



D4.2 International collaboration – Liaison with other EU projects and initiatives

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Acronyms

Acronyms	Explanation
DT	Digital Twin
LL	Living Lab
MOOC	Massive Open Online Course

Executive Summary

This deliverable provides a comprehensive overview of the LEAD project activities in terms of its relationship with projects and initiatives funded by the European Commission, as well as with others of an international nature, in order to promote the exchange of knowledge, results, experiences and best practices.

In this sense, the project has promoted the exchange of knowledge, results, experiences and best practices via:

- Collaboration with Related Projects: LEAD established collaborations with other European and international projects addressing similar topics, especially with those belonging to the same call LC-MG1.10-2019 (SENATOR, ULaaDs), but also with other projects and initiatives (i.e. DUET, ICONET, HARMONY, Rotterdam Digital City Programme, Living-in.Eu initiative, European Space Agency: Earth Digital Twin). This has allowed the sharing of knowledge, experiences and best practices in the use of digital twins in urban logistics, thus promoting synergy and joint progress.
- Participation in International Networks and Programmes: LEAD joined international networks and platforms that focus on urban logistics or include urban logistics among their areas of practice (CIVITAS, ALICE-ETP, C40¹...). This provided opportunities to participate in events, workshops and conferences, where results and lessons learned were shared with a global audience.
- Active Dissemination and Communication: LEAD has worked on active dissemination of its results and knowledge through events, webinars and publications in renowned scientific and technical journals (TRA, Civitas Forum, ICTR, etc.). This allowed the international community to be kept informed of the project's progress and achievements.
- Exchange of Experts: The project has facilitated the exchange of experts, mainly through the participating cities and their own international relations (i.e. bilateral relations Madrid-Melbourne), as well as through the Massive Open Online Course (MOOC) that is available in the CIVITAS E-learning Centre. This has allowed and will allow LEAD project members to learn from other perspectives and approaches, as well as to share their own experiences and knowledge.

In summary, the LEAD project has managed to maintain a constant knowledge sharing activity with other international projects and initiatives through collaboration, networking, active dissemination and exchange of experts. These achievements contributed to the advancement of the field of digital twins in urban logistics and fostered further cooperation at the global level, most notably the almost constant relationship with ALICE-ETP (Alliance for Logistics Innovation through Collaboration in Europe) initiative.

As for the International Collaboration with China and the USA, these activities have mostly slowed down during most of the lifetime of the project since international travel was not possible due to COVID-19. In addition to this, the withdrawal from the project of the Shenzhen Pengeheng Electric

¹ Global network of mayors of the world's cities in action to confront the climate crisis

Taxi Co (SPT) has limited the exchange of information with China; however, this has not meant a significant impact on the expected outcomes.

In any case, LEAD has set out contacts with the [World Economic Forum's \(WEF\) Initiative on Global Digital Twin Cities](#). The initiative was setup by WEF and the China Academy of Information and Communication Technology (CAICT), together with key global stakeholders, to launch an initiative to make digital twin technology accessible to the public, promote social equity and inclusiveness, help cities achieve digital and low-carbon transformation, and jointly shape the future of digital twin city development. As a result of this exchange, LEAD is currently working on a contribution to their [Insight Report on Digital Twin Cities: Framework and Global Practices](#).

Finally, the Urban Logistics Innovation Day (LEAD Final Conference), that took place in Brussels on September 26, meant the culmination of the project's international activity.

1 Introduction

1.1 Scope and objectives

In D4.1 - Stakeholders Engagement Dissemination Plan- LEAD laid out the basis for a clustering plan with associated activities, on different levels, both with cooperation with other EU-funded projects, but also through related initiatives and organisations.

This deliverable provides an updated and final version of the activities carried out related to the international collaboration and cooperation with other projects and initiatives throughout LEAD's implementation.

1.2 How does this deliverable relate to other deliverables?

This deliverable complements the information of D4.1 (Stakeholders Engagement Dissemination Plan), as well as D4.3 and D4.4 (Communication and outreach activities, Period 1 and 2). The actions explained in this document cannot be dissociated from more general communication, dissemination and engagement activities, and as such, overlap with activities also described in **D4.4: Communication and Outreach Activities and LEAD website: Period 2** and **D4.5: Advisory Board, Transferability platform and Capacity Building Activities**.

1.3 Structure of the document

The document provides an overall vision of all the international collaboration and different initiatives and cooperation carried out between LEAD and other entities, organisations and projects, including the description and type of interaction.

2 Liaison with EU projects, Initiatives and International Cooperation

The objective of this task was to promote the exchange of results, sharing knowledge, experience and best practices with other EU projects, initiatives and also international organisations/entities outside of the EU (see section 3).

The departure point for this activity was to foster privileged cooperation with other **projects funded under the LC-MG1.10-2019 call**, namely [SENATOR](#) and [ULaaDS](#), the three of them participating at CIVITAS ELEVATE too. Bearing this in mind, from the outset of the project, LEAD established contact with them holding several meetings to explore how they could benefit from each other, for exchange of knowledge and cross-promotion. A relation of proximity was developed and nurtured with the so-called “sister” projects throughout project implementation.

A second step behind the cooperation logic, was to create synergies with other relevant initiatives and projects working on Digital Twins and/or Urban Freight (i.e. [DUET](#), [ICONET](#), [HARMONY](#), [Rotterdam Digital City Programme](#), [Living-in.Eu initiative](#), European Space Agency: [Earth Digital Twin](#)).

The task also had the goal to foster International Collaboration with China and the USA.

The following sections provide additional information on these activities.

2.1 Cooperation with SENATOR and UlaaDS

The main activities developed with SENATOR and UlaaDS were:

- Regular technical meetings to share project related developments,
- Contact between communication teams for cross-promotion and preparation of common communication materials,
- Preparation and organisation of common events (i.e., CIVITAS Forum, ICTR, TRA 2023 etc.),
- Exploring additional synergies for LEAD’s Capacity Building Activities.



Figure 1: Example of common communication visuals for clustered projects

Below we provide some information on the main events co-organised by the “ sister projects”.

ICTR 2021: International Conference on Transport Research: Hybrid/Rhodes, Greece

ICTR 2021, organised in **cooperation with SENATOR, UlaaDs and CERTH**. The workshop showcased the experience of LEAD and its sister projects (**ULaaDS** and **SENATOR**) and the **Thessaloniki Smart Mobility Living Lab**. All of the partners involved developed specific tools to address the challenges affecting on-demand city logistics, through collaborative activities that are developed in Living Labs.



Figure 2: LEAD session at ICTR 2021

CIVITAS Forum 2021, Hybrid/Aachen, Germany

LEAD participated at CIVITAS Forum 2021, with a **presentation** by Carlos Mateo (see Figure 3) from EMT during the Urban Logistics session. Further, the project also had a **common stand in Aachen (and online)** with **SENATOR** and **UlaaDs** projects.



Figure 3: LEAD at CIVITAS Forum 2021

Transport Research Arena 2022, Lisbon, Portugal

LEAD organised an invited session at TRA 2022, in cooperation with UlaaDs (and also [MOVE21](#)), with the title **“Multimodal hubs and last-mile delivery: unlocking the potential to green urban logistics”**.

The session aimed to better understand the role that multimodal hubs cover in the urban environment, as they provide an intelligent point in the transport network that seamlessly integrates different modes of transport with passenger and logistics flows. The line-up of speakers was:

- Geiske Bouma from TNO;
- Maria Schnurr and Cilli Sobiech from RISE;
- Beatriz Royo from Zaragoza Logistics Centre
- Natalia Sobrino Vazquez from Polytechnic University of Madrid
- Michael Glotz-Richter from the City of Bremen

The session was moderated by Yanying Li (ALICE-ETP) and Raffaele Vergnani (POLIS).

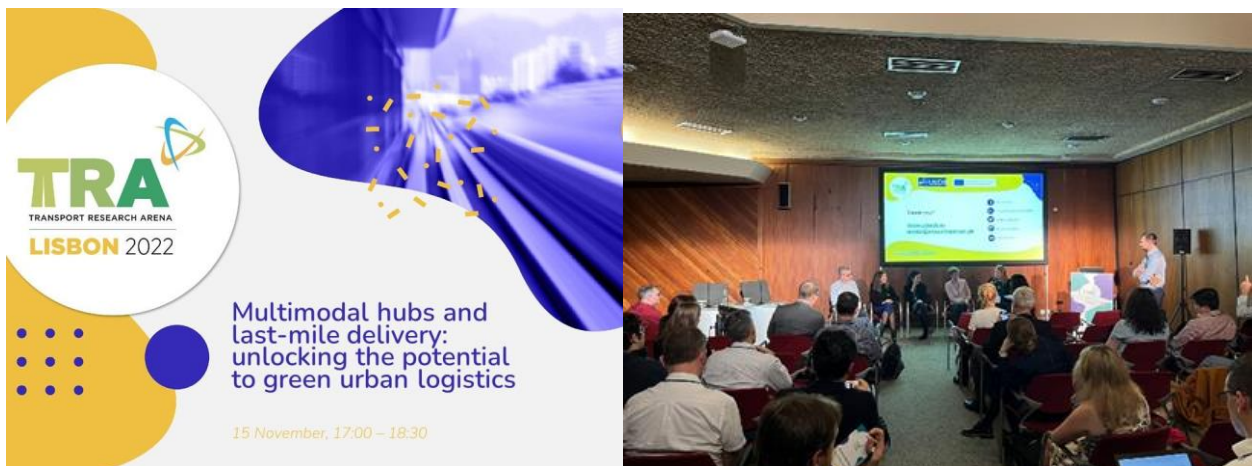


Figure 4: LEAD at TRA 2022

Urban Logistics Innovation Day (LEAD Final Conference), Brussels, Belgium

In September 26th, 2023, LEAD, together with XXXX will be featured in several break-out sessions of the Urban Logistics Innovation Day. This event, which was also the LEAD Final Conference has gathered more than 150 participants to discuss about XXXXXXXX. More information about this event is provided in the section “Cooperation with ALICE-ETP”.

<picture>

2.2 Cooperation with CIVITAS Initiative



LEAD is a CIVITAS project, which means that we have incorporated the CIVITAS corporate design (i.e. logo CIVITAS acronym). A LEAD dedicated page has been created on the CIVITAS website [here](#), where project outputs are uploaded regularly.

Currently, the necessary adaptations have been made to the materials of the LEAD Massive Open Online Course so that it is available via the [CIVITAS E-learning Centre](#)..

LEAD has actively participated to the CIVITAS organised Dissemination Managers Meetings, as well as benefited from evaluation support from the Coordination and Support Action. In addition to benefiting of CIVITAS' wide network for communication (with LEAD related news published in their different channels), the project has actively participated in related events such as the CIVITAS Forum and the Urban Mobility Days.

LEAD, as well as SENATOR and ULaaDs, has participated at CIVITAS ELEVATE too.

2.3 Cooperation with ALICE-ETP

The activities in cooperation with ALICE-ETP was a priority from the start, considering their strategic importance in the sector, establishing an open communication path with business stakeholders. The cooperation focused on:

- LEAD joined ALICE's Project Liaison Programme with Research and Innovation Projects and Initiatives,
- Organisation of common events and workshops,
- Promotion of LEAD activities and outputs via ALICE's channels,
- Sharing of LEAD outputs with ALICE-ETP members.

Below we provide some information on the main activities co-organised with ALICE-ETP.

POLIS-ALICE-ETP webinar series: Tackling the Urban Freight Challenge: Online



Figure 5: POLIS-ALICE joint series webinars

LEAD participated to the second webinar in the POLIS-ALICE joint series on urban freight, exploring cooperation and new business models.

Cooperation between suppliers, customers and the public administration is essential to implement new business models, effective both for cities and industry players. More sustainable urban logistics can be achieved with reduced costs through smart consolidation of logistics operations. The main concept of Collaborative Urban Logistics is to share resources, infrastructure, and transportation to perform last-mile delivery in the urban area. However, there are many challenges in Collaborative Urban Logistics, e.g. service level, service contract design, contract performance etc.

Urban consolidation centres (UCC's) are usually introduced by local governments to reduce the number of motorised freight vehicles entering their cities. Freight flows from outside the city are consolidated with the objective to bundle inner-city transportation activities to reduce the volume of distribution activities in the city. They reduce traffic and congestion around sites in urban and peri-urban areas, thus noise and overall emissions from the transport sector.

The second appointment of the POLIS ALICE 2022 webinar series gave the floor to the CULT initiative and the EU-funded project LEAD, to better understand the experience and applications implemented in the cities of Antwerp and Madrid.

Agenda

- 13:00- Welcome
- 13:05- ALICE members and their partners have launched the 1st Collaborative Urban Logistics and Transport (CULT) in Antwerp.
- 13:30- LEAD EU-funded project explores an Urban Consolidation Centre (UCC) within the Low Emissions Zone in Madrid, using electric delivery vans

- 14:00- EIT Urban Mobility Call for Proposals for Factory: #ChallengeMyCity – Madrid, Challenge A: Logistics hub for green last-mile delivery
- 14:10- Discussion

ALICE-ETP stand at [Transport Research Arena 2022](#), Lisbon, Portugal

LEAD actively participated to [Transport Research Arena 2022](#) with a spot at the ALICE-ETP exhibition area. LEAD also cooperated with ALICE-ETP in the organisation of invited session (see section Cooperation with SENATOR and UlaaDS).



Figure 6: LEAD at ALICE-ETP stand at TRA 2022

The ABCs of Digital Twins for Urban Freight: the LEAD project so far: Webinar

On March 13th, 2023, as LEAD drew closer to its conclusion, it organised a webinar to share its main findings on Digital Twin's potential to respond to the serious strain put on last-mile delivery systems by on-demand logistics, counting with 24 participants.

Participation was possible by invitation only, but registration was mandatory. The webinar was organised with the **LEAD Advisory Board and Transferability Platform members as the core group**. However, it was decided to also open it to members of the [ALICE-ETP Digital Twin Knowledge Platform Group](#), as well as members of [the POLIS Working Group on Urban Freight](#).

The agenda was as follows:

- 14:00 – 14:05 Welcome, Claudia Ribeiro, POLIS
- 14:05 – 14:20 Quick recap of LEAD, Ioanna Fergadiotou, INLECOM
- 14:20 – 14:35 Towards a Digital Twin Framework for Adaptive Last Mile City Logistics, Sebastian Hörl – IRT SystemX,
- 14:35 – 14:55 The LEAD Digital Twin Platform, Dimitra Politaki, INLECOM
- 14:55 – 15:15 Q&A and discussion
- 15:15: END

Additional information about this event will be shared in D4.5 Advisory Board, Transferability platform and Capacity building Activities.

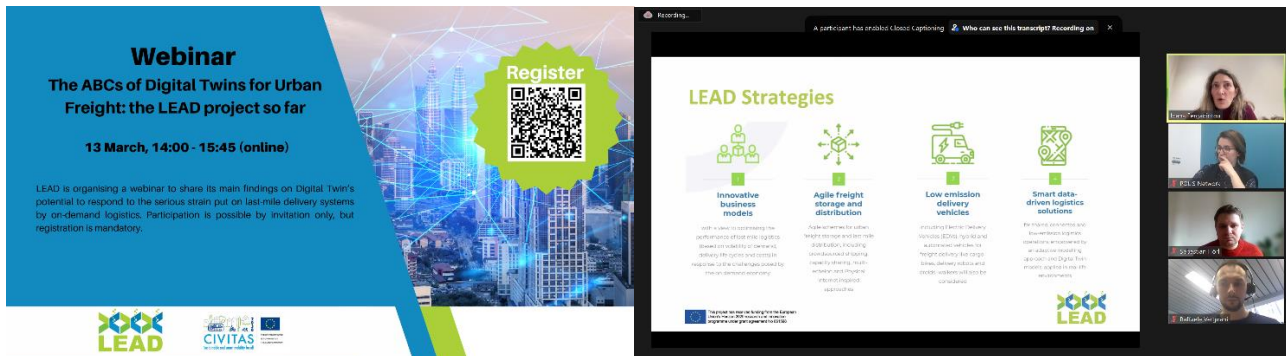


Figure 7: LEAD webinar: The ABCs of Digital Twins for Urban Freight

Urban Logistics Innovation Day (LEAD Final Conference), Brussels, Belgium

This event aimed to bring together pioneers and practitioners of innovation in the urban logistics sector. By fostering connections among ongoing innovative projects and facilitating dialogue between the public and private sectors, the idea was to drive improvements in sustainability. The event was organised on September 26th, 2023 as the final conference of the LEAD project. In collaboration with ALICE-ETP and POLIS, a multitude of innovative solutions from various urban logistics projects were showcased. The LEAD project also presented live demonstrations of their digital innovative solutions for Digital Twins and Urban Logistics planning.

The event counted with 101 participants. Among these participants, featured 9 representatives from the LEAD AB and LEAD TP, namely from IKEA, the Norwegian Public Roads Administration, LIST, the borough of Southwark, and the cities of Leuven, Bremen, and Hasselt². Additional information about the LEAD Final Conference – including agenda – is included in Deliverable 4.4: Communication and Outreach Activities and LEAD website Period 2.

² Additional information on travel covered by LEAD for Transferability Platform and Advisory Board members can be found in D4.5 Advisory Board, Transferability platform and Capacity Building Activities



Figure 8: Urban Logistics Innovation Day

2.4 Cooperation with Living-in.EU

LEAD established an open line of communication with the [Living-in.EU initiative](#): an initiative bringing for the digital transformation for European cities and citizens.

The cooperation has mostly focused on the organisation of common events. For example, LEAD partners have acted as discussion facilitators in events organised by the initiative. The main activity was the organisation of the: workshop “Local Digital Twins: forging the cities of the future at the European Week of Regions and cities 2021. LEAD also established a close connection with the European Commission’s DG Connect by cooperating with this initiative.

[European Week of Regions and Cities 2021](#), in cooperation with the European Commission (DG Connect), DUET project, EnOLL and the Association of Turkish Municipalities: online event.

The workshop explored (i) what Local Digital Twins are; (ii) how both small and medium-sized and larger cities can benefit from them; (iii) what steps are needed for the planning, design, and implementation of Digital Twins in cities; (iv) how Capacity Building can empower cities in this endeavour and (v) what the main challenges and potential are for the implementation of Digital Twins. It welcomed some 85 participants.



Figure 9: Local Digital Twins: Forging the Cities of Tomorrow

LEAD Capacity Building activities and results will feed into the further development of the [Living-in.EU](#) community, as they will also be included in their tool inventory.

2.5 International Cooperation with China and USA

As for the International Collaboration with China and the USA, these activities have mostly slowed down during most of the lifetime of the project since international travel was not possible due to COVID-19. The Shenzhen Pengeheng Electric Taxi Co (SPT) is no longer a full partner of the consortium which had an impact on this task.

In any case, LEAD set out contacts with the [World Economic Forum's \(WEF\) Initiative on Global Digital Twin Cities](#). The initiative was setup by WEF and the China Academy of Information and Communication Technology (CAICT), together with key global stakeholders, to launch an initiative to make digital twin technology accessible to the public, promote social equity and inclusiveness, help cities achieve digital and low-carbon transformation, and jointly shape the future of digital twin city development. As a result of this exchange, LEAD is currently working on a contribution to their [Insight Report on Digital Twin Cities: Framework and Global Practices](#).

LEAD connected with [C40](#) – global network of mayors of the world's cities in action to confront the climate crisis – for their contribution to the LEAD Final Conference, as well to reach out to their cities for participation in the event.

LEAD will be featured in an upcoming e-course included in the [SOLUTIONSplus Global E-Learning Programme](#) focusing on e-freight (first semester of 2024). SOLUTIONSplus is an international cooperation initiative (InCo flagship H2020 project) aimed at enabling transformational change towards sustainable urban mobility through innovative and integrated electric mobility solutions in Europe, Asia, Africa and Latin America.

Further, between March 4th and 12th, EMT Madrid, partner of the project, together with the support of Madrid City Council, participated in a study tour in Australia organised by IURC (International Urban and Regional Cooperation programme³), with the city of Melbourne, in which LEAD project and the use of Digital Twins was of high interest in the bilateral discussions.

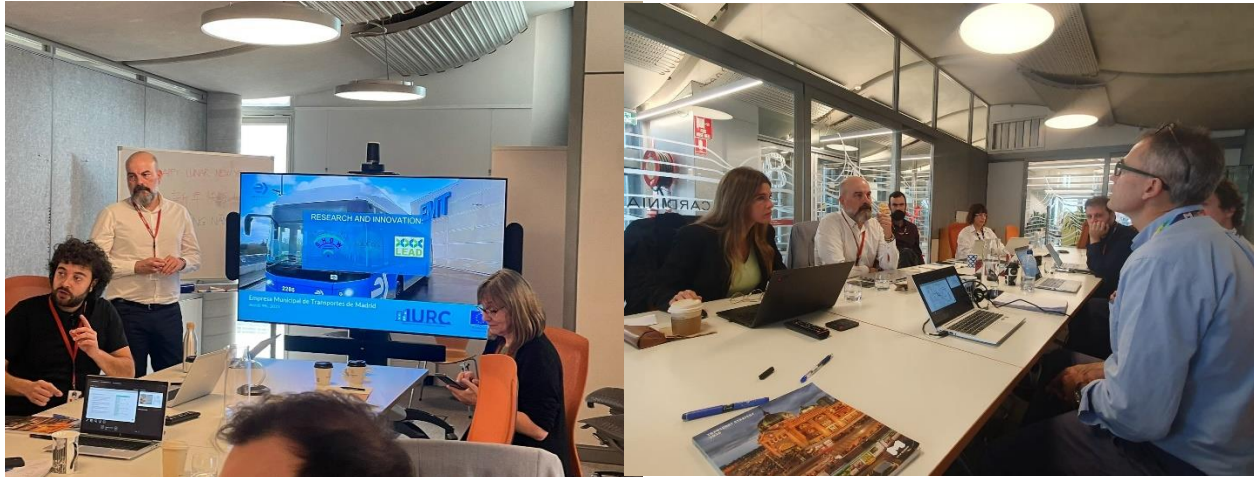


Figure 10. EMT Madrid meeting with Melbourne city officials

This type of activity continued throughout project implementation, whenever it fitted LEAD's and the mentioned entities' objectives. As explained throughout the deliverable, several of these initial ideas of cooperation have already materialised (i.e., organisation of common events, stands, exchange of technical information, etc.)

2.6 Others

Some additional interactions with relevant initiatives and projects are worth mentioning, namely:

- [HIDALGO, URBANAGE, ICONET, PRECCINT, Interreg ST4W/IW-NET, SPHERE](#): Knowledge transfer collaboration,
- [HARMONY](#): Sharing of technical inputs. Specifically, TU DELFT worked to jointly develop a crowd shipping case study to be applied in MASS-GT.
- [DUET](#): Cooperation in the organisation of common events (i.e., workshop at EWRC), sharing of technical inputs (participation in Advisory Board), and exploring additional synergies for LEAD's Capacity Building Activities
- [European Space Agency](#): Exploratory conversation schedule to learn more about the agency's actions on Digital Twins and potential for cooperation,
- [EIT Urban Mobility](#), [ECOLOGISTICS](#) and [European Network of Living Labs](#): Exploring synergies for LEAD's Capacity Building Activities. As a matter of fact, Madrid's Living Lab has been selected as a European Best Practice in Sustainable Urban Logistics by EIT Urban Mobility.

³ <https://www.iurc.eu/>

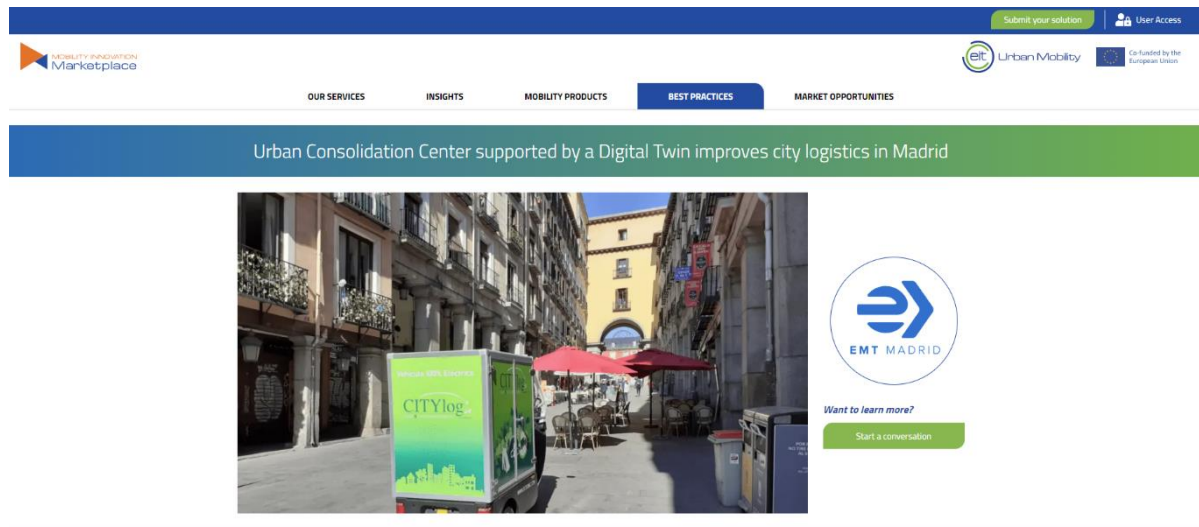


Figure 11. Madrid's Living Lab as a European Best Practice in Sustainable Urban Logistics by EIT Urban Mobility

- [Union of Turkish Municipalities](#): Organisation of common events: workshop “Local Digital Twins: forging the cities of the future at the European Week of Regions and cities 2021.

Further, different partners (POLIS, EMT, INLECOM, SONAE, ZLC, UPM) have actively engaged in different exchanges with a wide array of projects and initiatives, mainly to fully explore synergies related to the topics of Urban Freight and Digital Twins. These exchanges mostly focused on the exchange of technical information, cross-promotion activities and exploring the potential for synergies for capacity building actions.

3 Conclusion

In conclusion, the project has achieved the established objectives in terms of international collaboration, with special relevance at the European level, in which collaboration with other similar projects and initiatives has been very active and constant.

Unfortunately, the COVID pandemic has limited international collaboration beyond European borders, although efforts have been maintained. In the particular case of China, the withdrawal from the project of the Shenzhen Pengeheng Electric Taxi Co (SPT) has limited the exchange of information with this country; however, this has not meant a significant impact on the expected outcomes.

Regarding the US, LEAD set out contacts with the [World Economic Forum's \(WEF\) Initiative on Global Digital Twin Cities](#). As a result of this exchange, LEAD is currently working on a contribution to their [Insight Report on Digital Twin Cities: Framework and Global Practices](#).

These outcomes are expected to keep growing in the future, as the LEAD Massive Open Online Course is available via the [CIVITAS E-learning Centre](#) as well as other LEAD outputs will be freely available for usage (i.e. LEAD Platform), and commercial applications are being explored (i.e. . Sustainable City Logistics Evaluation Platform).