



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

LIFE ASPIRE

**Advanced logistics platform with road pricing and access
criteria to improve urban environment and mobility of
goods**

AFTER-LIFE PLAN



LUCENSE



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1. Project Data

Project location:	Lucca, Italy (also Zadar, Croatia; Stockholm, Sweden)
Project start date:	01/10/2017
Project end date:	30/09/2020 Extension date: 30/09/2021
Total budget:	€ 1.865.799,00
EU contribution:	€ 1.037.488,00
(%) of eligible costs:	60%

1.1 Beneficiary Coordinator

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This document represents the After-LIFE Plan for the LIFE ASPIRE Project. Following the guidelines of the LIFE 2014-2020 Programme, it outlines the intention of the Consortium to continue the eco-sustainable services, promote and communicate the project results in the forthcoming years and the typology of external support required.

2. Advanced logistics platform with road pricing and access criteria to improve urban environment and mobility of goods - LIFE ASPIRE: Introduction, objectives and strategies

The LIFE ASPIRE project has implemented a series of measures (normative, organizational, operating and technological) relative to the city logistics processes, and in particular to last mile deliveries, extending/integrating those already implemented in the city of Lucca, in order to achieve higher levels of energy efficiency and urban air quality and, consequently, to improve the quality of life of people (in particular residents but also tourists).

In Lucca, among other logistics measures, LIFE ASPIRE Project has introduced a "credit based" access policy that allows a flexible application of road pricing criteria to freight transport operators. The innovative feature of the project has been the implementation of a policy that rewards transport operators on the basis of different factors (e.g., EURO standard vehicle emissions, travel frequency, use of cargo bike stations, etc.).

As an operational tool to manage this innovative policy, LIFE ASPIRE Project realized a Logistics Credit Management Platform (LOCMAP). LOCMAP manages 3 types of technologies and logistics services:

- Monitoring enters and exits in/from RTZ with RFID antennas
- Load/Unload Parking lots with smart occupancy sensors
- Cargo-bike Sharing system

The potential for replicability and transferability of the "credit-based" access control policy (including new complementary logistics services) and its support platform have been defined and verified in collaboration with the cities of Stockholm (SE) and Zadar (HR), taking into account their specific contexts.



LIFE ASPIRE aims to achieve real improvements of air quality in the urban area of Lucca by demonstrating new city logistics policies, services and enforcement measures that lead to a significant reduction of traffic congestion and emissions of freight vehicles in the city

centre (in particular in the RTZ).

3. Main results achieved

3.1 LOCMAP and LIFE ASPIRE App Creation of an integrated platform for the management of technological systems

The innovative Logistics Credit Management Platform (LOCMAP) manages in an integrated way the whole technology system, reporting on the several logistics factors considered in ASPIRE purposes (static and dynamics parameters) and incentives access regulation for operators adopting sustainable behaviour.

LOCMAP Home Menu

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Tipo TAG:

Codice TAG:

Direttiva Euro:

Operatore inserimento:

Utente:

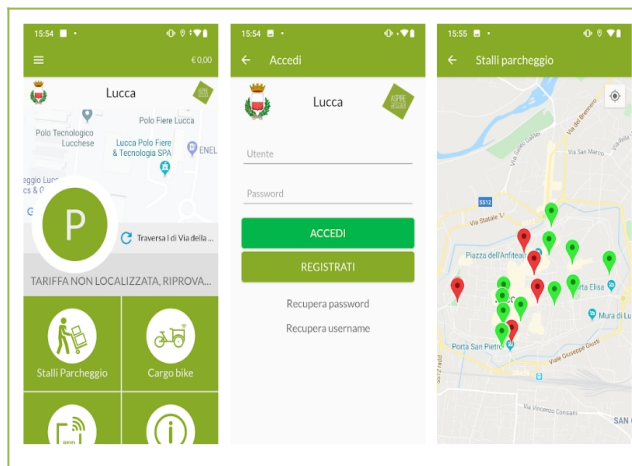
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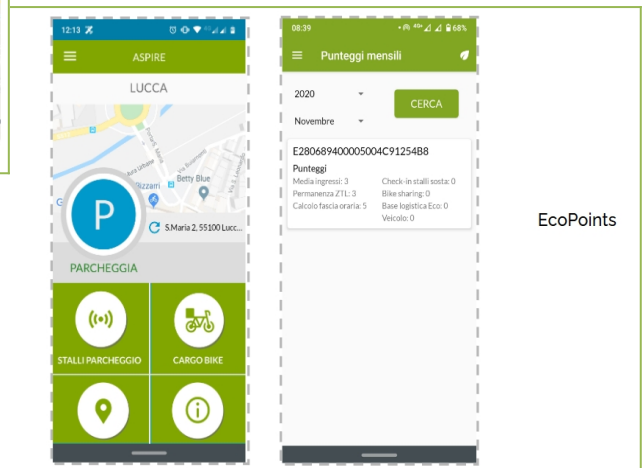
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Home



EcoPoints

The project involves the creation of a cloud platform for the integrated management and control of the technological systems installed by the LIFE ASPIRE project.

3.2 Installation of new transit monitoring technologies in the RTZ

New 24 UHF RFID antennas at the entrances and exits of the RTZ were installed during the project lifetime. The previous access control system to the RTZ - entrance passes with license plate recognition cameras -has been enhanced by the new RFID sensor system created through the LIFE ASPIRE project. The new system is capable of monitoring the entrances, exits and the time spent in the RTZ.



Example of RFID Gates in Lucca RTZ

3.3 Installation of an innovative system for the control of cargo loading / unloading areas.

The project has contributed with a significant improvement also to the management of the areas destined to the loading/unloading of the goods, dislocated inside of the historical centre of the city. The areas identified have been equipped with smart sensors installed under the road surface of each parking lots, which allow to detect the free or occupied status and to monitor the time spent by the operators in the parking bay.



3.4 Installation of three cargo-bike stations

The project realized three cargo-bike stations, each equipped with three cargo-bikes for last mile deliveries, to offer to the logistics operators the possibility of making small deliveries in the historic centre with **zero-emission vehicles** and to access the RTZ even beyond the time slots allowed for cars, increasing its Eco-points.



The services and measures implemented by the Life Aspire Project contribute to reduce air pollution in the target areas of the project, to reduce the negative effects of mobility processes in the urban area of Lucca, to change the mobility behaviour of logistic operators, as well as improving the organization and timing of loading and unloading goods in the historic centre.

The project successfully also demonstrates the technical and economic feasibility of the solutions and their transferability in similar contexts (small/medium-sized historic cities).

The project LIFE ASPIRE rewards operators who have achieved the highest number of ecopoints in accordance with the different parameters identified by the project and approved by City Council Resolution n. 242 of 29.10.2019.

The reward contributes to highlight the behaviour of freight transport operators more sustainable for the city, stressing their contribution to the decarbonisation of freight transport in the historic centre and the ecological transition path of the City of Lucca.

The awarding system and the innovative logistics services implemented with LIFE ASPIRE in Lucca, fostered the freight operators mind change to adopt more sustainable approaches in performing their activities and this reflected a significant increase in FEV vans entering the RTZ (up to 43/day). It also recorded an increased number of EURO5 and EURO6 accessing the RTZ (around +40%) and a significant reduction of EURO3 and EURO4 categories.

Considering the achieved pollutant emissions saving in the historic city centre (and surroundings) environment of Lucca, the ex-post can be summarized as follows:

Noxious gases and Particulates matter emission savings:
NOx: - 1.159 Kg/y
CO: -865 Kg/y
PM10: -266 Kg/y
PM2,5: -259 Kg/y
C6H6: -5,08 Kg/y
GH gases emission savings:
CO2: -151.062 Kg/y
N2O: -9,22 Kg/y
CO2eq: -154

Zadar and Stockholm applied a specific methodology of evaluations about possibility of replicability and transferability in their cities; specific measures to be implemented have been identified for each city and in the next years they have planned how to do this from legal and financial points of view.

4. SWOT Analysis for LIFE ASPIRE project

In the framework of the business case analysis conducted at the end of the project, a specific attention was given to the Strengths, Weakness, Opportunities and Threats discussed by the Consortium and defined in the following table as further future developments needed.

<p><u>STRENGTHS</u></p> <ul style="list-style-type: none"> - Coordination and management of the different logistics services - Realization of unique knowledge database on the urban freight distribution processes - Integration of the different urban digital solution and ICT infrastructure (UVAR) - Optimization of the logistics processes towards sustainable freight deliveries - Improvement of urban air quality by reducing the negative impacts of logistics services - Provision of different services (B2C, B2B, B2A) with respect the role of each involved actor - Make more efficient and integrated the supporting service as the cargo bike, access control and parking loads monitoring 	<p><u>WEAKNESSES</u></p> <ul style="list-style-type: none"> - Investment costs needed for the realisation of the digital platform - Operation costs, in any case notable also in medium-long term perspective. - Lack of specific skills within the Administration - Organization complexity for the management of the platform - Uncertainty of financial coverage of the costs, apart from the possible reduction of the external costs (like air pollution) - Need of agreement and continuous promotion of the "LOCMAP approach" among the involved freight transport operators - Flexibility of the incomes related to the access permits and reward criteria - Efforts for the involvement of the different socio-economics categories - Capacity and solidity of the digital solution/ICT system provider
<p><u>OPPORTUNITIES</u></p> <ul style="list-style-type: none"> - Increase of the political will towards sustainable transport policies in urban areas - Transition in progress at level of European policy and directive (i.e., UVAR) towards an access control and monitoring systems - Standardization policy for the freight distribution in urban areas at regional and national level - Internet 2.0 and new modalities for accessing and using the logistics services - Future extension to other urban areas and towns (starting from the neighbouring municipalities) - Electric mobility incentives 	<p><u>THREATS</u></p> <ul style="list-style-type: none"> - Lack of political consensus due to possible changes of town administration every electoral period - The continuation of the emergency period due to the COVID-19 in which the access to restricted traffic zone sometimes is made "free" - Lack of clear rules in the loading/unloading (parking) areas for what concerns the control and fine procedures - The incorporation of GDPR constraints and rules in the existing Access Control system

5. After-LIFE objectives, activities and methodology

The After-LIFE strategy will be mainly based on:

- a) continuing and maintaining the eco-sustainable technologies and services implemented in Lucca and pursuing the consolidation of results;
- b) monitoring activities;
- c) continuing and enhancing communication, dissemination and promotion activities.

5.1 Continuing the eco-sustainable services implemented in Lucca and pursuing the consolidation of results

The official integration of the LIFE ASPIRE policy awarding system and technologies in the new access regulation to the Lucca historic centre demonstrates the will to maintain the LIFE ASPIRE approach in the framework of the activities implemented by the Municipality concerning Sustainable Logistics/Mobility to improve air quality in the urban areas after project duration.

From the operative point of view, the Municipality puts in practice actions to maintain the installed technologies, systems and to extend their use to other user groups, beyond the logistics operators after project duration:

- all RTZ access permits are equipped with RFID tag. The Lucca City Council wanted to expand the project by making sure that RFID is delivered to every single permit of the historic centre, so it is already in force the new distribution of RFID permits for all vehicle categories, with a huge investment of money and resources in a new permit management system, able to dialogue with LOCMAP and to provide data for all vehicles with annual permit: this to finally allows a constant and continuous monitoring of what happens in the historic centre.
- the cargo bike sharing system opens also to other users, to allow a wider use, as strongly requested by commercial operators and some citizens. Lucca plans to evaluate the necessity to expand the sharing system with other stations in the next year;
- the acquisition of new permit management software solution that will enhance the LOCMAP potential, to easily interface with the RFID monitoring and credit policy, and the maintenance of the RFID UHF antennas network.

The Administration, with the approval of the new Implementation Plan for traffic in the historic centre, has approved that the implementation of the Plan itself takes into account the need to modernize and update the technologies installed with LIFE ASPIRE, maintaining an efficient system updated to changes of the RTZ. To this end, the allocation of specific financial resources in the municipal annual budget has been planned.

Zara and Stockholm committed to conduct and implement further technical-economic feasibility studies of the measures selected as transferable, as well as to seek further funding opportunities, yet defined and analysed during the project duration, according to their legislation and political commitment.

During the LIFE ASPIRE project activities, some of the measures/services demonstrated resulted to be very interesting for other cities and stakeholders. It is the case in particular of the cargo bike service which resulted very appealing for additional categories of users, other than those foreseen by the project plan. In addition, the selection of the most sustainable transport operators, resulted in the identification of the most eco-friendly ones (namely the "inspirers").

The awarding of the inspirers resulted to be an interesting practice for other cities and administrations as it contributes to the increase of the number of eco- friendly operators, by helping them in proceeding in their transition phase in order to contribute to the overall ecological transition of the community.

An example of this process can be found in the drafted "*LIFE ASPIRE Plan for replicability and transferability*" that could be proposed at different institutional levels, to guide the Entity/stakeholders to adopt the ASPIRE Approach.

This is a methodology proposal, based on the result of its application firstly in Zadar and Stockholm and that includes lessons learned from the comparison with the many institutions that have collaborated with the ASPIRE TSC and CSSF, in particular other Administrations, logistics operators, the Ministry and the Region, with the specification that the methodology foresees the need to be adapted to the specific context of replicability.

LIFE ASPIRE replicability and transferability plan is available to all interested stakeholders and will continue to seek opportunities for discussion, thanks to the continuous pursuit of the dissemination of results.

The project contributes also to the achievement of the objectives of some important policy documents of the cities of Lucca, Zadar and Stockholm (such as the Urban plan of sustainable mobility, new strategies plan for logistics in their historic centre, Air Quality Plan) and contributes to the objectives of the 2030 Agenda, in particular for goals n. 11, "*Sustainable Cities and Communities*".

5.2 Monitoring activities

The monitoring activities were devoted mainly to the definition of the criteria for the evaluation of LIFE ASPIRE measures and services, by means of a specific set of indicators yet for different categories of data. Data collection will continue to be automatically managed in the LOCMAP platform, related to the vehicles access/exit and stay within the RTZ. Moreover, information related to socio-economic aspects will be collected from the municipal offices, while for what concerns environmental data, the overall air quality level will be monitored according to the methodology defined in the project.

5.3 After Life Communication Plan: Continuing and enhancing communication, dissemination and promotion activities

For pilot and demonstration projects, the after-LIFE plan defines the strategy for the dissemination and communication of results after the end of the project.

The After-LIFE ASPIRE **Communication** strategy is mainly based on:

- a) updating the website for at least five years after the end of the project;
- b) dissemination of project results at institutional level;
- c) presentation of project results at each relevant occasion (conferences, workshops, etc.);
- d) relations with the Commission and Institutional Entities on any follow-up to the project.

Target Groups:

LIFE ASPIRE will focus its communication strategy on the following main relevant activities categories for the After-LIFE project communication:

- Stakeholders, logistics operators and categories representative (logistics roundtable, involvement in policy decision and consultation);
- Institutions at various levels (local, regional, national);
- Other Cities interested in the replicability/transferability process.

Details of the planned activities are provided in the following table:

Activities	HOW / WHAT	Target Groups	Costs	Partners involved
Updating the website for at least five years after the end of the project	Including any relevant update concerning project follow-up activities.	ALL	The budget for this activity is estimated around 3.500 €/year	Lucca Lucense
Dissemination of project results at institutional level	<ul style="list-style-type: none"> - Brochures, leaflets, video distribution - Layman's Report presentation and distribution - Press releases, publications, multimedia presentations - Information exchanges with other organisations engaged in LIFE ASPIRE related themes and issues - meetings with citizens or stakeholders - round tables with the relevant stakeholders 	ALL	The budget depends on the numbers of the events and participants; costs can be contained with online meetings and according to the Covid-19 pandemic situation	ALL the Consortium
Presentation of project results at each relevant occasion	<ul style="list-style-type: none"> - Personal contacts - Presentations of After-LIFE ASPIRE activities progress - Involvement in dissemination and exploitation of project results - Invitation to site visits - Local TV and radio communications <p>Among the several events of next years, the Consortium plans to participate to the 2022 European Mobility Week and to the 2022 EU Green Week, organizing specific onsite events and candidating the LIFE ASPIRE project to be presented in specific panel/discussion sessions.</p> <p>Furthermore, ASPIRE will be proposed to the relevant speaking occasion and events that each partners will join in the logistic, environment sustainability and air quality fields. For example LUCCA will present ASPIRE in some relevant workshops and dissemination events about environment sustainability and air quality, that is planning for year 2022 and 2023, according to the Agenda 2030 Lucca pathway and during other thematic events such as Ecomondo, ASVIS, GECO and Mobydixit.</p>	ALL	<p>An estimated budget of about 10.000 € is foreseen to be necessary for organization aspects, according to previous experience done during the project.</p> <p>Some costs could be limited in case of online meetings, according to the Covid-19 pandemic situation</p>	ALL
Relations with the Commission and Institutional Entities on any follow-up to the project.	<ul style="list-style-type: none"> - Participation to official LIFE Programme events - Personal contacts - Involvement in dissemination and exploitation of project results - Invitation to site visits 	Institutions at various levels (local, regional, national)	An estimated budget of about 2.000 € is foreseen to be necessary for organization aspects.	Lucca Lucense Memex Municipia

Events scheduled in 2022 to promote the ASPIRE Project:



#MobilityWeek



<https://mobilityweek.eu/>

EU
GREEN
WEEK

An initiative
of the  European
Commission

https://eu-green-week-2022_it



<https://www.mobydixit.it/>



<https://www.gecoexpo.com/>



<https://www.ecomondo.com>



<https://asvis.it/festival-dello-sviluppo-sostenibile>

5.4 Financial resources

All partners will contribute to the activities of the After-LIFE Plan in terms of human resources, in particular with regard to institutional activities and the dissemination of results, in particular in those organized at local or sectorial level, according to the commitments ongoing in force of the Consortium Agreement.

However, some activities will be specifically financed from the partners' budget resources. From a quantitative point of view, Lucca is the most involved beneficiary in the financial effort of the "After LIFE", considering all major costs related to the infrastructure maintenance and development.

The following table illustrates provisional funds and the estimated human resources that will be used for the activities of this document.

Activity	Financial Resources
Continuing the eco-sustainable services implemented in Lucca and pursuing the consolidation of results	
• Ordinary maintenance service of RFID antennas and smart parking sensors (per year)	8.000 €
• Cargo Bike customer care, maintenance service and management system (per year)	4.500 €
• LOCMAP maintenance fee (per year)	13.000 €
Monitoring activities	
• This activity implies only human resources of the partners involved	
Continuing and enhancing communication, dissemination and promotion activities	
• Website maintenance (per year)	3.500 €
• Dissemination of project results at institutional level	TBD
• Presentation of project results at relevant occasion/events	10.000 €
• Relations with the Commission and Institutional Entities on any follow-up to the project.	2.000 €

The Municipality of Lucca's City Council approved in its annual budget to allocate at least €25.500 for the year 2022, to be maintained for subsequent financial years with regular amount in its budget, to be allocated for the maintenance and funding of the systems.

Furthermore, the Municipality in its planning documents reserved also a special option, to assure specific extraordinary resources for special needs for implementation and development of the RTZ, when necessary.



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Project factsheet

Project no.:	LIFE16 ENV/IT/000004
Project Title:	LIFE ASPIRE Advanced logistics platform with road pricing and access criteria to improve urban environment and mobility of goods
Coordinating Beneficiary:	City of Lucca
Associated Beneficiary:	Lucense Scarl; Memex Srl; Municipia Spa Engineering Group; City of Stockholm; City of Zadar
Official website:	http://www.life-aspire.eu
Official promotional video:	https://vimeo.com/595846334 (Eng version) https://vimeo.com/595841356 (Ita version)
Start-End date:	1 st October 2017- 30 th September 2021
Total budget:	€1.865.799,00
Funding LIFE Programme:	€1.037.488,00
Location:	Italy (Lucca), Croatia (Zadar), Sweden (Stockholm)

