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Pilot Factsheet – Livorno

Pilot action overview

The Feasibility Study conducted by the Municipality of Livorno during the first stage of MED-COLOURS project provided an in-depth assessment of the four planned measures for improving urban logistics into the extended Venezia district. Based on the insights and outcomes of the Study, the measures that will be developed by Livorno are the following:

Studies and specification:

A. the *revision of the regulatory framework* for freight distribution process in the pilot site Area ("*La Venezia Estesa*").

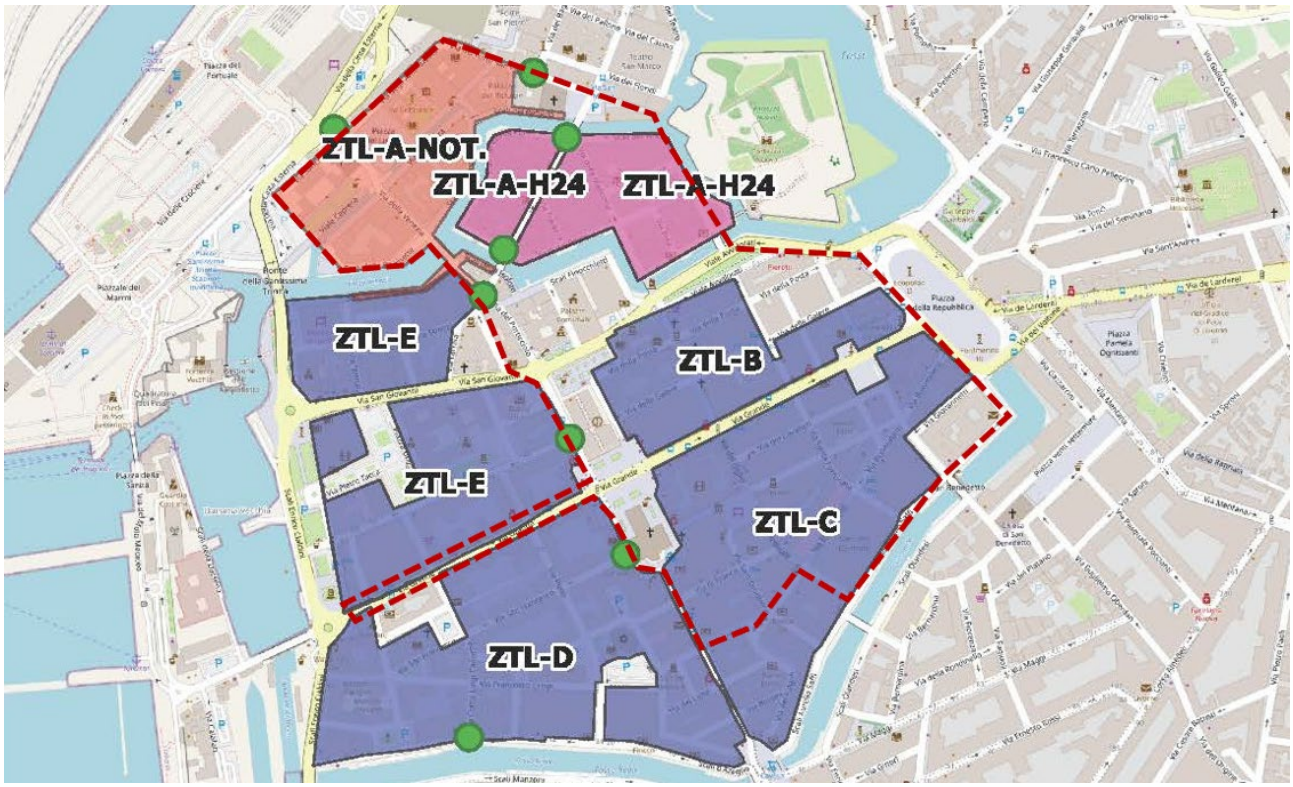
B. *Design, planning and specifications* of 3 measures: B.1) revamping and extension of the existing access control system; B.2) smart loading/unloading bays (with a micro-hub approach); B.3) rewarding IT platform functionalities and technical aspects.

On field and digital solution implementation:

C. *realization*, in the "extended Venezia" Pilot area, of *n° 3 smart loading/unloading bays* (micro-hubs) based on environmental/bio-material (galvanized steel, organic dyes, natural-based materials, bio-asphalt to avoid thermal effects, etc.) and IoT sensors and sign digital devices for bay control (occupancy, information to logistics operators, etc.).

D. *development of an awarding IT platform based on static* criteria (interfacing with the freight access permit procedures) for reducing the last mile delivery impacts in Pilota area.

The MED-COLOURS pilot of Livorno Municipality interests the "extended Venezia district", old part of city center, focusing on the most suitable solutions and measures for improving the urban logistics processes and the evaluation of their sustainability and transferability to other areas Limited Traffic (LTZs) and pedestrian zones of the city.



The table below provides the synthesis of the 4 planned measures, clustered in terms of main envisaged solution.

MEASURES	*Type of Action*	*Sub action*	*Synthesis*
Revision of Regulatory framework	Study and specification	A	• Identification of critical issues and possible changes to the regulatory framework of the Pilot area. • Identification of the main impacts resulting from possible new regulation.
Access Control Systems specifications	Study and specification	B1	• Technical-functional specifications related to two possible scenarios of intervention: - Revamping (updating the current system); - Realization of a new control system.
No. 3 Smart loading/unloading bays (micro-hubs) specification and realization	Study and specification & implementation	B2; C	• Specification of technical/material terms for the requalification of goods L/U bays. • Technical-functional definition of an ICT solution for controlling the occupancy status of L/U bays. • Realization of 3 smart bays.
IT Awarding Platform Specification and implementation (Static criteria)	Study and specification & implementation	B3; D	• Technical-functional specification of a Reward platform based on: - Static Reward Criteria; - Dynamic Reward Criteria; • Implementation of the static module.

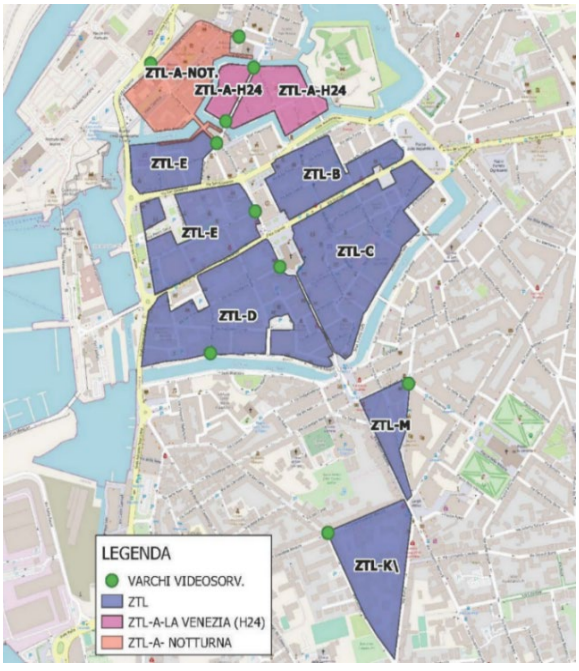
Action Plan – timeline

The timeline for specifying and implementing the four planned measures is outlined in table below. Studies & Specification actions are highlighted in blue, while Implementation actions are represented in orange.

Pilot Action	**2025**										
	J	F	M	A	M	J	J	A	S	O	N
Activity 1											
Activity 2											
Activity 3											
Activity 4											

Activity 1 - **Revision of Regulatory framework**

The Extended Venezia district (Pilot area) is characterised by the presence of different HO.RE.CA activities (mainly bars, restaurants, pizzerias, etc.) especially concentrated in the Venezia district; the included LTZs B and C ("Buontalenti Pentagon) also presents a relevant number of commercial shops (mainly clothing and food) along with a historic covered food market. Venezia district also involves the "Via Grande" street, one of the most relevant commercial roads in the city, which hosts a strong presence of HO.RE.CA activities and shops. In total, there are approximately 560 commercial activities in the pilot area, a great percentage of the overall commercial activities of the city. Therefore, a thorough review of the regulatory framework supporting sustainable last-mile freight delivery in the "extended Venezia" is being conducted taking into account also the other existing (or planned) LTZs and pedestrian areas in the overall urban network.



The analysis is carried out first by identifying some critical issues in the current framework, secondly, detailing possible changes and modification, and finally, assessing the impacts of the proposed changes with respect to the different actors involved in last mile delivery processes taking into account also new data sets, according to the DATEX II standards)required by the EU Delegate Urban Access Regulation 2015/962 with the UVAR (Urban Vehicle Access Regulation) approach.

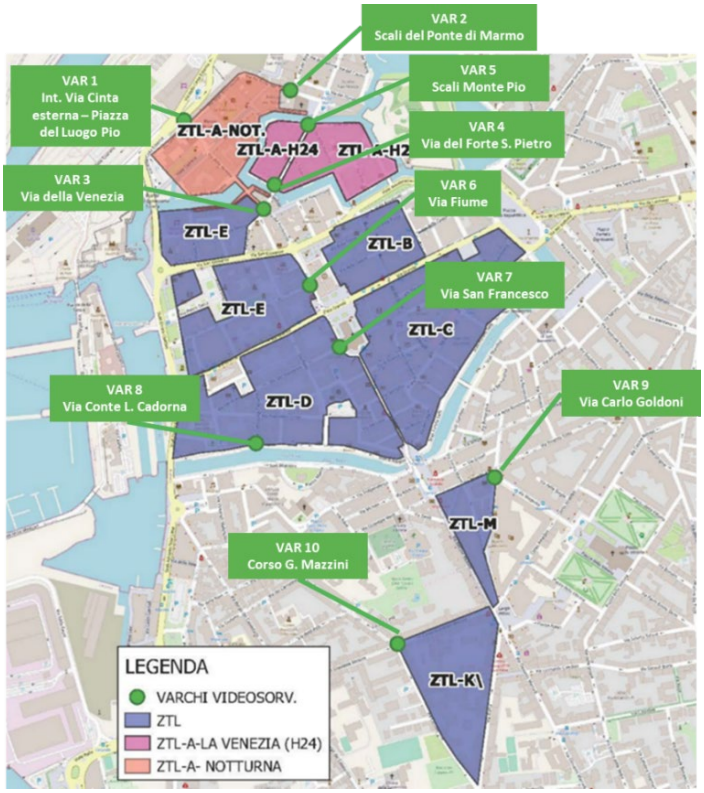
The main actions under development are the following ones:

1.1 *Detailed analysis of the existing regulatory framework.*

1.2 Proposal for update of the regulatory framework.

1.3 Integration and approval by Administration.

Activity 2 - **Access Control Systems specifications**



Since the Municipality of Livorno already operates an Access Control System (ACS) on 8 gates - 6 located in the extended Venezia district -the analysis of the existing system is started in technical and functional terms both at peripheral level (gates) and at the central Control room and communication devices. The activities therefore are concentrated in developing the specification under two IT scenario: a) *revamping/updating of the current system*, b) *realization of a new system* (ACS) that shall be chosen by the Municipality on carried out the related specification study.

In particular, these two scenarios involve the following macro actions:

SCENARIO "**RV**"– *Revamping*: updating and replacing the system components where necessary and the update (technical/functional) may concern the peripheral level and/or central level devices, also involving possible SaaS solutions compared to the current "on-premise" solution.

SCENARIO "**RP**" – New purchase, supply and installation of a new access control system. In this case, in addition to the benefits of having latest-generation HW and SW components, the Municipality has the possibility of requesting additional functions to be implemented on the different architectural levels (central and/or peripheral).

The common aspect of these two scenarios is given by the need to produce system technical/functional specifications on which to base the system revamping process (with a closed dialogue with the current provider) or to proceed with the procurement process in the case of ex-novo purchasing.

Therefore, the main actions under development and the ones to be carried out are the following:

2.1 Technical analysis on current system and new requirements

2.2 Internal technical discussion for taking a decision on RV o RP approach

2.2 Production of system technical/functional specifications

Activity 3 - **Smart Loading / Unloading bays (micro-hub) realization**

As regards the goods Loading and Unloading (L/U) bays, the first step developed concerned the analysis of the existing set of bays available in Extended Venezia district (and also in the other ZTL areas) for couriers and last mile operators in terms of number and location.

In particular, for L/U bays located in the pilot area (extended Venezia), in addition to this analysis, the specific interventions such as the realization of a new road surface (with biocompatible materials), the creation of horizontal and vertical(smart) sign as well as innovative IT and digital

elements of street furniture in a micro-hub perspective is going to be specified. The IT and digital devices in fact, shall allow to provide additional services to operators such as, for example, information on the occupancy status of the single bay, on recharging points for any electric vehicle used for deliveries during the parking period, etc. Firstly, specifications is carried out both with respect to the renovation and requalification of the bay and with respect to needed digital devices for controlling the occupancy status of single bat. Further step will be the realisation of n° 3 smart loading/unloading bays based on a micro-hub approach in Venezia district. Therefore, the involved actions are the following ones:

3.1 *Technical-functional specifications.*

3.2 *Purchasing process.*

3.3 *No. 5 completed bay realization, testing and sign-on.*

Activity 4 - **IT Awarding Platform implementation (Static criteria)**

The Municipality of Livorno, based on the SUMP indications (as for the previous measures) decided to develop an awarding platform to encourage "green and virtuous" behaviour of freight transport operators for the last mile delivery specially in the extended Venezia district (Pilot area). This IT platform allows to collect and integrate for each transport operator, the *static data* related to their permit (e.g. type of vehicle, emission category, type of permits, etc.) and (in a second stage) the *dynamic data* related to their delivery process (behaviour) interfacing the access control system and L/U bay control (once these will be realised).

The platform, through the collected data and processed according to the award criteria, based on the revised regulation framework allows the attribution of "ecopoints" (or mobility credits) to each transporter. In case of dynamic data, the ecopoints will be assigned also in relation to the behaviour of the operator in the last mile delivery (e.g. number of entries into the ZTL or time inside in the controlled area).
In this context the Municipality decided to activate the awarding platform in different steps, interfacing the permit management procedure and in a second step to extend the platform both in terms of application areas and interfacing with existing systems such as, for example, the access control system.

Therefore, two implementation phases have been defined by the Municipality:

PHASE “A” – development of module allowing the acquisition of “static” data about freight vehicles from permit issuing procedures and/or via interfacing with third-party platforms/services

PHASE “B” realization the module allowing the interface with the controlled bay and with the Access Control system (when they will be ready) for the acquisition of “dynamic” data useful for controlling the last mile behaviour of the transports.

In any case, each of these two phases allows to assign credit (“ecopoint”) to each registered operator with respect their fleet /vehicles and their behaviour.

In MED-COLOURS the “static” module will be realised based on the platform specifications that is under development. On the basis of the results achieved in MED-COLOURS subsequently the Municipality will take the decision to proceed with the realization of the “dynamic” module due to its strong link with the systems to be activated in the ZTL and the level of organization needed.

The involved actions are the following ones:

4.1 *Platform Technical-Functional Specification.*

4. 1 Definition of organisation/operation aspects.

4.3 Realization, testing and sign-on.

Stakeholders involved

For the specification and realization of the MED-COLOURS measures The Municipality aims to engage the different stakeholders of urban logistics processes and last mile delivery grouping into these categories:

- Logistics and transport operators
- Shopkeepers and HO.RE.CA associations
- Authority and city services
- Citizens' associations
- Other (professionals, etc.)

From the Municipality point of view the dialogue and engagement of several user groups will allow to collect suggestions and requests on the measures defined in this first phase (for example location of loading/unloading bays, parking time windows, etc.).

In the following table the stakeholders map is provided concerning the last mile delivery in the Extended Venezia

Organization	Description	Role/resources buy-in
Freight logistics operators	Private companies that transport and deliver goods to the different commercial premises located in the pilot area or delivery directly packages to the residents of pilot areas (e-commerce)	They have a prominent role in the city's commercial activity. The efficiency/punctuality of their service through e-commerce is also pivotal and a functional element of their operation workflow While they tend to be not in favor of many regulatory constraints, they instead are usually in favor of initiatives that facilitate their operation cycle such as the increase of the number of loading/unloading bays and related micro-hub functionalities and support
Shopkeepers, HO.RE.CA activities	All commercial activities located in the pilot area indicated as HO.RE.CA sector and shopkeepers mainly linked to food and clothing sectors	their activities are the factor that makes the city center, and particularly the pilot area La Venezia Estesa alive, The problem. Is that the deliveries in the area all take place at the same time and during peak hours, causing

		high levels of congestion and pollution. This could be faced by a new and accepted regulatory framework and related control of loading and unloading bay and ZTL access
Municipality departments	The Municipality is responsible for the city's pollution levels and citizen health and therefore the Municipality is interested in managing urban logistics processes in the most sustainable way. Furthermore, operationally three departments of the municipality are interested in having control tools: urban surveillance, the trade department and the environmental department	On the basis of the received requests, these departments can propose to elaborate new regulations or to modify existing ones to be presented and approved by the Municipality.
Association and citisens group	These actors are interested in reducing the congestion, the level of pollution and to increase the liveable of the district	These actors should be involved not only to provide specific contributions but also to evaluate the solutions and monitoring the effective achievement of sustainable objectives