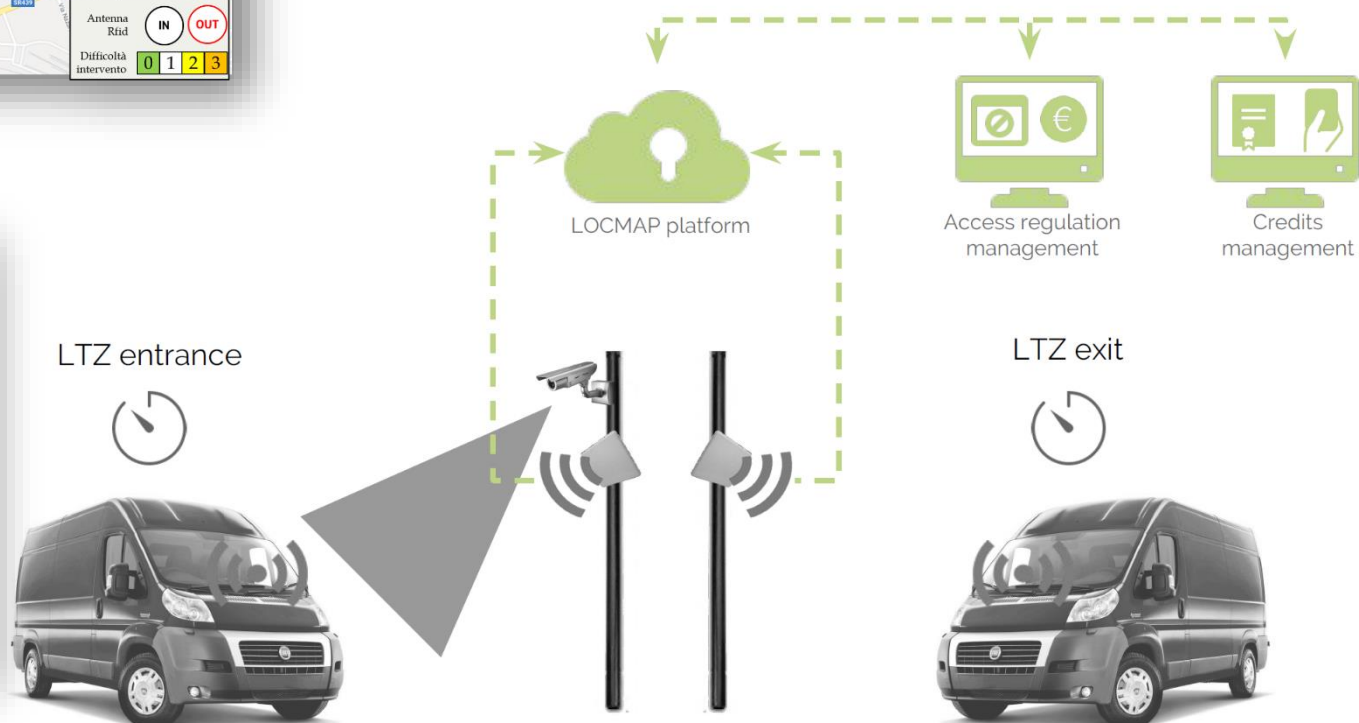
## Cargo-bike Sharing Stations management system





## Access Control System and RFID gates

- Vehicle ID (Mobility pass)
- Entrance time
- Exit time
- N. of vehicles within LTZ



# LIFE ASPIRE – LOCMAP Platform

LOCMAP  
PLATFORM

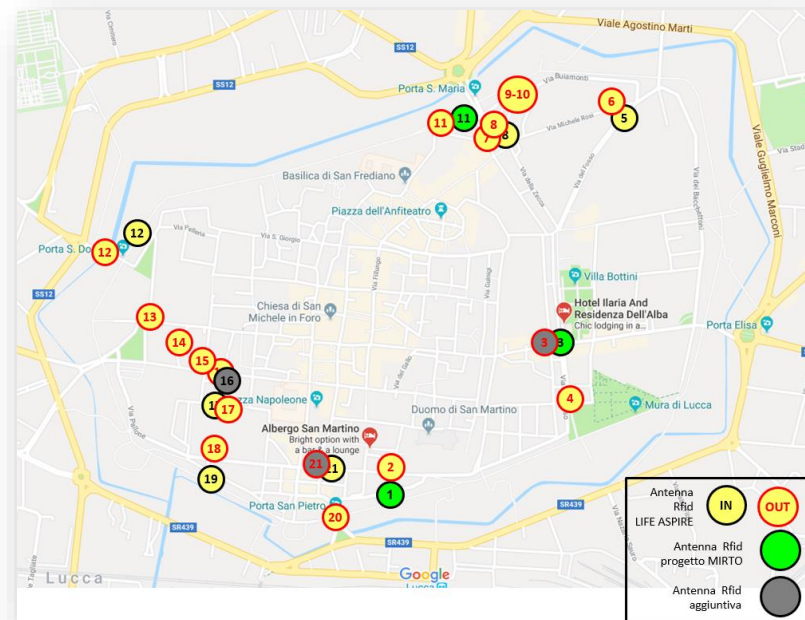
Access control system with  
RFID

L/U parking lots

Cargo-bike sharing services



**“Credit based” access  
control policy**



## Credit management

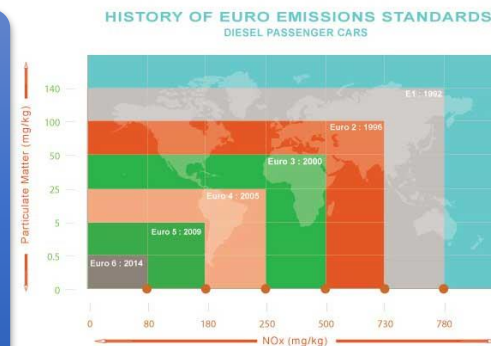
- ✓ *Identification effective credit policy based a “carrot-and-stick approach”*
- ✓ *Definition of a new regulation, supporting the “credit based” access policy*
- ✓ *Awarding approach and not fining, due to regulation constraints*

### Static parameters:

- European emission standard and type of engine (LPG, CNG, hybrid, electric, etc.)
- Gross vehicle weight (16 q, 35 q)

### Behavioral (dynamic) parameters:

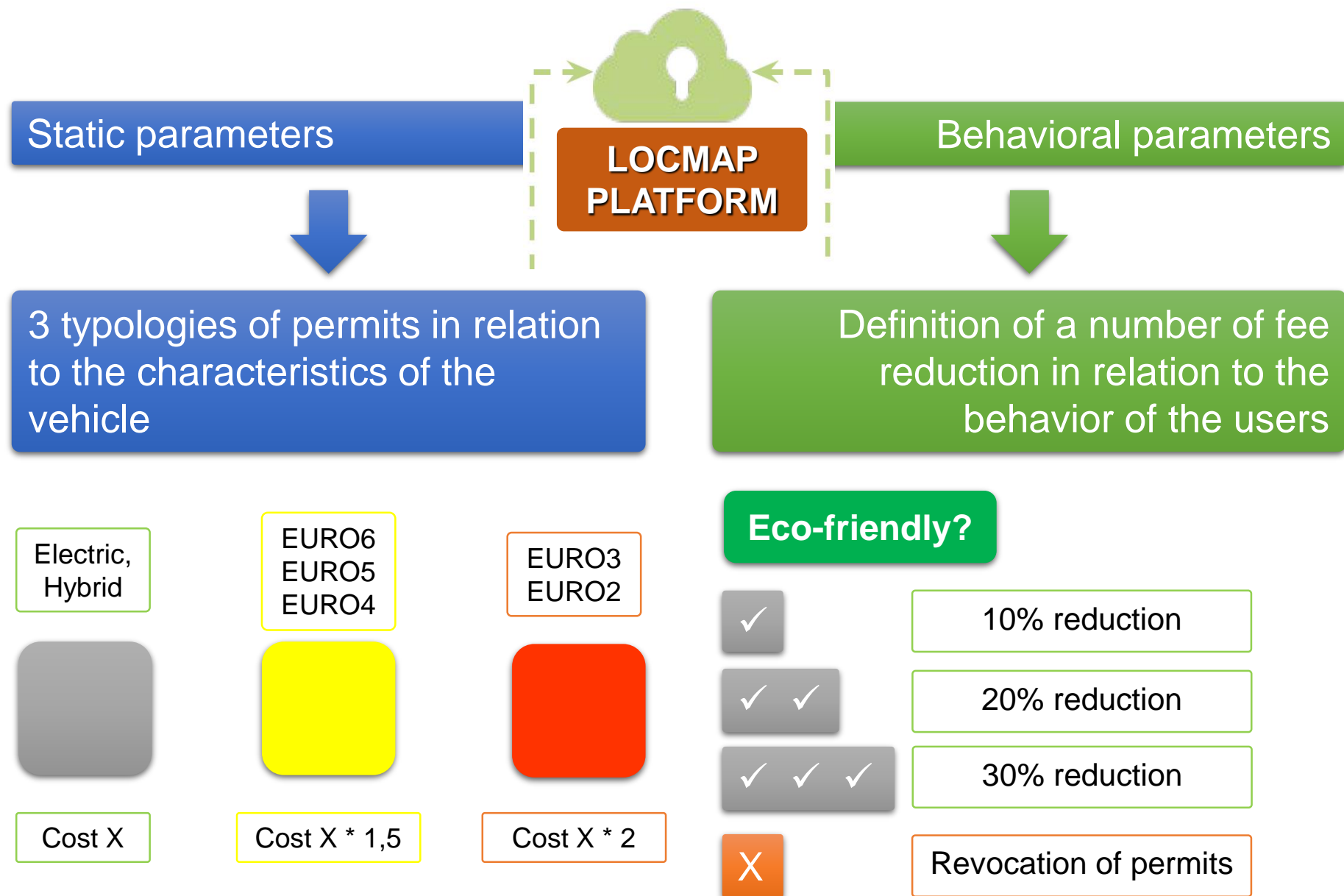
- Permanence time in LTZ
- Frequency of access
- Usage of the L/U lots
- Usage of the cargo bikes
- Time window



Logistic factors and weights	Weight (credit)
1) Vehicle emission	1+5
2) Frequency of daily trips	1+5
3) Duration inside the LTZ.	1+4
4) Use of L/U parking lots	0 (non-use); 3 (use)
5) Use of Cargo-bike	0 (non-use); 3 (use)
6) Use of booking services	0 (non-use); 3 (use)
7) Utilized time window	1; 2
8) Use of the local UCC (Luccaport) services	0 (non-use); 3 (use)



# LIFE ASPIRE “Credit based” Access control policy



# Engagement of Transport Operators Stakeholders



# LIFE ASPIRE – Replicability and transferability analysis

## LIFE ASPIRE demo in Lucca



21 cities with more 1 million inhab.  
180 cities more than 200.000 - 1 Ml  
1364 cities between 40.000 and  
200.000 inhab.

**Transferability**

**Scalability**

## City of Zadar



## City of Stockholm

Broader approach: reward commercial operators or reward all users?

Thanks !

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[www.memexitaly.it](http://www.memexitaly.it)



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