



Proyecto M4G

Metro For Goods



Current Problem:

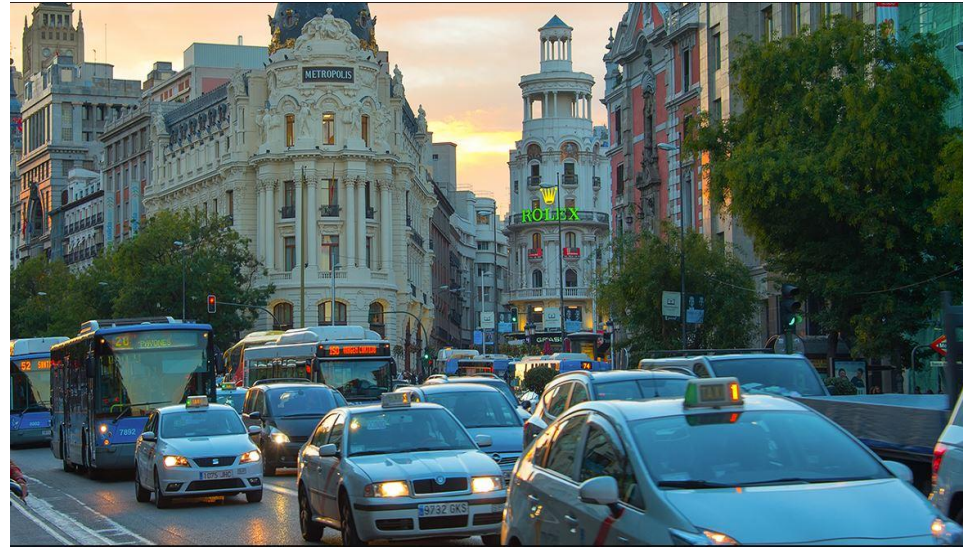
Urban freight transport already accounts for 38% of total traffic congestion in Madrid, and it is expected to rise to 47% by 2025

- **E-commerce Model is Overwhelmed:**

The growth of online shopping cannot be sustained by simply increasing the number of delivery vehicles.

- **Madrid Low Emission Zone:** In the coming years, two out of every three vehicles will be banned from circulating in urban areas affected by this new regulation.

- **Urban Freight Distribution requires a new delivery model:** that effectively addresses the challenges outlined



800.000 parcels / day



E-COMMERCE

1 - Online
2 - Commerce
3 - Retail
4 - Marketplace
5 - Store
6 - Logistics
7 - Post
8 - Courier services

If 4% is transported
by Metro



Remove 350 delivery
vans from the city
every day



Reduce 35.000
Km/day of traffic
removed from
Madrid's road



€5 million /years in
externalities saving

Key Assumptions of the Project

- **No disruption to Metro's current passenger service:**

There is no mixing of passengers and parcels on the same trains, and train frequencies for passengers remain unchanged. Operate during off-peak hours

- **Reuse of existing resources:**

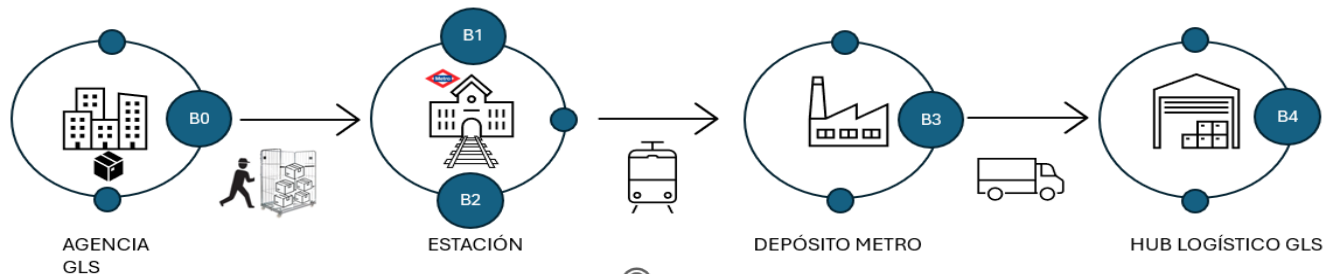
The trains used outside of service hours are the same ones operated for passengers during the day. Intermediate storage areas located in stations will serve as urban microhubs for parcel distribution.

- **Non-exclusive public service:**

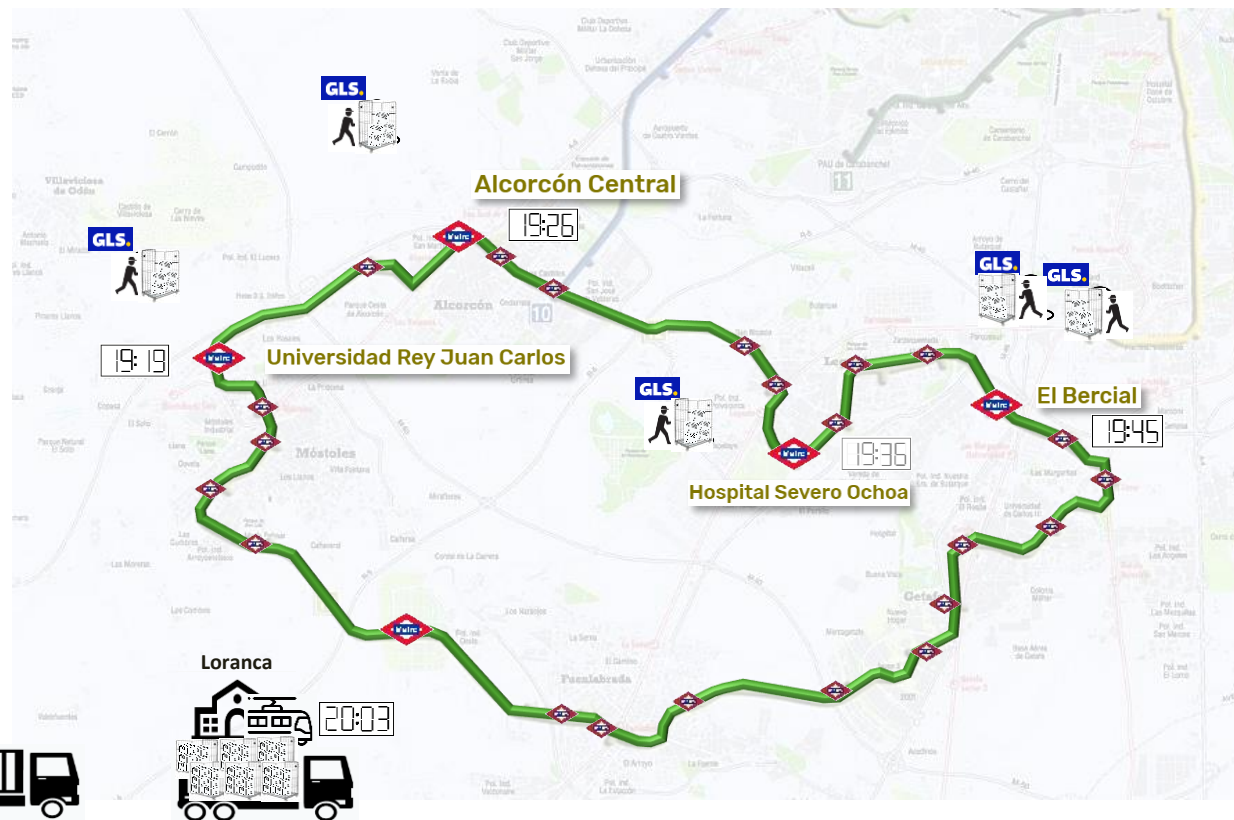
The system will be available to all logistics companies, which can use it simultaneously by paying a fee proportional to the service provided



M4G Model: METROSUR Pilot



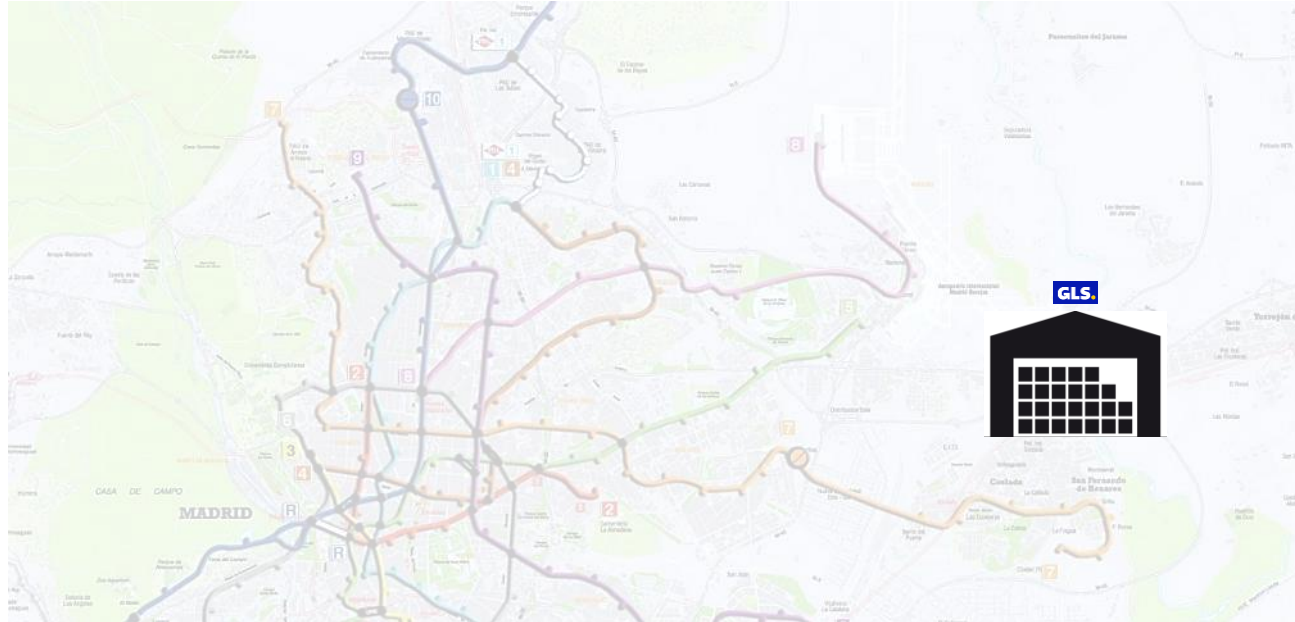
M4G Model: METROSUR Pilot



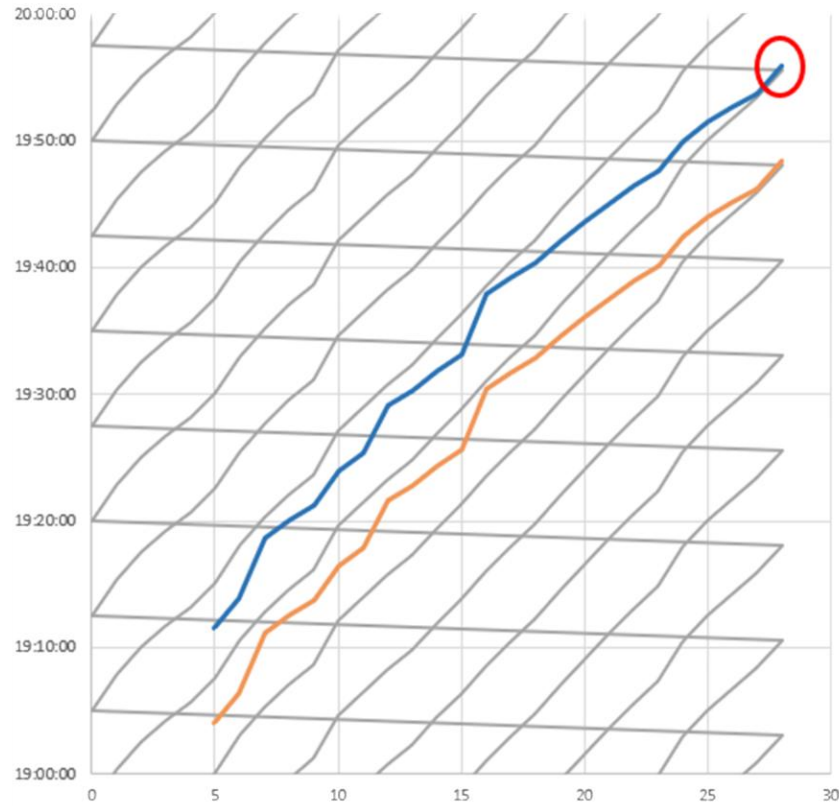
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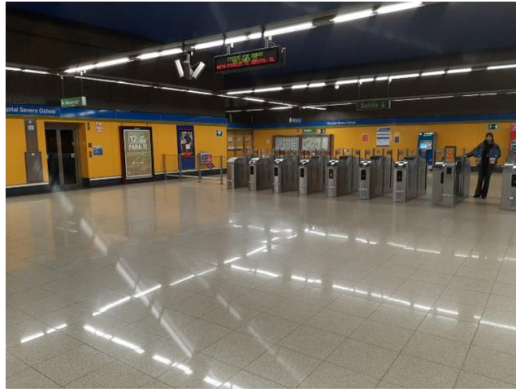
M4G Model: METROSUR Pilot



Adjustment to passenger train schedule without altering passenger service



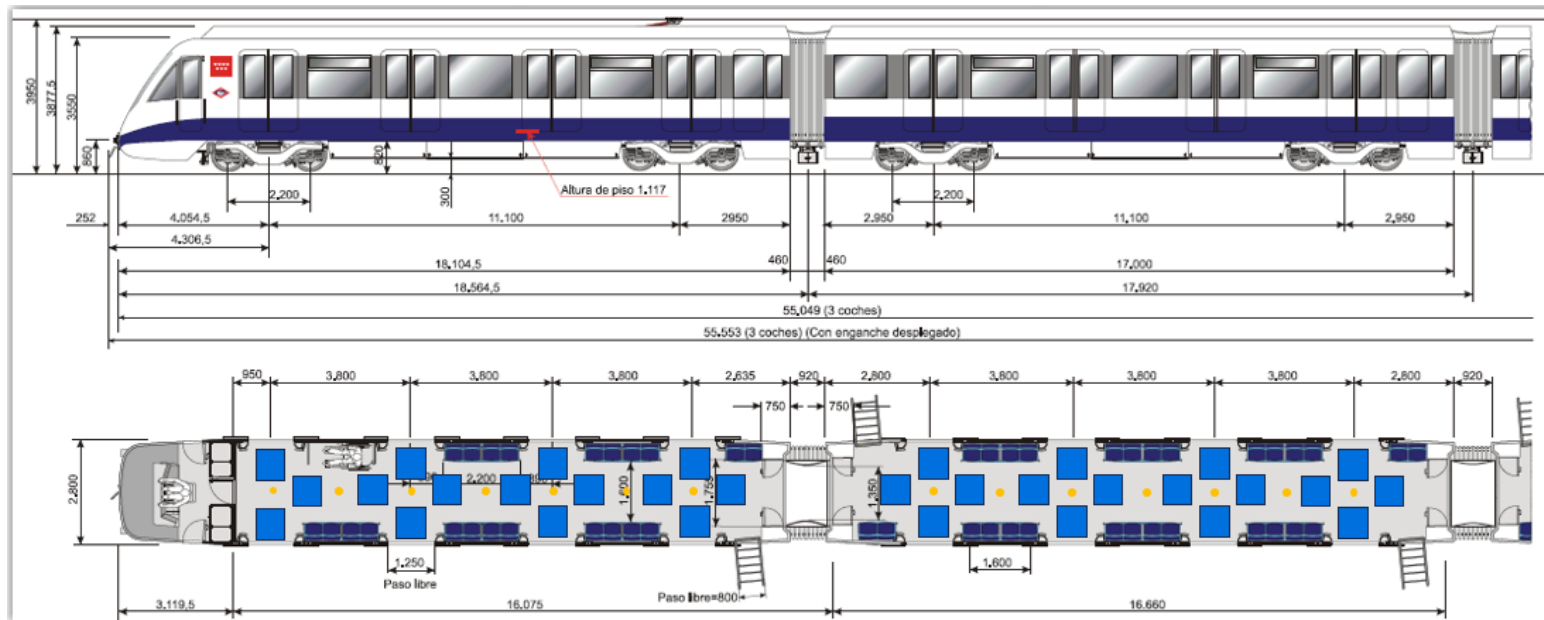
Station Example: Hospital Severo Ochoa



Loranca Depot: Transfer of goods from train to truck

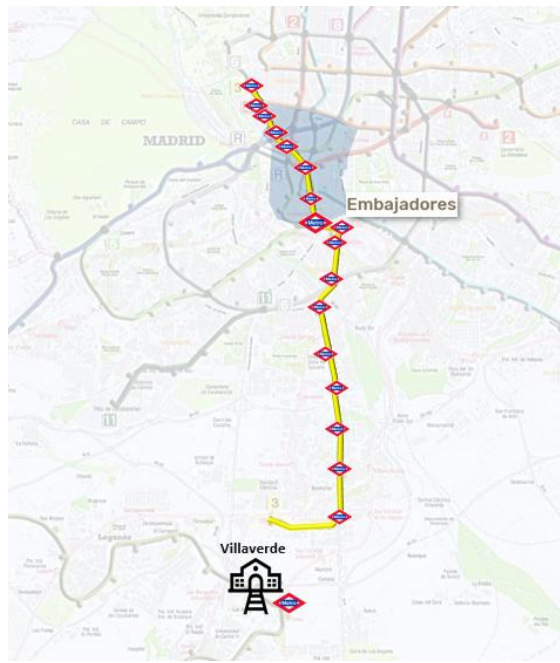
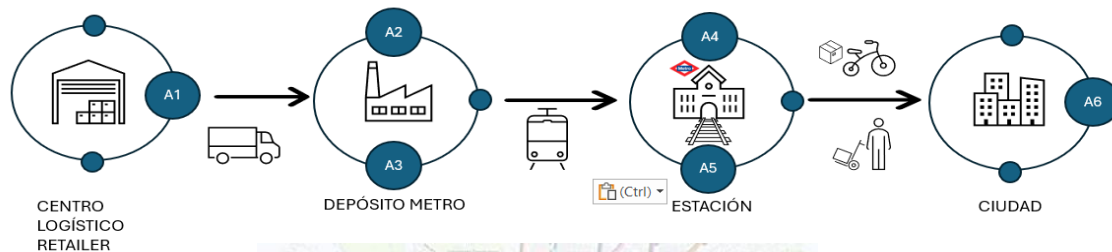


Vehicles and Handling Units : 8000 Series Train + Rolling Cages

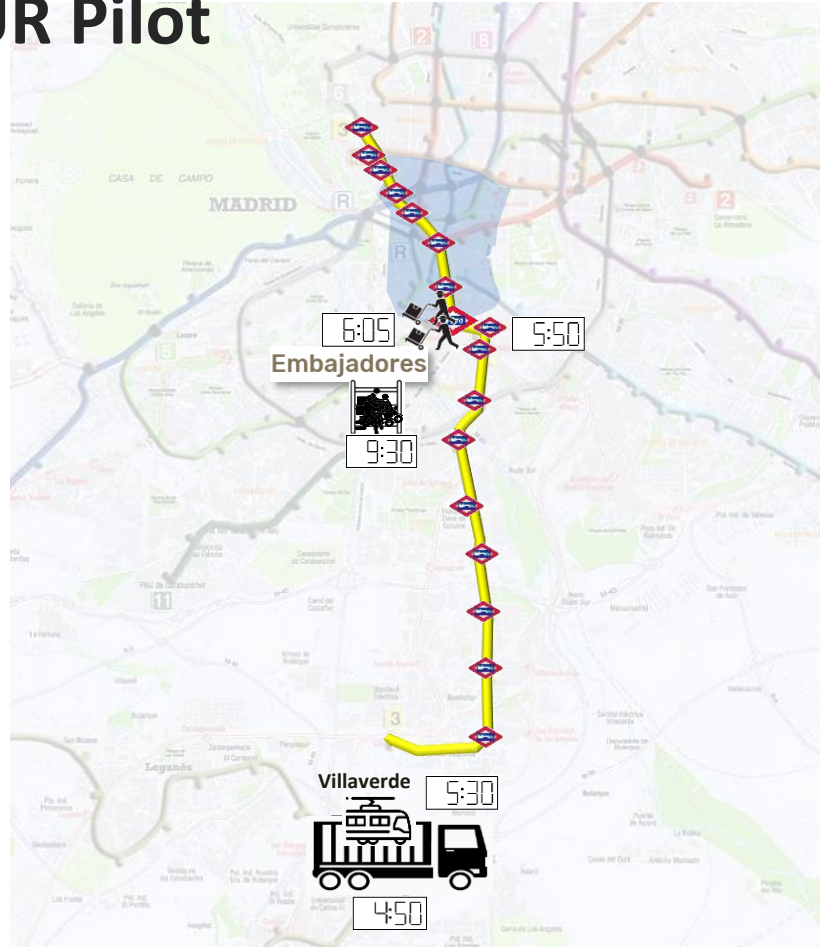


XXL Rolling Cages – 1200 x 800 x 1820 mm (W x D x H), 500 KG capacity
Four sides with door, equipped with wheels featuring individual brakes.

M4G Model: LEZ Pilot

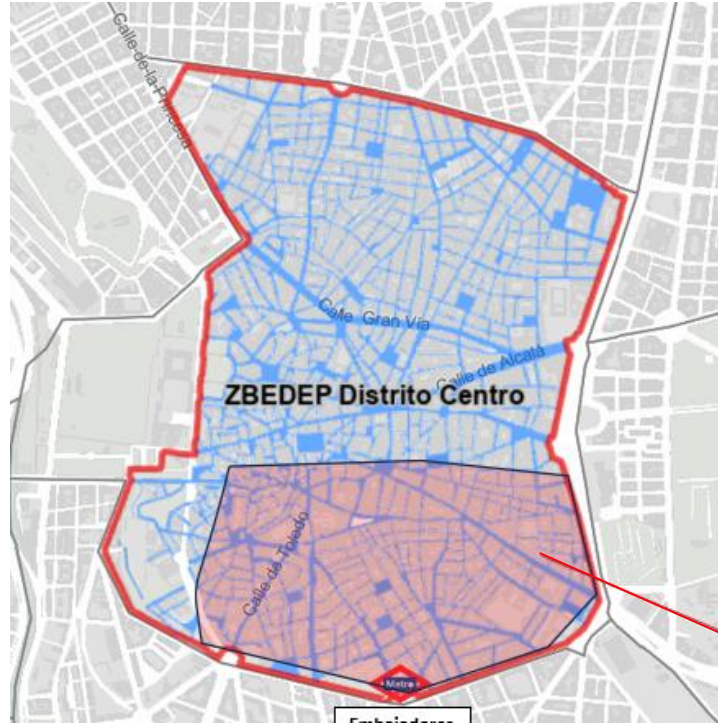


M4G Model: METROSUR Pilot



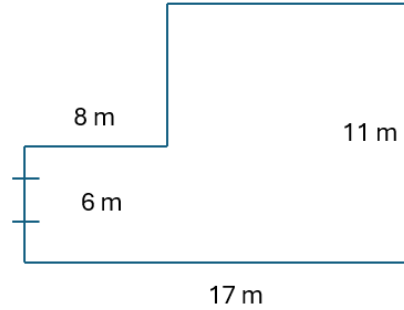
Low Emission Zone (LEZ):

Goods are injected from the depot into Embajadores station for subsequent distribution within a designated LEZ area.



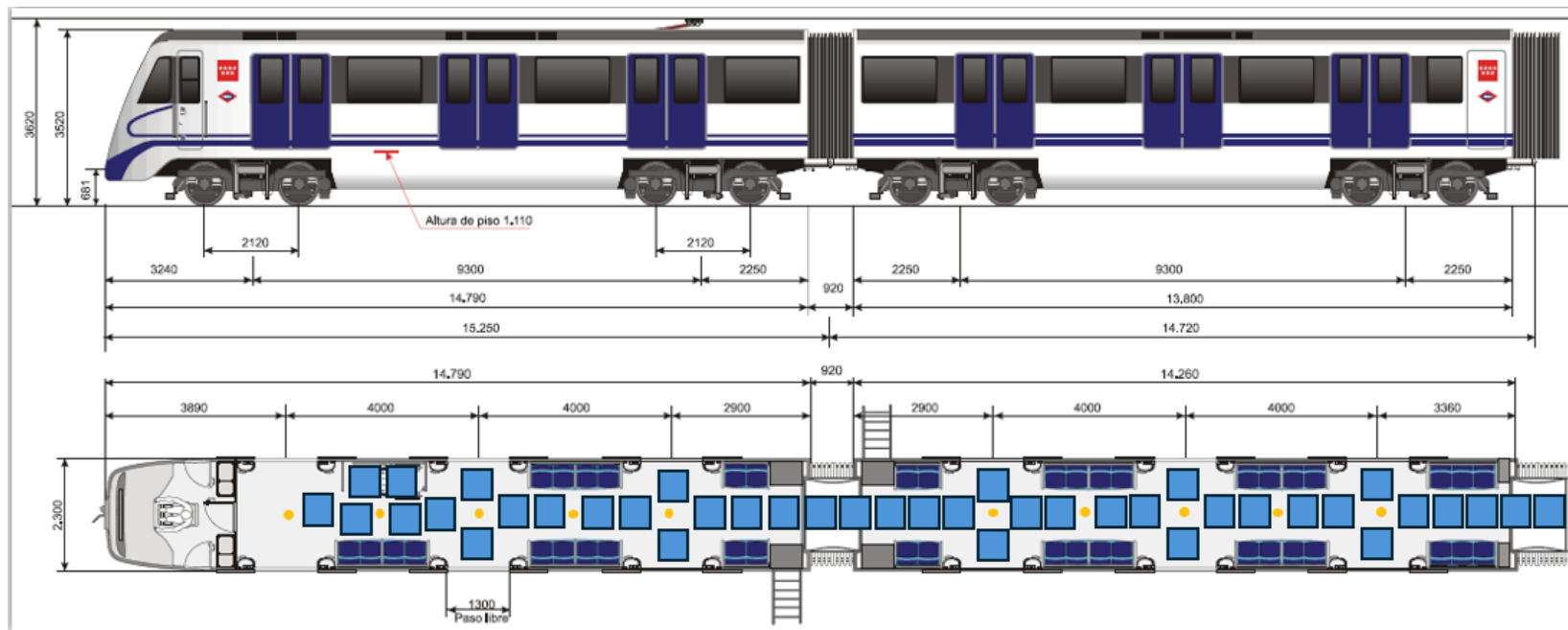
Home Delivery Area for E-commerce Parcels
using cargo bikes or walking couriers

Pilot Station: Embajadores



STATION FUNCTIONS AS A MICROHUB (SMALL INTERMEDIATE WAREHOUSE)

Vehicles and Handling Units : 8000 Series Train + Rolling Cages



Last-mile delivery bag

GRACIAS



Metro de Madrid