

Objectives of the measure

- **At measure level:**
 - Develop an innovative, smart, and inclusive bus stop.
 - Enhance user satisfaction by designing attractive and user-centric PT stops.
 - Improve feeling of safety in waiting areas.
 - Make PT stops accessible for all users, both physically and cognitively.
 - Make PT stops energy efficient and eco-friendly.
- **Contributing to city level objectives of:**
 - Enhance PT user satisfaction.
 - Improve public perception of PT.

Description of the measure

- **Situation before:**

PT stops are the first contact of the user with the service, so it needs to be attractive, inclusive, smart and safe. However, bus stops in the city lack smart features and are not always inclusive enough to cater to the needs of all the citizens, especially those with disabilities or special needs.

- **General description:**

This measure aims to develop, prototype, and test an innovative, smart, and inclusive bus stop that enhances user satisfaction and improves the public perception with respect to the PT. The design of the PT stop will go through a cocreation process in order to ensure that it fits the citizens' needs (in terms of accessibility, attractiveness, safety and inclusiveness). The new bus stop will incorporate a set of services and features to guarantee accessibility, both physical and cognitive, for all users, including those with disabilities or special needs. Furthermore, the possibility of incorporating cameras with AI capabilities to recognize vulnerable users or detect large crowds will be assessed, allowing bus drivers to take corrective measures in advance. Additionally, energy-efficiency criteria will be considered for the design of the stop.

- **Measure outputs:**

This measure will deliver:

- **Report on the analysis** of the users' needs in terms of accessibility, safety, inclusiveness, attractiveness and innovation features for the new bus stop, including **feedback from users with disabilities or special needs**.
 - **Guidebook** with recommendations for the design of an innovative, inclusive, attractive, energy-efficient and smart bus stop.
 - **Prototype** of the innovative, convenient, and inclusive bus stop.
 - **AI-based system** for detecting VRUs and queues and anticipate actions to be taken by the bus driver.
- **Supporting activities:**
 - **Public consultation and engagement activities** with local residents, PT users, and community organizations to gather feedback and input on the design and features of the new bus stop.
 - **Regular monitoring and maintenance of the new bus stop** and its features, including the AI-enabled camera and renewable energy sources, to ensure their proper functioning and longevity.
 - **Interaction with other CITY measures: UPPER and non-UPPER measures**

This measure is related to other measures in Valencia:

- **VAL_04: To reduce travel times through the implementation of dedicated bus lanes.** The new bus stop could be deployed along the BRT lane on Blasco Ibañez Avenue.
- **VAL_07: To provide the citizens with clear and accessible information before and during the trip.** The new bus stop must display real-time information on the PT offer to make it accessible for everyone. U-TWIN acts as a data lake and can feed different systems such as the information panels.

Target groups and/or geographical implementation area

- **Target groups:** PT users and potential PT users, especially vulnerable users.
- **Geographic implementation area:** The location of the new bus stops. Potentially Blasco Ibañez Avenue, as the BRT corridor will have specific features which could later be implemented in other bus stop in the city.

Stakeholders

The following stakeholders will be required for the implementation of this measure.

- **ETRA:** Technology providers.
- **EMT:** Decision maker and data provider in terms of bus operation.
- **IBV:** SSHH experts; leaders of co-creation activities; design of the stop according to the results of the co-creation workshops.
- **Municipality:** Decision maker in terms of urban space.

U-tools support

The implementation of this measure will be actively supported by one tool from the UPPER toolkit:

- **U-GOV:** This U-Tool will be used to collect **citizens' feedback**. It can be used in the design phase of the bus stop so that **citizens can indicate which features must be considered in the design of the new PT stop**. It can also be used in the implementation phase to **gather feedback** on the effectiveness of the measure.

Link to other UPPER measures

This measure is similar to UPPER measures implemented in other cities, especially:

- **MAN_04:** Accessible, secure, comfortable and multifunctional PT stop.
- **LIS_06:** To improve comfort, convenience and safety of PT interfaces.
- **HAN_03:** Increase the attractiveness of PT stops.

Process of implementation of the measure

Stages	Description	Intermediate milestones
Design	Developing a comprehensive plan for the new bus stop ensuring that the design is inclusive, accessible, and sustainable.	<ul style="list-style-type: none"> - Conducting a needs assessment and feasibility study for the new bus stop. - Organize a co-creation workshop to design the new bus stop that includes all features and services. - Incorporating AI-based system and renewable energy sources into the design. - Gathering feedback and input from local residents, transportation users, and community organizations.
Preparation	Preparing for the implementation of the new bus stop, including procuring materials and resources, and hiring personnel as needed.	<ul style="list-style-type: none"> - Procuring materials and resources necessary for the construction of the prototype of the new bus stop. - Obtaining any necessary permits or approvals for the construction of the new bus stop. - Conducting a safety assessment to ensure compliance with all relevant safety regulations.
Implementation	Construction and installation of the new bus stop.	<ul style="list-style-type: none"> - Construction of the prototype of the new bus stop, including installation of all features and services. - Testing of the AI-based system to ensure their proper functioning. - Conducting a user satisfaction survey to gather feedback on the new bus stop.

Sub-measures and preliminary indicators

Measure	Sub-measure (If applicable)	Impact indicators
VAL_08	N/A	<ul style="list-style-type: none"> - Satisfaction with public transport indicator in terms of "accessibility" and "safety". - Ridership of mobility-impaired before and after the substitution of the normal stop for buses and the new one - Amount of engagement processes that involved co-design Amount of citizens involved/representativeness of citizen group