

# IP4MaaS

## Deliverable D 4.4 User Engagement Strategy per each demonstrator

<b>Project acronym:</b>	IP4MaaS
<b>Starting date:</b>	01/12/2020
<b>Duration (in months):</b>	30 months
<b>Call (part) identifier:</b>	S2R-OC-IP4-01-2020
<b>Grant agreement no:</b>	101015492
<b>Due date of deliverable:</b>	Month 15
<b>Actual submission date:</b>	28-02-2022
<b>Responsible/Author:</b>	AITEC
<b>Dissemination level:</b>	PUBLIC
<b>Status:</b>	Issued

Reviewed: yes

### Document history

Revision	Date	Description
1	14/02/2022	First issue
2	17/02/2022	CEFRIEL revision
3	16/02/2022	OASA revision
4	01/03/2022	Submission

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### 3. Executive Summary

This deliverable (D4.4) aims to introduce the strategy per each scenario defined in WP2 to engage the TSPs and travellers in order to run the experimentation and collect data regarding the User Satisfaction Index (USI) surveys in this project. The document has been built based on inputs from WP2 ‘Demonstration Scenario Definition’ and will be used for WP5 ‘Demonstration Execution support’ and for the assessment methodology (Task 6.1) in WP6 ‘Performance and impact assessment’ according to the Grant Agreement (GA).

Within this deliverable there can be found the details of the strategies to be carried out to engage travellers for using the IP4 Solution during the experimentation and after that for filling the USI questionnaire that will allow measuring the users’ satisfaction level with the Travel Companion (TC) and the set of functionalities interfaced to users by the TC for the multimodal trips developed by Call For Members (CFMs) in other IP4 projects.

For a better understanding, the deliverable initially introduces the User Satisfaction Index (USI) questionnaire that was also included in D3.1. ‘Identification of KPIs for TSPs and travellers’ and explains its content. Since, this project will not only be focused on the aggregated data but also in the intersectional data, the USI data collection action also includes a socio-demographic questionnaire to further perform the analysis according to the preferable profile.

After this section, the representativeness of the sample size is introduced so as to achieve a sample of participants that were representing the European population which the IP4MaaS project is focused on.

Despite an initial suggested procedure for the engagement of participants is defined, dedicated workshops were carried out to better define the strategies in each demo site and to know the drawbacks and requirements each demo highlights that will need to be solved before the demonstration execution phases.

## 4. Abbreviations and acronyms

<b>Abbreviation / Acronym</b>	<b>Description</b>
<i>CFM</i>	<i>Calls for Members</i>
<i>COLAS</i>	<i>Collaboration agreements</i>
<i>EC</i>	<i>European Commission</i>
<i>EU</i>	<i>European Union</i>
<i>FP</i>	<i>Framework Programme</i>
<i>GA</i>	<i>Grant Agreement</i>
<i>H2020</i>	<i>Horizon 2020</i>
<i>IP4</i>	<i>Innovation Programme 4</i>
<i>MAAP</i>	<i>Multi-Annual Action Plan</i>
<i>OC</i>	<i>Open Call</i>
<i>PC</i>	<i>Project Coordinator</i>
<i>PO</i>	<i>Project Officer</i>
<i>PTO</i>	<i>Public Transport Operator</i>
<i>TD</i>	<i>Technical Demonstrator</i>
<i>TSP</i>	<i>Transport Service Provider</i>
<i>WP</i>	<i>Work Package</i>

## 5. Introduction

The present document constitutes the Deliverable D4.4 “user engagement strategy per each demonstrator” of the project IP4MaaS with the Grant Agreement (GA) number 101015492 under the call for proposals S2R-CFM-IP4-01-2020 in the framework of the TD/WA 4.7, IP4 according to the MAAP for the period 2015-2024.

This document will set the bases of the plan that should be followed for the involvement of the different stakeholders needed in the project for participation to the experimentation phase in the demonstration sites who will also fill the User Satisfaction Index survey (USI) to provide information about the satisfaction level of users towards the Travel Companion developed by Call For Members (CFMs) in other IP4 projects.

A stakeholder can be defined as any entity, organization or individual, which can affect or is affected by the IP4MaaS project. The different main groups of stakeholders within this project are:

- **Transport Service Providers (TSP)** - any representatives of public transport entities, authorities and private transport companies that provide services to travellers.
- **End-users of the transport system** - the end-users are a very broad group of people who use the collective modes of transport.

In addition to the above mentioned groups, other parties not directly affected by the project but still highly interested in its achievements, as Public Administration. These entities will benefit from the improvements the IP4 Solution will entail to the multimodality travels and also will help to disseminate the results further to the outside world:

- European Commission.
- Other European institutions (e.g. EU agencies) and European initiatives (e.g. other projects).
- Research institutions.
- Business institutions interested in providing MaaS solutions.

Feedback and information from stakeholders are required to determine the added value of the following functionalities of the IP4 Solution that are supposed to facilitate the multimodal trips and to increase the number of both the users of the transport system and the involved TSPs:

- Journey planning
- Booking
- Issuing
- Mobility packages
- Validation and inspection

- Trip tracking
- Alternatives calculation
- Location Based experience
- Group travelling
- Navigation
- Traveller's feedback
- Trip sharing
- Guest user
- Preferences and profiles
- Asset manager
- Contractual Management Market Place

According to the literature review, Kappelman (1995) suggested that engagement consists of users' activities, attitudes, goals and mental models, and motor skills and that it manifests itself in the form of attention, intrinsic interest, curiosity, and motivation. Chapman (1997) stated that "... something that 'engages' us is something that draws us in, that attracts and holds our attention". Laurel (1993) emphasizes playfulness and sensory integration in engagement, which she also refers to as "first-person experience". Quesenbery (2003) proposed that engagement is a dimension of usability, and is influenced by users' first impression of an application and the enjoyment they derive from using it. Multiple studies of engagement have described it according to different characteristics, such as media presentation, perceived user control, choice, challenge, feedback, and variety (Jaques 1995; Said 2004; Webster and Ho 1997; P. M. Chapman 1997; P. Chapman, Selvarajah, and Webster 1999). All these attributes demonstrate the physical, cognitive, and affective components of user experiences.

This deliverable intends to explain the user engagement strategies that each TSP should follow to engage the relative number of participants that are determined as a representative sample of the European population in Section 7, briefly describes the tool used for the data collection in Section 6.

The **main objective** of this deliverable is to define the strategy to engage the users in the different demo sites of the project where interaction or information coming from transport users is needed.

## 6. User Satisfaction Index survey

According to D3.1 (IP4MaaS Project 2021), deliverable in which the methodology was set, to calculate the Efficiency (Eq.3 to Eq.6 in Section 10 of D3.1), the Users satisfaction index (USI) index is required for the assessment of the results of the experimentation.

USI surveys are tools commonly used by public transport service providers (as defined above), in

order to evaluate their services and make improvements. Satisfaction can only be interpreted in relation to the significance of a given service and responses are easily swayed by the broader public mood (Bouckaert and van de Walle 2003). Of course, clients' ratings of services are also influenced by the service experience itself (Dinsdale and Marson 1999).

D3.1 (IP4MaaS Project 2021) already introduced the USI survey and defined it as a quantitative, but subjective, way to measure the utility that a functionality offers to a specific TSP and to a user with a specific profile.

**Two types** of USI questionnaires (see Section 14. Annex I in deliverable D3.1) will be developed in the IP4MaaS to collect the data:

1. One USI, addressed to the travellers, will provide the travellers' satisfaction level with the IP4 functionalities offered in the demo site. It will consist of a section with questions about the users' needs and expectations followed by another section asking about socio-demographic information to further perform the intersectional analysis of the responses.
2. Another USI addressed to the TSPs will provide the TSP's satisfaction with the integration of the functionalities in the IP4 Solution.

Despite an initial version of the USI questionnaires are included in D3.1, they are still being refined and reviewed by all the partners so as getting the final document before implementing it in the final version. In the update that will be introduced in D3.2 (F-REL version), the results from the conversational surveys and data mining techniques from Task 2.2 will also be considered as part of the users' needs and expectations

The questionnaires are being written in a colloquial language, as well as translated in the demonstration site's local language, so as to be easily understandable by all the travellers. Otherwise, it was probably difficult for them to answer the questions and provide their feedback about their satisfaction level with the tested functionalities as they are not familiar with the IP4 terminology.

Since each demonstration site will potentially integrate and evaluate a different set of IP4 functionalities, the USI survey will be customized for each demonstration site, including only the questions related to the IP4 functionalities concretely experimented by the respondents (see Figure 1).

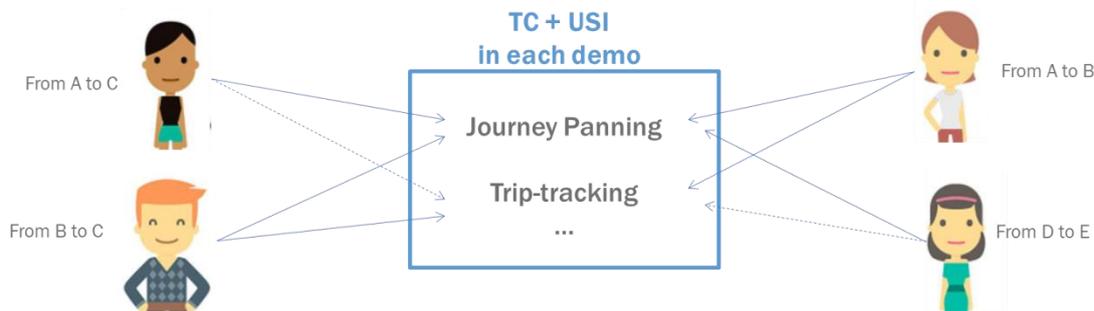


Figure 1. Functionalities available to be tested and the USI linked to them per each demo site.

After the data collection process, the indicators to be introduced in the Efficiency formula needs to be defined. Despite in the literature review there are several ways for evaluating the USI responses, in the IP4MaaS project, the normal distribution is assumed and the mean of the responses is a good USI indicator.

## 7. User engagement strategies and sample size

Since the Efficiency will be calculated for a specific functionality, offered by a TSP (see Section 10 of D3.1), this calculation will need a representative number of travellers, given that TSPs and functionalities are fixed by framework conditions.

Initially, it was used the Survey Monkey’s sample size calculator<sup>1</sup> to calculate that 385 respondent should be engaged per each demo site for the aggregated analysis by considering a 0.5 size effect, a 95% confidence level and 80% power of the test. And this value rounded up to **400 users per each demo site**. In this way, we ensure a 95% confidence level in results referred to each demo site.

According to the Task 4.3 in the GA, and also needed for the efficiency calculation, TSPs will be asked to fill the specific USI questionnaire to ask them about their level of satisfaction with the IP4 solution and the added value it provides in the multimodal trips. Since TSPs are partners of the consortium, there is no need to define any specific user engagement strategy as they are obliged to participate to accomplish the GA.

To evaluate the functionalities offered in the Travel Companion, the Efficiency formula will be used (from Eq.3 to Eq. 6 in D3.1), and **the number of travellers per functionality and TSP should be similar** in order to allow fair comparisons of the Efficiency among TSPs and functionalities. The user engagement strategy will try to achieve this similar number of travellers answering the USI questionnaire per each functionality and TSP, anyway the number of respondents considered

<sup>1</sup> <https://es.surveymonkey.com/mp/sample-size-calculator/>

in each Efficiency calculation will be provided jointly with results of these comparisons, as key information for the final user of the analysis.

At the time of writing, we have only a preliminary idea of the list of functionalities tested per each demo site and per each demo phase. A global overview of the TSPs' interests in testing the IP4 functionalities will be included in Deliverable D2.3 "Demonstration requirements and scenarios, F-REL" (due at M17), while the actual integration and testing of the IP4 functionalities for each demo site will be included in the Demonstration Execution in WP5 and reported in the respective deliverables.

## 7.1. Suggested user engagement procedure

After setting the required number of participants in each demo site, the suggested procedure for the engagement of participants in each of the 6 demonstration sites should be:

1. In an initial stage, previously to the demonstration execution pilots, advertisements and other disseminations campaigns will be performed so as travellers could know about the IP4MaaS project, its aim and for what purpose they will be asked to collaborate:
  - a) Dissemination on the web pages of the TSP, universities, transport companies, parking places...
  - b) Advertisement in the app of the TSPs
  - c) Social media
  - d) Messages on-board buses and trains, promotion messages on the automatic ticket issuing machines in stations.
  - e) Advertisement in docking stations
  - f) Leaflets and/or posters...
2. In a second stage, each demonstration site will set up a recruitment phase to engage the target number of participants; this could be done through online registration or by similar means, in order to collect participants' interest in the experimentation phase and to create a connection with them.
3. Before the pilots, participants will be given the link from which they will have to **download the Travel Companion (TC)** to be used for testing.
4. Each participant will be asked to perform more than one journey using the IP4 solution so as **to become familiar with the tool** and to be able to test as much functionalities as possible. The testers will not be obliged to test the TC in any specific routes; they will be allowed to use it in any multimodal trip involving any of the TSPs of the demos.
5. After a certain number of trips (each TSP will establish this value), the **USI survey** will be answered by the testers to provide the feedback regarding their satisfaction with the TC

functionalities in their multimodal trips and to answer the socio-demographic questions to enable the intersectional analysis of their responses (WP6).

6. Only when the participants test the TC and fill out the survey, they will be given **incentives** such as free tickets for travelling, gadgets, gift cards, vouchers or others to be decided at demo level. These incentives will be defined by each demo team according to their possibilities; budget or what they consider to be better to engage participants at local level.

In order to satisfy the GDPR requirements, the demo leaders will distribute a survey link with their privacy policy included. The potential participants will have to register by introducing their e-mail address prior to demonstration execution. They will receive information about the project and other interesting material such as the user's guide, instructions and the links for downloading the Travel Companion. Demo leaders will be the only collectors of the information about the users and this personal information will be completely deleted once the IP4MaaS project finalises.

To improve the confidentiality of the users during the testing of the IP4 Solution and when filling the USI survey process, the CFMs will provide "fake credentials" that will let the participants access the TC without introducing any personal data in the execution phase. Thanks to this approach, the demo leaders will be the only partners knowing the relation between the real and the fake users.

Testing the TC and filling the survey may not be a very easy procedure; we are aware of this and hereafter we list the potential difficulties that participants may encounter:

- The TC will be available neither from Google Play nor from the App Store for download. Therefore, only the pilot participants will be provided with the link for download the Travel Companion and with the "fake credentials" to avoid GDPR issues as mentioned above.
- The potential users must have an Android phone. All the iPhone users are excluded and so the pool gets a bit smaller with this restriction.
- The participants must not only have a smartphone but also must be tech-savvy, at least to a certain extent. So it may complicate engaging elderly people, at least a part of them.
- Participants must have good signal and available mobile data to spare in order to access the links for both the app and survey, take their time to examine and use both properly.
- People may not be really interested in testing the TC and they could just play a little bit with it but without necessarily having in mind the final objective of the IP4MaaS project.
- People usually travel on a daily basis to the same specific destination (commuting), for example from home to their workplace, as a routine. It is very difficult to make people

changing their usually way of travelling and they would not even be looking for alternative routes.

To overcome these drawbacks in the demonstration executions and to achieve a high quality data in the project, a user engagement strategy was meticulously defined per each demo site. Several workshops per each demo site were carried out during December 2021 and February 2022 to determine the most appropriate strategy for each one. These workshops mainly focused on the demo sites that would be executed in the 1<sup>st</sup> phase. In addition, Warsaw demo site also asked for the meeting so as to have enough time to prepare the procedure in the proper way. However, in the last days of February, at the CFMs meetings it was decided by the CFMs to postpone Barcelona demo site to the 2<sup>nd</sup> phase due to time restrictions in the integration of the TSP functionalities .

The results emerged in the workshops and other internal actions are indicated in the next section.

## 7.2. User engagement procedure per demo site

Table 1 indicated the partners that are responsible for the user engagement strategy in each demo site.

DEMO SITE	DEMO LEADER	CONTACT PERSON
<b>Athens</b>	CERTH	Annie Kortsari
<b>Barcelona</b>	SPARSITY	Ismini Strompou
<b>Padua</b>	FST	Alessandra Berto
<b>Warsaw</b>	ZTM	Piotr Załęcki/Joanna Filipek
<b>Liberec</b>	OLTIS	Petr Buchníček
<b>Osijek</b>	DYVOLVE	Gordan Topolovec

Table 1. Demo sites and demo leaders

### **ATHENS DEMONSTRATION SITE**

The workshop to discuss the user engagement strategy in Athens took place during February 8<sup>th</sup> in a video-conference. Among the assistants, partners from CERTH, OASA, MIRAKLIO, AETHON, FIT and UITP, collaborated in the definition of the best strategy in order to achieve the maximum data of users testing the TC and filling the USI survey.

To sum up, in an initial stage, previously to the demo execution, local demo events will be hold so as to increase the visibility of the project activities, engage with local press and promote the project.

TSPs from Athens will support the suggested procedure and will offer incentives to those people participating in the demonstrations. At this stage of the project, they have not fixed yet if they offer one or two free tickets per person or if they will prove them other tokens.

Regarding the number of participants, OASA, as a public transport operator, is very confident to get a high number of users testing the TC and filling the survey as they are transport operators with a relevant number of users OASA will cover 1-month free passes for local users and 16 days free passes for tourists as a motivation to attract a total sample of 150- 225 users.

However, BRAINBOX, TAXIWAY and MIRAKLIO are local entities, first two private and the latter one a public operator which serves a very specific region, the Municipality of Iraklio, with a limited amount of clients. Partners involved in the Athens demo site are analysing how to encourage travellers to use these services to achieve a balanced number of respondents from all the partners involved.

### **BARCELONA**

The workshop to discuss the user engagement strategy in Barcelona also took place during February 8<sup>th</sup> in a video-conference. Among the assistants, partners from SPARSITY (on behalf of TMB and BUSUP) and AETHON collaborated in the definition of the best strategy in order to achieve the maximum data of users testing the TC and filling the USI survey.

Previously to the demo execution, local demo events will be also hold so as to increase the visibility of the project activities, engage with local press and promote the project.

SPARSITY, as demo leader in Barcelona demo site, stated that the involved partners are also willing to offer incentives to engage people to collect a high number of participants and make easy the demos execution phases.

TMB will offer free tickets, but, to do so, they have identified that the GDPR linked to the personal information is a potential barrier. To give participants free tickets, they need to know personal information such as name and e-mail address because TMB tickets are personal and have to be given to a particular person. They are thinking several options to solve this drawback such as provide a code after finalizing the whole participation (testing the TC and filling the USI survey) that could be used to get the physical ticket, but probably they will use the “fake credentials” as indicated above. Furthermore,, for TMB it will be important to know how the information collected during the demos and the USI survey will be stored and managed to ensure data privacy and to refine the user engagement procedure.

The situation of BUSUP is a little bit different as it is an on demand transport company and because it is not a public operator, it offers its services in a private way to those companies with a contract with BUSUP, Instead of offering free tickets they will offer free seats as an incentive.

Regarding the number of people they are expecting to get, TMB will somehow easily achieve to a

high amount of potential users due to the big quantity of users this TSPs has. In contrast, for the nature of the service for BUSUP, they don't have many clients but they expect to deeply contribute to achieve the ideal 400 participants per demo site.

### **PADUA**

The workshop to discuss the user engagement strategy in Padua took place during February 9<sup>th</sup> in a video-conference. Among the assistants, partners from FST and AETHON collaborated in the definition of the best strategy in order to achieve the maximum data of users testing the TC and filling the USI survey.

Local demo events will be hold previously to the demo execution so as to increase the visibility of the project activities, engage with local press and promote the project.

Partners and TSPs involved in this demo site will also support the suggested procedure to engage participants. They will offer free tickets to the users that will test the TC and fill the USI survey. Moreover, a particular issue that makes this demo different to the others is that the participants will be engaged among workers and students from the Ca' Foscari University of Venice.

FST will have dedicated meetings with workers of the University and other mobility managers to define in a more detail the user engagement strategy. A contact list of potential participants will be created as a database of people to be contacted to during the pilot phases of this demo that will encompass the area of Padua and Venice.

In addition, several local campaigns will be planned in advance to make citizens aware of the importance of their collaboration with the IP4MaaS project and the added value it will offer to them the IP4 Solution.

### **WARSAW**

Despite Warsaw was not included in the 1<sup>st</sup> phase, they considered very relevant to discuss the user engagement at the dedicated meeting. The workshop took place during December 28<sup>th</sup> in a video-conference. Among the assistants, partners from ZTM, TW, MZA and FIT collaborated in the definition of the best strategy in order to achieve the maximum number of users testing the TC and filling the USI survey.

Also in Warsaw demo site and prior to the demo execution, local demo events will be held so as to increase the visibility of the project activities, engage TPSs social media channels and websites to promote the project.

In the Warsaw demonstration site, there are three involved TSPs: ZTM, MZA (bus operator) and TW (tram operator). ZTM is a budgetary unit of the City of Warsaw and it is responsible for managing and supervising other public transport operators like MZA and TW by signing multiannual contracts with them.

ZTM cannot provide free tickets for user engagement due to internal policies, so they cannot support the suggested procedure. Therefore, they will adopt a different strategy. The user engagement procedure planned for this country is to involve a specialized company to engage participants in the demonstration phase of the project so as to achieve a good quality of data for the project. Partners are still analysing the best option to provide a dedicated budget for this concept.

TSPs are also evaluating ways to contribute to the promotion of the project and to increase its visibility at local level.

### **LIBEREC**

Since Liberec will participate in the 2<sup>nd</sup> phase of pilots, no workshop was performed with the partners involved in this demo site. However, internal conversations among AITEC, OLTIS, AETHON and FIT were taken so as to start planning the user engagement strategy.

Despite the user engagement procedure is still under development, participants will be asked to test the IP4 Solution during 10 trips before filling the USI survey to make sure they will be familiar enough with the solution, so they answer the survey fully aware of the functionalities offered by the TSPs.

The local demo events are planned to be organized to increase the visibility of the project activities, engage with local press and promote the project and its outcomes.

### **OSIJEK**

Although Osijek demo site will also be included in the 2<sup>nd</sup> phase pilots, GPP will also engage participants following the suggested procedure, but it is still pending a more detailed process.

In an initial stage and before starting the demo execution, local demo events will be hold so as to increase the visibility of the project activities, engage with local press and promote the project. An meanwhile the phase will be performed, incentives will be given to participants so as to engage them.

Since this deliverable defines the user engagement strategy, more specific actions will be set during the development of the project and will be considered in the WP4 and WP5 of the planning and execution of the different phases and demos.

## 8. Conclusions

Deliverable D4.4 ‘User Engagement Strategy per each demonstrator’ details the strategy to engage users according to the methodological and technical requirements for testing the Travel

companion (TC) developed by the CFMs and to fill the USI questionnaire to evaluate the added value the IP4 Solution offer to the users of the multimodal trips in the 6 demonstration scenarios previously defined.

The tool needed for collecting data to calculate the Efficiency of the functionalities of the TC is the USI questionnaire and was already defined in the deliverable D3.1 (IP4MaaS Project 2021). The questionnaire, which will be updated in deliverable D3.2 which will be an F-REL version (M17) with the supervision of all the IP4MaaS partners, will be introduced in a Form link that will be shared with the participants to fill the online survey.

With the help of the Survey Monkey's sample size calculator, **400 users per each demo site** were considered the target number to be achieved in the USI survey. This data will allow determining the efficiency of the functionalities of the TC per each demo site (and so, per TSPs involved).

An initial user engagement procedure was established as a starting point to be discussed during several meetings focusing on this issue and in the specific workshops organized per demo site. In general, it could be said that in all the demo sites, prior to the demonstration execution pilots, advertisements and other promotional campaigns will be carried out to make users aware of the importance of participating in the project.

In Barcelona, Padua, Athens, Osijek and Liberec, after testing the IP4 Solution and filling the USI survey, participants will be given free tickets or similar incentives (e.g., vouchers) so as to engage them and enable reaching the amount of people defined in this deliverable.

This document will also contribute to data collection during demonstrations and thus to the operation of the Data Committee (Task 4.3). It will also provide insights in the proper execution of demonstration according to the Demonstration Execution Plan (WP5).

Finally, a more detailed definition of the final procedures will be established in WP4 and WP5, where demonstration campaigns will be fully defined and carried out.

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