

# **SPA NAVICELLI DI PISA**

## **CITYLAB – TRANSFERABILITY ACTIVITIES**

**PISA**

**24<sup>TH</sup> NOVEMBER 2017**



# AGENDA

**9.00 - 9.15**

Welcome and Introduction of participants

*Marilena Branchina-SpA Navicelli*

**9.15- 9.30**

Introduction of CITYLAB

*Giacomo Lozzi-Polis*

**9.30 - 9.45**

Local Pisa environment/urban freight policy-  
Key questions, main outcomes form the  
project

*Marilena Branchina-SpA Navicelli*

*Gilda Greco-Pisamo SpA.*

**9.45 - 10.00**

Current challenges and opportunities in  
urban freight

*Hans Quak-TNO.*

**10.00 - 10.30**

Living labs approach

*Nina Nesterova-TNO.*

**10.30 - 11.00**

Practical application in Rotterdam

*Hans Quak-TNO.*

Examples other CITYLAB cities *Nina  
Nesterova-TNO*

**11.00 - 11.15 Coffee break**

**11. 15 - 12.00**

Working session on how to apply to Pisa  
(TNO, SpA Navicelli, Pisamo, Polis)

**12.00 - 13.00** Lunch at Darsena Cafè-Galileo  
Galilei Hotel

**13.00 - 14.00**

Rounding up/conclusions, next steps for Pisa,  
all participants

# PISA



**The City is** located in the densely populated valley of the river Arno in Tuscany, 4km from the Tyrrhenian seaside. The municipality has a population of about 90,000 inhabitants. With immediate surrounding it reaches 200,000 inhabitants, representing the second largest conurbation in Tuscany.

## Points of Excellence:

- ✓ **Science and technology:** (University of Pisa, Scuola Normale Superiore and Scuola Superiore Sant'Anna excellence colleges, Technologies Park, National Research Council)
- ✓ **Health:** University Hospital (“Santa Chiara” Hospital is the most important health structure in the area which boasts numerous excellence)
- ✓ **Tourism:** Leaning Tower, Miracles Square (Heritage Site by UNESCO since 1987)
- ✓ **Transport Hub: International Airport (Galileo Galilei)** with over 4M passengers per year, is the largest in Tuscany. It is the gateway to key tourist and business destinations (including Florence, Siena, Liguria and the Tuscany sea side); **The rail station**, at the crossroad between the central and the coastal axis of the Italian rail network, sees over 15m passengers per year; **Inland waterways – Pisa Circuit** - The coastal territory of Pisa is characterized by a particular river-maritime circuit with a great potential



# BECOMING A SMART CITY

Pisa now looks towards a new era of prosperity leveraging on its immense historical and cultural heritage and the excellence of its research institutions. The challenge is to transform sustainability into a powerful driver for economic growth and technological leadership.

Becoming a smart city is therefore an imperative: a city that optimizes resources, exploits its capacities and uses technologies to minimize the ecological footprint and improve the quality of life of its citizens.

To this objective, a Smart City Plan integrates into a coherent framework all relevant projects, plans and regulatory instruments along four axis:

- **city of quality of life** (quality of buildings, security, sport, city branding);
- **city of knowledge** (research and innovation, creativity);
- **sustainable city** (environment, energy, mobility, development)
- **accessible city** (participation, e-services)

The city also signed up to the **Covenant of Mayor** thereby committing to meet and exceed the European Union 20% CO2 reduction objective by 2020.

# NAVICELLI DI PISA SPA

## THE COMPANY



Founded in 1982

### Publicly owned Company

- 33% Municipality of Pisa
- 33% Province of Pisa
- 33% Chamber of Commerce, Industry and Agriculture of Pisa

### Canal Port Authority

- Management and administration of the state-owned assets
- Maintenance and dredging of the Canal
- Coordination and control of the navigation

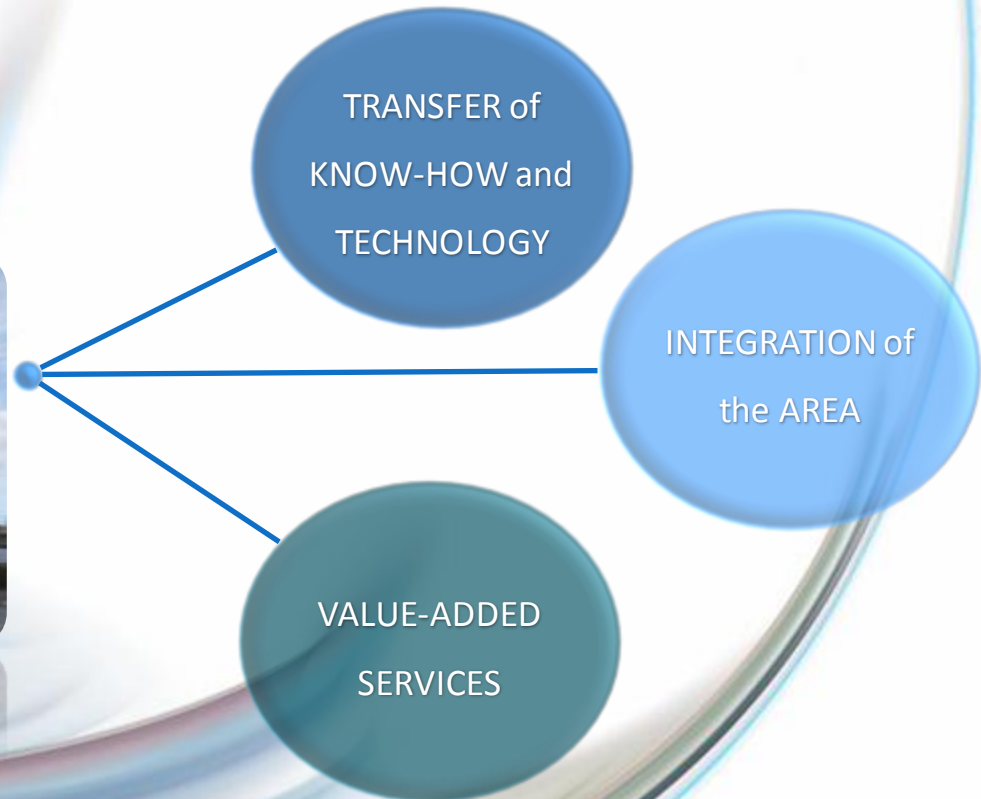




# YACHTING LAB NAVICELLI

## SERVICE AND RESEARCH CENTRE (R&D) FOR BOATING

Active since 2008, in order to promote **innovation** and **sustainable development**



Integrated approach to improve competitiveness of boating industry in the global market

# SERVICES TO SUPPORT THE SHIPBUILDING INDUSTRY



Among the services offered by the Society there are four areas, as follows:

## CONSULTING & SERVICES

- Brokerage industry.
- Tourist services for berthing and booking guided tours and sightseeing.
- Services for connectivity, logistics, organization and management.

## INNOVATION & DEVELOPMENT

- Management of public and private funds.
- Promoting and supporting innovation in the nautical sector.
- Supporting the transfer of technology.

## MARKETING & COMMUNICATION

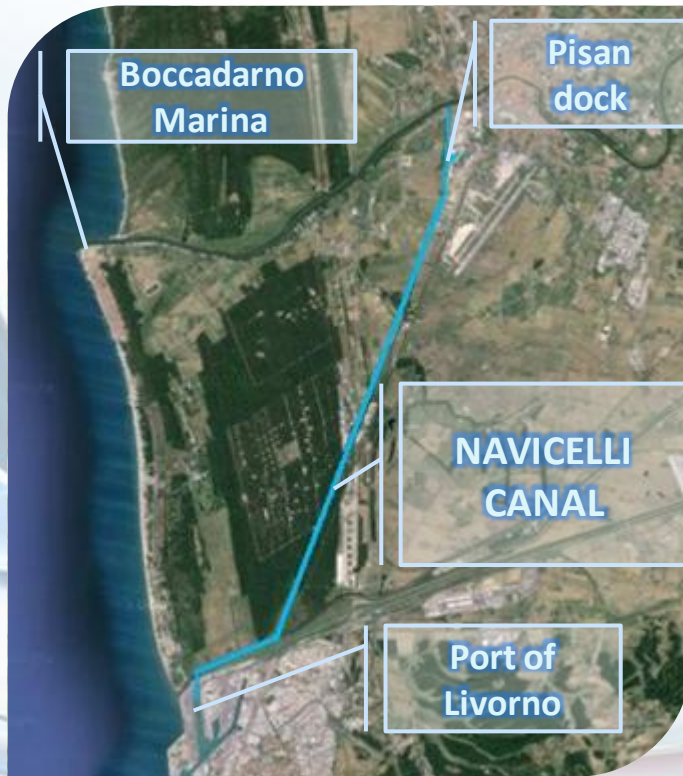
- Promotion of the Navicelli area and local enterprises through the participation to exhibitions.
- Institutional relations with local and foreign authorities.
- Organization and management of events.
- Renting of spaces for exhibitions.

## TRAINING

- Design and development of training packages aimed at characterizing the various professionals of the nautical sector.
- Activation of courses and training.
- Renting of equipped classrooms.



# THE NAVICELLI CANAL



A navigable waterway built in the Medicean Era (1560-1576) by Cosimo I de' Medici to connect the Port of Livorno to the City of Pisa

## Canal Figures:

- Length: 17 km
- Width: 33 mt
- Depth: 3 mt

## Pisan dock Figures:

- Length : 200 mt
- Width : 70 mt
- Depth : 3 mt





# PORT'S FACILITIES

n.1 **Quay** of about 600 mt length along the **Pisan dock**



n.6 other **quays** located along the **Navicelli Canal**



# PORT'S FACILITIES



n.1 **travel-lift** for launching and towing activities

n.16 **multi-service columns** Water/Energy along the Pisan dock



# LOGISTICS FEATURES



Proximity to the main roads and motorways

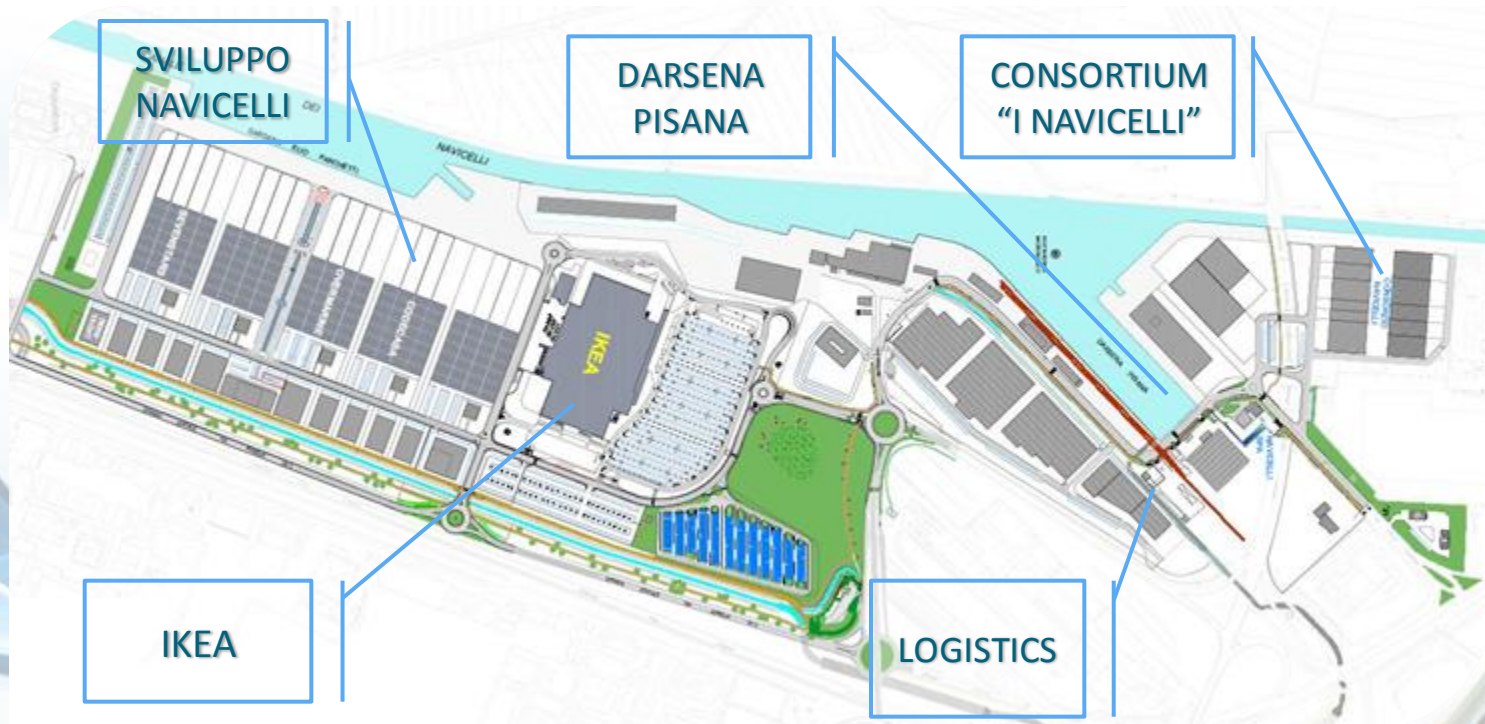
(SGC FIPILI – A12)

Proximity to the International Airport “Galileo Galilei” of Pisa

n.1 railway double track on the dock's quay (Pisan dock)



# NAVICELLI AREA RECENT DEVELOPMENT



- SVILUPPO NAVICELLI SPA: 480.000 m<sup>2</sup>
- DARSENA PISANA (CNA): 56.000 m<sup>2</sup>
- CONSORTIUM "I NAVICELLI" (CNA): 70.000 m<sup>2</sup>
- PLEASURE BOATS SHIPYARDS: 270.000 m<sup>2</sup>
- LOGISTICS AREA: 40.000 m<sup>2</sup>
- OFFICES/ LABORATORIES / SERVICES : 125.000 m<sup>2</sup>
- IKEA: 33.600 m<sup>2</sup>



# NAVICELLI AREA FIGURES



**Total companies:** 21 direct companies situated along the Navicelli Canal



**Direct employment:** around 500 workers and direct employees



**Led occupation:** about 1000 technicians and outside workers units

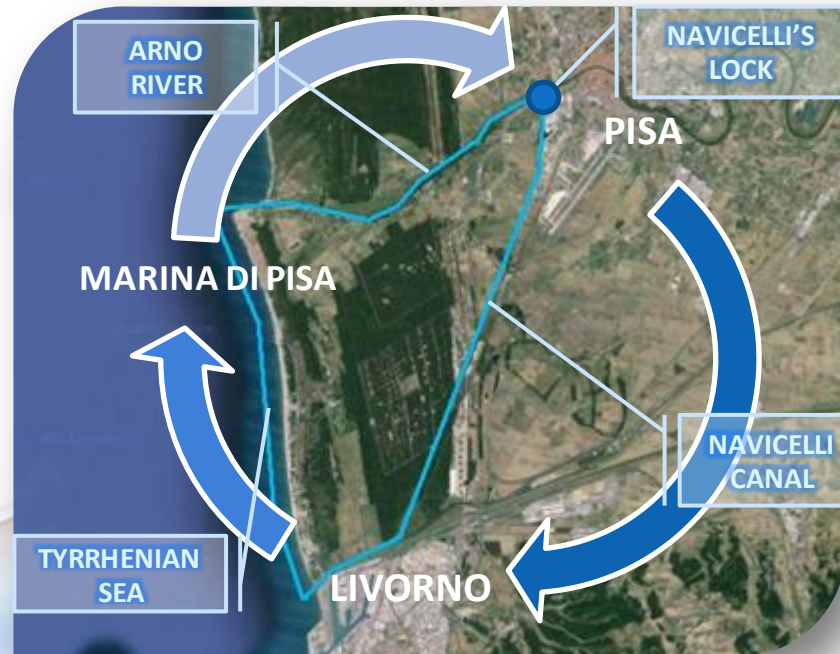


**Total turnover:**  
160 million €





# THE RIVER MARITIME CIRCUIT



The coastal territory of Pisa is characterized by a particular **river-maritime circuit** with a great potential. The Navicelli Canal and the Arno River connect together:

- **Historical city** : Pisa
- local touristic and commercial **ports** : Marina di Pisa and Livorno

An increasing in waterways' utilization will provide an effective way to implement **tourism** and **logistics** and **intermodal transports**

# NAVICELLI'S LOCK



The realization of Navicelli's Lock will **reactivate the ancient link between the Arno river and Navicelli Canal**

A **lock** is a device used for raising and lowering boats, ships and other watercraft between stretches of water of different levels on river and canal waterways



# PISAMO SPA



Founded in 2004 as a public / private joint-stock company between the City of Pisa and CPT SpA (local public transport operator).

Since 2006, the Company is owned by the City of Pisa, to manage all issues related to local Urban Mobility and the public services







# Urban Mobility Priority

- the improvement of circulation (movement and stop)
  - road safety improvements (reduction of road accidents)
  - the reduction of atmospheric and acoustic pollution
  - energy saving
  - the reduction of private vehicle traffic and increase public transportation
  - the introduction of a system of automatic access control by installing electronic sensor systems both for public and logistic access
  - physical passing closures remote control by buses and rescue vehicles, Park cars transformation with ecological vehicles (electric cars, etc.)

# The smart city initiatives for transport



## *ELECTRIC MOBILITY*

- E-mobility Italia project, its objective was to realize 70 charging stations and 25 vehicles
- Electric mobility theme requires future action like: Electric bususage; delivery limitation into the ZTL area to only electric vehicles
- Logistic platform setup at the city entrance for loading/downloading operation

## *PUBLIC TRANSPORT WITH INNOVATIVE TECHNOLOGIES*

- PeopleMover, connecting system between Galileo Galilei airport and the railway station
- Busvia (station-hospital-turistic area)
- Feasibility assessment about the unique ticketing system

## *TRAFFIC MANAGEMENT*

- Infomobility services (ITS, both for private and logistic transport)
- ZTL eparking management in the central area
- R-fid technology for parking entrance (Pisa Pass)
- Traffic monitoring setup
- Traffic lights management

## *ALTERNATIVE MOBILITY*

- Cycling (bike sharing)
- Car sharing for freight transport
- River circuit restructuring (Arno river, Canale dei Navicelli)



# CITY OF PISA - MAIN LOGISTICS FEATURES





# LOGISTICS POLICY BACKGROUND -PISA

The city of Pisa is adopting a SUMP that involves only partially a SULP.

In fact, **SUMP** is mainly addressed to citizen, with tools for *permits management, parking control, bike sharing, car sharing, and environment monitoring.*

The actual **SULP** is regarding *permits to access the LTZ by freight vehicles, and foresees an initial step of EV VAN sharing, integrated with an EV Car sharing.*

Pisa has adopted 5 EV for urban freight, that could be reserved via WEB application by the good transportation companies, to access into the LTZ in the city.

Regarding the tools used in this moment, the city of Pisa releases **temporary permits to access in LTZ**, during specific times of the day; these permits are integrated into the general permits program, to measure the number of permits requested, and determine policies to release them.

There are **no tools and policies to control freight vehicles outside the LTZ** but inside the city.



# PROBLEMS AND NEEDS

The monitored area for this intervention is the entire boundary of the city through the main access/exit roads.

For specific actions, as the monitoring of reserved parking areas for freight vehicles, the area is the LTZ.

The main problems and needs focused are:

1. the ***lack of knowledge of number and concurrent access of urban freight***; this could be resolved through the integration of new technologies (for traffic counting and classification) and the actual instruments already available from the SUMP of the city (RFID gates and passes)
2. the ***lack of reserved parking slot availability in the centre of the city***; this could be solved by increasing the reserved slots for freight vehicles, information about their availability, and the EV VAN Sharing

# NOVELOG - Pisa Pilot Project



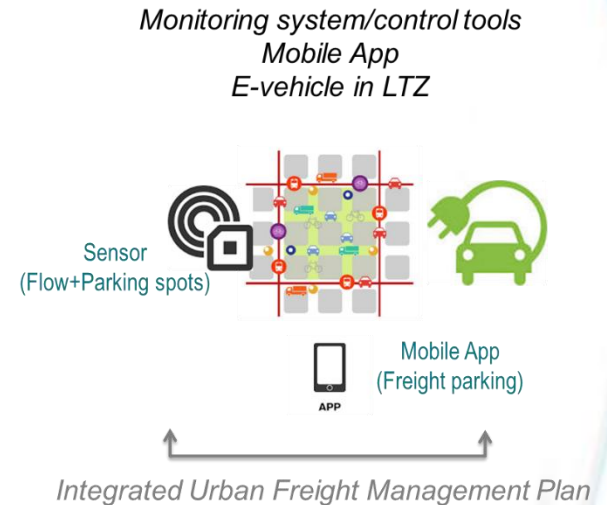
The Novelog Pisa Pilot project intends to **monitor access of vehicles** to transport goods within the city, through methodologies, measurement and control tools that help us **understand urban traffic due to freight carriers**, the availability of the stalls reserved for them, and the **incentive to use of electric vehicles** in the LTZ area, all integrated in already existing SUMP already in place.

# NOVELOG PILOT - Objectives



## **OBJECTIVES IN DETAILS:**

- **Know the population of carriers** through the widespread distribution of cards (permits passes) with RFID TAGS.
- **Monitor and manage the access of freight vehicles** within the city, recognizing the types of vehicles entering through innovative technologies, as flow sensor wireless based, to enhance the data information coming from RFID Gates
- **Send alert information via mobile app** to goods carriers, useful to a better organization of transport of goods, such as the availability of goods stalls in the town center, and to inform the local police for parking time violation
- **Encourage the use of electric vehicles** within the LTZ for local exchange carriers, to decrease the CO2 emissions within urban areas
- **Development of implementation plan** for integration of urban freight management solution with local transport programming documents



# METHODOLOGY AND TOOLS



## Methodology

- ✓ Building a framework, HW and SW, to collect, analyze and compare different data types, in order to resolve the above described problems in an open and structured way

## Tools

- ✓ A network of different sensors, wireless based, completely integrated with an operation center
- ✓ Information urban panels, mobile application alerting and notification system.





# NOVELOG PILOT – How it Works

SW/HW development infrastructure, SW to collect data related to the registry of the freight vehicles, permits to enter in LTZ, passes through **Flow Sensor gates** and the number of “stop and go” over the **freight parking spots**.

**Mobile APP** developing to help freight vehicles to find the best route to arrive in available Freight parking spots, and to know the available freight parking spots in that moment.

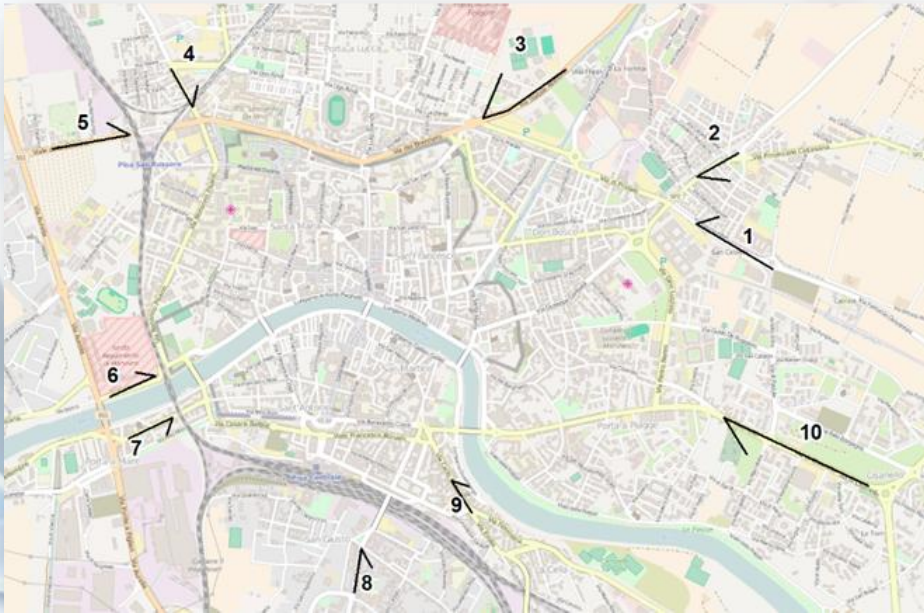
The **HW** is related to a certain number of Flow Sensor gates, to identify the freight vehicles, and a certain number of freight parking spots sensors, to know the available spots.



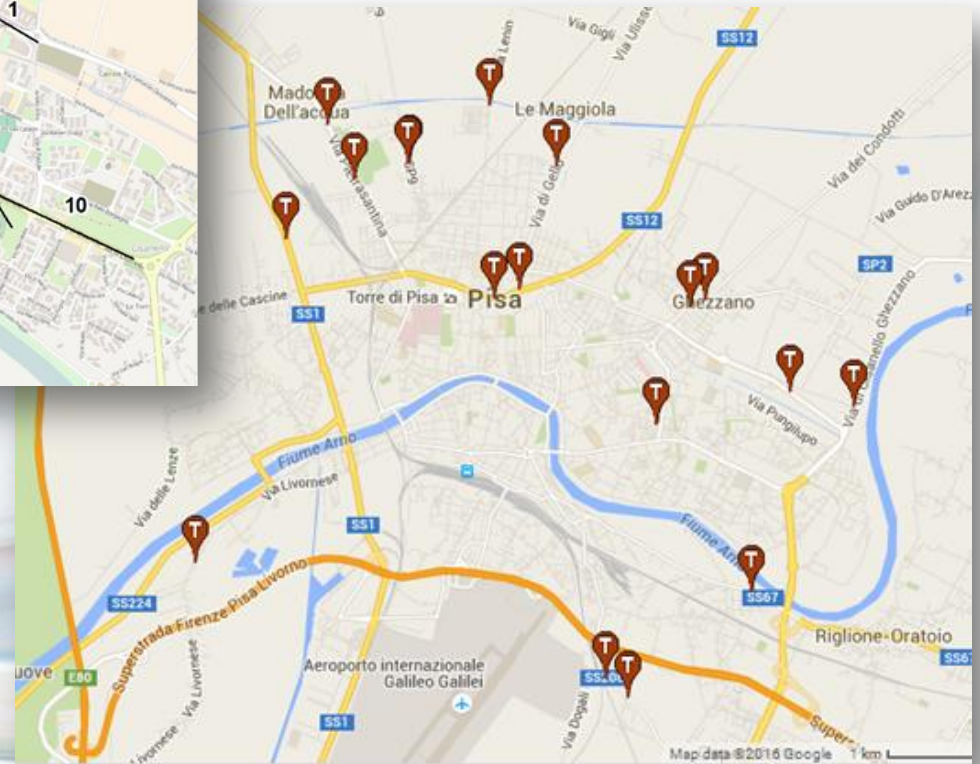
# NOVELOG PILOT – MAP



**MAP OF EXIT / ENTRANCE POINTS IN THE CENTER OF PISA**



**MAP OF FLOW SENSOR GATES INSTALLED**





# NOVELOG PILOT - Stakeholders

## ***STAKEHOLDERS INVOLVED IN THE PILOT/CITY CASE:***

- Public Authority (or public owned): City of Pisa, Spa Navicelli , Pisamo, SEPI
- Trade Associations: CNA, Confcommercio, Confesercenti, Confartigianato
- Chamber of Commerce of Pisa

## ***MEMBER OF THE STAKEHOLDER PLATFORM*** (Representatives of):

- transport operators
- freight forwarders
- shop owners
- retail chains
- associations
- the municipality
- research and academia

# NOVELOG PILOT – Questionnaires



We have provided a **questionnaire related to the transport of goods** to the main logistic operators in the area **(n. 50 operators)**

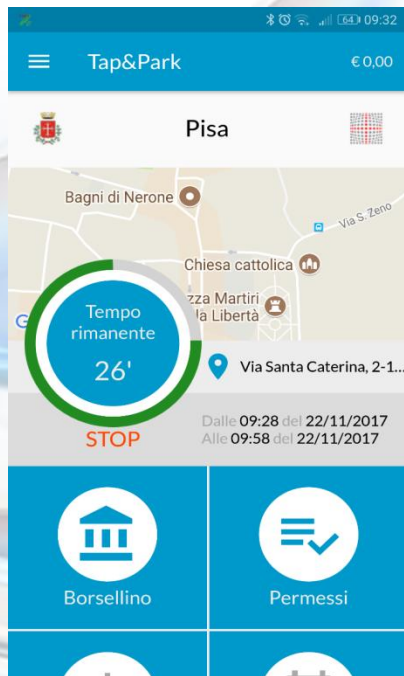
From the data collected so far, it follows that:

- **Main means of transport used:** vans (euro4/5 and euro6)
- **Type of packages:** pallets, loose packages (bulk), envelopes
- **Time required for loading:** 15 min (on average)
- **Percentage of goods delivered** in the center of Pisa: 50% (on average)
- **Main directions of delivery**, out of the city: n.9 (via Cattaneo), n. 10 (via di Cisanello)
- **Main areas of delivery** inside the city center: San Martino, San Francesco, Santa Maria

# NOVELOG PILOT – The Mobile APP



## Parking



## Payment

## Timing

# DISCUSSION



- High level of defragmentation of deliveries by own-account transport operators
- Third party transport in the hands of a few operators/couriers
- Few vehicular accesses to the city center
- High traffic congestion with high vehicular density
- Commercial activities have more and more logistics needs
- Presence of many activities in the center with few parking slots for freights loading / unloading
- Lack and delay of strategic urban mobility planning



SpA Navicelli  
di Pisa

***Thank you  
for your kind attention!***

**Marilena Branchina  
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