

Action Plan for measure replicability in urban logistics

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In 2021 the European Commission selected 100 cities to first launch innovation pathways towards climate neutrality by 2030 (EUCOMM, 2023), and secondly act as ecosystems of experimentation and innovation to help all European cities tackle the green transition and become climate neutral by 2050 (OECD, 2023). The actions will cover mobility, energy efficiency and urban planning, basing their effectiveness on the replicability of the chosen measures.

Rome is among these 100 cities, and is, thus, the subject of several ongoing or hopefully future projects that envisage measures for the rapid achievement of a more sustainable mobility to create more liveable and accessible places for people and goods, that would be better dealt with together (Dabanc, 2011). For example, following the logic of the so-called 15-minute city - with which Moreno (2016) preconizes a drastic reduction in the number of trips made by citizens for both work and leisure purposes, thanks to the spread of communication technologies (Caragliu, 2022) - intermodal and inter-connected micro hubs are planned in the city of Rome.

In particular, the EU-funded MOVE21 project, which aims at transforming the involved cities and their surroundings into smart zero emissions nodes for both passenger and freight mobility, thus contributing to achieve the 30% reduction of transport-related emissions by 2030, among the several transport-related innovations set up, include different types of mobility hubs. They host integrated transport services, including ancillary ones such as: PUDOs points, cargo-bike assistance and parking, crowd-shipping, shared use of public transport for people and goods. They share spaces and services among different activities and users (citizens, transport operators, retailers). They are managed according to new

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business and governance models. They can be greenfield (built from scratch) or brownfield (located at existing transport nodes, such as public transport stations or parking areas),

The solutions adopted for configuring the hubs will be co-designed, shared, and evaluated by the 6 cities of 4 different countries (Norway, Sweden, Germany, and Italy) participating in the project; in particular they have been divided in 3 Living Lab Cities (Oslo, Gotheborg, Hamburg) and 3 replicator cities (Munich, Bologna, Roma). Each of these cities must replicate at least three measures that have been implemented by the others, after highlighting a number of elements of possible criticality, as well as the solutions envisaged to overcome them. For this purpose, each city was involved in a multi-stage process.

In the first phase, each city was asked to describe some of the solutions adopted or planned in the short term to rationalise urban logistics through an analytical framework called logbook, in order to go into detail on some specific aspects.

In the second phase, after consulting the logbooks of the other cities, each city chose a certain number of measures to replicate on its territory (from a minimum of one measure for living labs to a maximum of three measures for replicators).

Following this phase, for example, Rome decided to replicate the three measures listed in column 1, borrowing them from the three cities listed in column 2.

Table 1. Rome replication activities in MOVE21 project

SOLUTION	CITY
<i>1.Smart Bicycle parking systems at local public transport stops</i>	Gothenburg (SW)
<i>2.Restrictions on access to the LTZ based on vehicle fuel</i>	Oslo (NO)
<i>3.Micro-Hub configuration guidelines</i>	Bologna (IT)

In order to allow full accessibility of goods and people, but at the same time guarantee a high quality of life for the inhabitants and the preservation of the historical and cultural heritage of the city, the city of Rome is constantly striving to find new solutions. At present, the following interventions are implemented, according to the replication activities, in the urban logistics field:

1. Extension of the Limited Traffic Zone (LTZ), supported by a system of rules and incentives implemented by the Administration;
2. Setting up a hub for passengers and logistics mobility in Trastevere Area (Flavio Biondo square);
3. Adaptation for metro stations with smart bicycle parking facilities and parcel lockers shared by several logistic operators.

While with regard to the first measure there are many concerns at the municipal scale due to the high degree of (not unexpected) dissent from the citizenry, for the hub planning or improvement initiatives, several details are available.

As for the second intervention, the central area of the square inside the tram tracks will be dedicated to public transport by road with the construction of pavements and shelters and the reorganisation of the taxi rank. For the safety of pedestrians, a wide passageway will be created for access to the bus platforms and the Trastevere railway station, which overlooks

the square itself. The adjacent pavements will be widened and green areas, pedestrian spaces and bicycle racks will be added on one side, while on the other side there will be areas for loading and unloading goods, electric vehicle charging, car sharing and parking for the disabled.

Concerning the third measure, the Municipality of Rome and ATAC - Rome's public LPT company – foster the delivery via lockers at the metro stops within the city, which increases customer services within the public transport infrastructure, making metro stations increasingly strategic nodes for city mobility while at the same time reducing the number of B2C delivery vehicles on city streets.

The initiative is part of the broader Sulp (Sustainable Urban Logistics Plan) logistics plan that, following the indications provided by the section on the rationalisation of urban logistics included in the PUMS, RSM is working on and which must be approved by the City Council in 2023. The new lockers are already active in 10 ATAC metro stations.

In addition, Rome Council Resolution No. 259/2020 identified and financed the construction of 40 interchanges between bicycles and public transport. The aim is to encourage the use of bicycles to travel the 'first mile' from/to home to the metro station, parking them in a safe place and opening the possibility also for delivery operations.

Bike boxes' are the basic elements of the bicycle parking system. The user can park his or her bike inside a closed box, which will open at the user's request via the app, close again with the bike inside, and reopen only at the user's request, via the app, for pick-up, leaving also the possibility for online checks. The system will be connected to the data network to receive commands from the web server and send its status in real time via a secure connection.

All three of these measures, which are in the process of being completed or implemented, will be enriched by the comparison between the city of Rome and the consortium cities hosting living labs that have already adopted these measures (see Table 1).

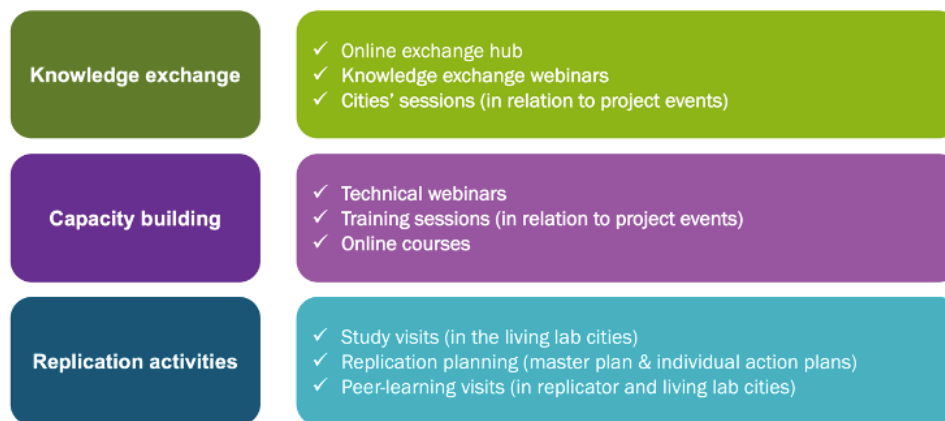
The replication plan, thus, intends to increase and disseminate the impact of the MOVE21 project while setting up two-way knowledge exchange and establishing a community of practice in which the six cities do participate.

In relation to the duration of the project, which started in May 2021 and will end in April 2025, one document has already been published at the moment (D7.1 - Capacity Building and Replication Master Plan) and another will be published shortly (D7.2 - Replication action plans for Oslo, Gothenburg, Hamburg, Munich, Bologna and Rome) concerning the preliminary and theoretical issue of replicability.

The first one provides the general framework for capacity building and replication activities, focusing on the replication approach and the extensive knowledge exchange among partners (Figure 1).

It also outlines challenges, learning needs, and replication interests within the cities.

Figura 1. Activity Structure in MOVE21



Source: MOVE21_Deliverable 7.1 (wip)

The second one, details the city specific plans for replication of selected measures.

Given these premises, this article describes the various phases of replication approach construction within the project, focusing in particular on the need to highlight similarities and differences among cities in the application of the measure that can, once the critical issues of replicability have been identified, be overcome.

Parole Chiave: replicability, urban logistics, microhubs, multimodal hubs, cargo bike schemes

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