

Objectives of the measure

- **At measure level:**
 - Increase intermodal trips that include PT.
 - Minimize users' travel disutility.
- **Contributing to city level objectives of:**
 - Reduce trips made by private cars.

Description of the measure

▪ Situation before:

This measure will be based on an already existing multimodal trip planner that was developed by CERTH. This multimodal planner combines optimally car-sharing, bike-sharing, scooter-sharing and walking. The trip planner examines various (unimodal and multimodal) combinations and for each combination the travel duration per mode is calculated, as well as the total travel cost. The various combinations are prioritized for the user based on a utility function that is generic (i.e. the same for all users). The trip planner needs improvements to address specific user needs and include PT information.

▪ General description:

This measure will result in a new generation multimodal planner, which will be accessible from the web, but it will be also integrated within a MaaS app. Through this planner multimodality will be facilitated by providing appropriate guidance to travellers regarding how they can combine PT and shared mobility modes, which combinations are optimal and which route should be followed.

Through UPPER the abovementioned multimodal planner will be significantly improved in two dimensions. Firstly, it will be enhanced with PT data (GTFS-RT) for including public buses and metro in the examined and proposed routes. The addition of PT is considered crucial, since it is the backbone of multimodality and can serve much more ODs comparing with those that the existing multimodal planner serves. The second improvement is crucial as well, since the existing generic utility function will be individualized based on data that will be gathered from the app regarding the actual preferences (mode choices) of the users.

▪ Measure outputs:

This measure will deliver:

- A mechanism for individualizing multimodal planner's outcomes.
- A new generation multimodal planner

▪ Supporting activities:

For making TES_05 more impactful, the digital service will be integrated in an already operating MaaS app. Moreover, dissemination activities will be implemented and they will be targeted to PT and shared mobility users, with the aid of the operators.

▪ Interaction with other city measures: UPPER and non-UPPER measures

This measure is related to another measure in Thessaloniki that aims to promote intermodality through better information provision:

- **TES_01:** Optimum transfers on P&R areas based on real-time data

Target groups and/or geographical impact areas

- **Target groups:** PT users, shared mobility users, potential PT and shared mobility users.
- **Geographic implementation area:** The multimodal trip planner will be able to provide results for any OD pair that is within a reasonable distance from a bus or shared mobility station. Considering the extended spatial coverage of bus stations, the multimodal trip planner will cover the whole city, including peri-urban areas.

Stakeholders

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

- **CERTH:** Development of the new generation multimodal trip planner, integration in existing app, data provision.
- **TheTA:** Data provision.
- **Transport operators:** OASTH and Attiko Metro can also contribute with data provision.
- **MaaS provider:** Contribution in the integration of the digital service in an existing MaaS app.

U-tools support

The implementation of this measure will not be actively supported by IT tools of the UPPER toolkit.

Link to other UPPER measures

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

- **VAL_05:** New Multimodal Digital Mobility Services (MDMS) with a focus on accessibility and inclusion
- **ROM_06:** Innovative features into the MDMS system according to the mobility patterns and needs of users' groups.
- **OSL_08:** Increase visibility of sustainable modes of transport and measuring effects by integrating in MaaS-solutions.
- **LIS_07:** To create a new Multimodal Digital Mobility Services (MDMS)
- **BUD_04:** To improve the route planner to increase the user satisfaction.
- **LEU_03+04:** To increase visibility and ease of use of public transport by offering improved information on public transport, parking and shared mobility options.

Process of implementation of the measure

Stages	Description	Intermediate milestones
Design	Data collection and conceptualization	<ul style="list-style-type: none"> - Data collection for PT and shared modes real-time availability - Definition of mechanism for individualizing multimodal trip planner
Preparation	Data processing	<ul style="list-style-type: none"> - Preparation of data for integration in the existing multimodal planner
Implementation	Measure implementation and testing	<ul style="list-style-type: none"> - Development of the digital service - Integration of the service in existing app

Sub-measures and preliminary indicators

Measure	Sub-measure (if applicable)	Impact indicators
TES_05	n/a	<ul style="list-style-type: none"> - % of intermodal trips - User satisfaction - Number of users of multimodal trip planner