



VAL_09: Improving the efficiency of the bus service and comfort of PT users

Activities towards demonstration (How?)

Completion of the preparation activities

Technical visit to EMT bus depot

ETRA will conduct a technical visit to the EMT bus depot to prepare for deploying the solution on buses.

Preliminary works

Purchase of equipment

ETRA will start purchasing the necessary hardware to equip 1 bus for the first test. If the measure is successful, MET will purchase the required equipment to outfit the remaining buses.

Manual for installation and deinstallation

ETRA will elaborate detailed manuals to guide EMT technicians on how to install and deinstall the equipment in the buses.

Deployment and integration

Software testing and validation on a single bus

Initially, the solution will undergo testing on a single bus to assess detection accuracy in a real-world scenario. Any necessary adjustments to the algorithm will be made to enhance accuracy.

To validate the results, ticket data will be required for the duration of the system's operation to verify the number of boardings detected by the system.

Additionally, manual validation of boarding, alighting, and vehicle occupancy will be conducted over several trips.

An observer will record data at each stop along the route, noting the number of passengers boarding, alighting, and occupying the vehicle between each pair of stops. These manually collected results will then be compared with the system's data to assess the accuracy of the algorithms used.

Possible installation in additional buses (in case of replication)

After finalising the first test of the camera-based passenger counting system with AI in one bus, and after implementing the required adjustments, the system will be deployed in the remaining buses, in case it is of interest to EMT.

Demonstration activities

Demonstration of the camera-based passenger counting system:

The system will be demonstrated initially in one bus, and testing will run until M45. In case the system proves to be accurate, EMT will evaluate the possibility of equipping additional buses with such technology in the project lifetime.

Dumping of OD information into U-NEED tool:

One of the outcomes of the developed system is the identification of the passenger entry and exit patterns of bus passengers. This information will be integrated into U-NEED to improve the calculation



of detailed origin-destination matrices. U-NEED is already prepared to integrate this information, as soon as it is made available.

Data collection:

Data will be collected to monitor the user satisfaction. U-GOV might be used to collect the feedback from the bus transport users. Additionally, data collected will feed U-SUMP in order to allow the Valencia City Hall and the PTO to have an overall understanding on the impact of the implemented measures.

Timeline for implementation and demonstration (When?)

UPPER	Jul-2024	Aug-2024	Sep-2024	Oct-2024	Nov-2024	Dec-2024	Jan-2025	Feb-2025	Mar-2025	Apr-2025	May-2025	Jun-2025	Jul-2025	Aug-2025	Sep-2025	Oct-2025	Nov-2025	Dec-2025	Jan-2026	Feb-2026	Mar-2026	Apr-2026	May-2026	Jun-2026	Jul-2026	Aug-2026	Sep-2026	Oct-2026	Nov-2026	Dec-2026	
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