

IP4MaaS

Deliverable D5.3 Final report on Padua demonstration execution

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1. Executive Summary

The aim of the Deliverable 5.3 “Final report on Padua Demonstration execution” is to present the timeline and details of preparation and execution of Padua Demonstration taking place as a part of the IP4MaaS project within the framework of the Shift2Rail Joint Undertaking. The demonstrated technologies were selected functionalities of the Travel Companion application. IP4MaaS executed demonstration activities, monitoring their progress, and assessing their results in terms of effectiveness and user satisfaction. Those activities were enhanced by co-creation and collaboration activities between different partners, thus making IP4MaaS a point of reference for holistic demo execution.

The demonstration consisted in testing the Travel Companion application on a group of recruited testers who got a link to download and install the Travel Companion application. The testers of the demo were selected based on evaluations of the most frequent travelers using public transport in the area. In our case, the demo team focused on passengers travelling to and from Padua. In particular, the demo team specifically targeted male and female students of the Ca' Foscari University of Venice. The testers have been proactively trained in order to understand how to participate and get the necessary instructions for the demo and provided feedback on the selected functionalities using the online questionnaire form.

The deliverable aims to provide a description of what was the process that led to the physical execution of the demo. It focuses on the organizational and co-ordination phases that saw the involvement of various actors as well as collaboration with project partners.

2. Abbreviations and acronyms

Abbreviation / Acronym	Description
CFM	Calls for Members
DL	Dissemination and exploitation leader
DoA	Description of the Action
EL	Ethical leader
EU	European Union
ER JU	Europe's Rail Joint Undertaking
FS	Financial Statement
GA	Grant Agreement
H2020	Horizon 2020
IP4	Innovation Programme 4
OC	Open Call
PC	Project coordinator
PM	Project manager
PMT	Project Management Team
PO	Project Officer
QAC	Quality Assurance and Innovation Committee
S2R JU	Shift2Rail Joint Undertaking
TC	Travel Companion
WP	Work Package
WPL	Work package leader

3. Background

The present document constitutes the Deliverable D5.3 “Final report on Padua Demonstration execution” in the framework of the IP4MaaS Project (Grant Agreement number: 101015492 — IP4MaaS — H2020-S2RJU-2020 / H2020-S2RJU-OC-20209) under the Innovation Programme 4 (IP4) of the Shift2Rail Joint Undertaking, executed in cooperation with Call for Members Consortia such as COHESIVE (GA 777599, S2R-CFM-IP4-02-2017) also being a part of the Shift2Rail Joint Undertaking and connected with the IP4MaaS Consortium by means of the Collaboration Agreement.

The results and conclusions of the Padua demo execution presented in this document will also contribute to T5.1 of the IP4MaaS project – “Coordination of the demonstrations executions” and corresponding D5.1 “Results of the demonstrations”. They contribute as well to WP6 D6.2 “Performance assessment”.

4. Objective/Aim

This document provides the description of the preparation, execution and results of the Padua demo within task T5.4 “Padua demonstration” of the WP5 “Demonstration Execution Support” of the IP4MaaS project.

IP4MaaS project aimed to promote the adoption of Mobility as a Service (MaaS) schemes by testing the technologies developed within the IP4 Shift2Rail through six demonstrations conducted in Europe: Barcelona, Athens, Osijek, Liberec, Warsaw, and **Padua**. This document provides the description of the preparation, execution and results of the Padua demo. In particular:

- The presentation of the Padua demo objectives and purposes.
- The process and development of the demo through dedicated meetings and workshops aimed to coordinate and to foster the demo preparation and execution.
- The process of selection of the functionalities that were integrated for the Padua demo.
- The development of the User Engagement Strategy designed and implemented by the Padua demo team and the staff of the University of Venice.
- The training of the testers of the Travel Companion application.
- The reporting of the issues regarding the Travel Companion application.
- The Padua execution phase: the number of registered testers, the number of USI questionnaires delivered, the feedback provided by the testers outside of the framework of the USI questionnaires.

5. General information about demonstration site

The pilot in Padua demo took place in a 40 km radius surrounding the urban centre of Padua (Italy) involving urban and regional mobility service providers in Veneto and concerning rail, road and bus. The province of Padua, with 928.280 inhabitants, it is the most populated province in the Veneto region.

The main outcome was the improvement of mobility planning and management services, encompassing but extending the MaaS paradigm and serving institutional customers with new services through the integration of IP4 technical features.

Since cities could sometimes become unliveable due to smog, traffic congestion and overcrowded public transport, the project and specifically the demo in Padua aimed to test the Travel Companion application and more in general IP4 solutions in order to cope also with these problems.

Padua demo, through the abovementioned application pursued the following main objectives:

- Improving connections between urban and surrounding areas, in particular with rural areas. Italy's rural areas, which account for more than 60% of Italy's land surface, are often isolated, especially from the perspective of transport services, so the project initiative intended to address at least part of this gap.
- To improve the efficiency of public transportation services: although most areas with transport infrastructures are well equipped, there is sometimes a lack of integration between different modes of transport, which makes travelling inconvenient.
- To reduce GHG emissions, traffic and parking congestions: bad travel habits, such as travelling alone or preferring car travel to public transport, raise serious questions about the sustainability of these modes of travel.

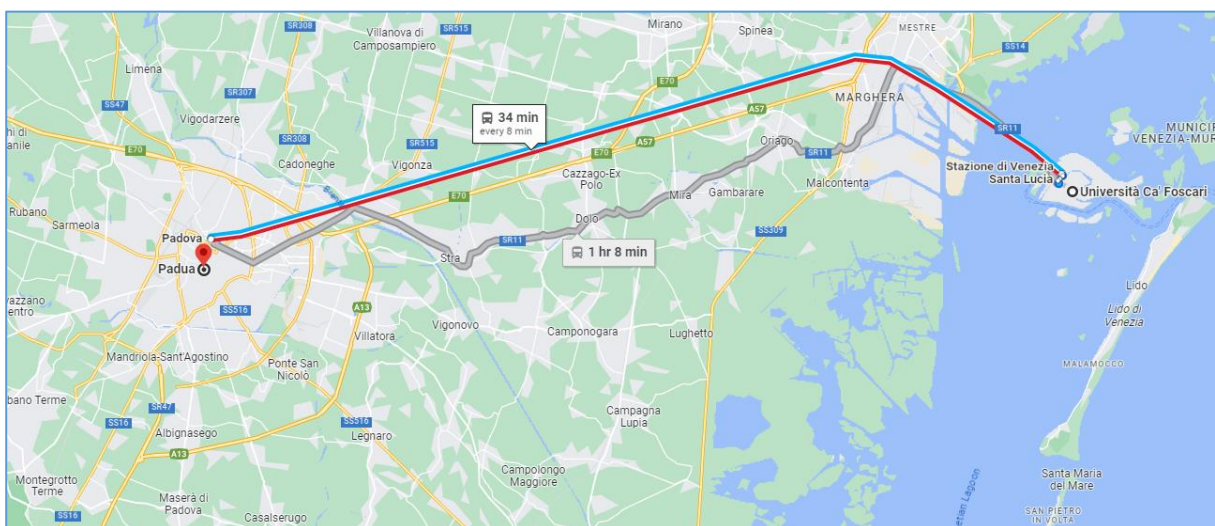


Figure 1 – The Padua demo site area

6. Preparation phase

The Padua demo preparation phase consisted of the following main activities:

- Regular coordination calls/meetings, both internally and with project partners in order to organise the work to be undertaken.
- Task division between demo leader and TSPs to rationalise the workload among participants.
- Creation of a User Engagement Strategy.
- Cooperation in preparing and translation of the USI questionnaire.
- Selecting the Travel Companion functionalities to be tested in Padua.
- Translation of the Travel Companion application.
- Providing access to data sources necessary for proper functionalities' integration.
- Coordinating and supporting the integration process with the CFMs.
- Internal testing of the application before submitting it to the testers.
- Preparing materials and scenarios for trainings for the testers and conducting those online trainings.

6.1. Demonstrated functionalities

The Travel Companion application, within the Shift2Rail IP4 technologies developed, integrates mobility options available throughout the Padua region into mobility packages centred around the specific requirements of citizens in the pursuit of their daily activities, allowing train and bus operators to leverage digitalisation for multiple mobility services, serving not only individual passengers but providing new mobility management services to city administrations, companies and universities. Within the Padua demo, the functionalities contained within the application were tested and summarised in the following table.

List of Travel Companion functionalities tested	
Trip planner	The functionality to find routes involving different modes of transport (metro, tram, bus...) in a journey from an origin to a destination
Navigation	The functionality to navigate to the correct metro or bus stop based on the user's position, including the interchanges among different means of transport
Traveller's Feedback	The functionality for submitting or providing feedback about delays, cleanness of stations, disruptions, and crowdedness in public transportation or road environment that might be helpful for other travellers

Issuing	The functionality which allows the ticket to be issued
Trip sharing	Allows the traveller to share a trip with an other user
Guest User	The functionality for using the application as a guest, i.e., without logging in, for quick trip planning including features such as navigation and shopping experience
Preferences and Profiles	The functionality which allows travel preferences to be entered so that customised solutions can be returned by the application
Booking	The functionality which allows the ticket to be booked
Collaborative Space (travellers)	The functionality for the travellers for sharing their experiences such as the quality of transport services, delays, overcrowding, and security issues on stations or vehicles, and view other users' experiences
Collaborative Space (TSPs)	It's a web-portal that allow the TSPs to manage the data created by traveller using reports. The TSP are able to create, modify and delete reports. Report areas can be created. The report can be filtered and some statistics regarding to time and type of reports can be seen.
Asset manager	Allows the TSP to insert and describe their web-services
Specific message	The TSP operator wants to send a message to one or more travellers if they are in a specific zone for example.

6.2. User engagement strategy

In order to ensure the largest possible number of testers, a student engagement plan was structured through emails sent by university staff to students' mailboxes, including “Save the date” emails, reminders and an Engagement event on the Padua Demo TC app that took place on 14/04/2023. The engagement strategy was structured in collaboration with Ca' Foscari University professors who represented the intermediaries dealing with students, the target group. Although the demo team sent emails to inform the identified target group, the event was attended by a very small group of potential users. Nevertheless, in collaboration with the university staff, the demo team sent emails reminding to the potential users the start date of the demo as well as all the training materials (presentation with the aims and objectives of the demo and applications, User guide) to incentivize participation in the demo as much as possible.



Figure 2 - Front Cover Engagement event

6.3. Internal coordination

The preparation of Padua was carried out through:

- Participation of Padua demo team members in monthly WP5 coordination calls with WP5 leader.
- Participation in meetings and workshops with the CFMs.
- Regular internal Padua demo team calls.

- Regular correspondence via e-mail with all relevant parties, including internal correspondence of Padua demo team in all matters regarding the IP4MaaS project and demo preparation.

The activities carried out within WP5 saw the main participation and collaboration of the project partners. Alignment calls were organised in which activities were coordinated in order to organise the demo in the best possible way.

6.4. Internal testing

The internal testing for the Padua demo took place **between 10th and 14th April 2023**. All the Padua demo team members downloaded and used the application with special focus on the functionalities selected. No technical problems were reported, so there was no need to contact technical partners. Likewise, testers of the Padua demo reported no failures.

6.5. Training session

Tester training activities for Padua demo consisted of **1 online training sessions for registered testers that took place on 14 April 2023**. The participation was not mandatory.

For the training day, a presentation was prepared through which to explain to the demo testers the purpose of the IP4MaaS project as well as the contents and aims of the Travel Companion application. Since the attendance at the event was low, it has been decided to send an e-mail after the training event with the contents of the presentation as well as the user guides. During the training event, it was explained to the students how to download the application and the first steps to use it.

TC: Overview Home Page

Dopo aver effettuato la procedura di Login, l'utente visualizzerà la pagina principale. Toccando lo schermo, l'utente verrà indirizzato al Menù principale, contenente diverse sezioni.

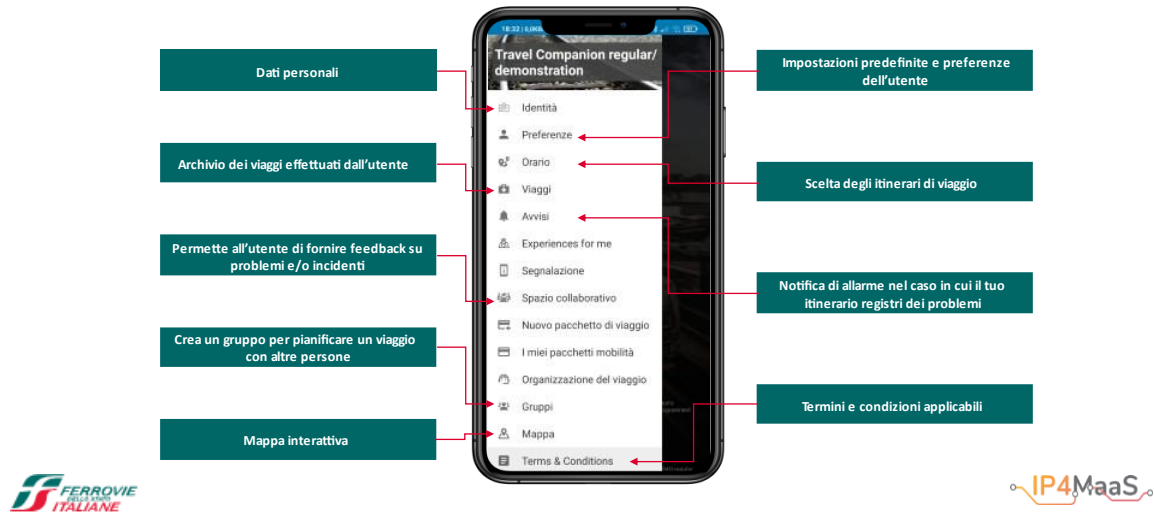


Figure 3 - Engagement and formative event slide

7. Demo execution

Dates of the Padua demo:

Padua demo took place between **17th and 21st April 2023**.

Functionalities tested:

The functionalities tested are displayed in a table in the point 6.1 “Demonstrated functionalities”.

Padua demo area coverage:

The demo in Padua demo took place in a 40km radius surrounding the urban centre of Padua (Italy) involving urban and regional mobility service providers in Veneto and concerning rail, road and bus. The demo has focused in urban and suburban area of Padua and surrounding areas, taking place from the 17/04/2023 to 21/04/2023.

Testers:

The demo focused on commuters belonging to the Padua province and travelling mostly to/from the University of Ca’ Foscari.

Our partner AITEC, reported the submission of **13 USI questionnaires for travellers**.

Our partner AITEC, reported the submission of **4 USI questionnaires for TSPs**.

Communication:

The communication between the Padua demo team and the testers was possible via e-mail, specifically:

ip4maaspadovademo@gmail.com

8. Evaluation phase and results

Below are provided the most relevant statistics regarding to the execution phase of the Padua demo.

- Number of app downloads: 77 downloads for the TC application.
- Clicks on distribution link: 77 clicks on TC distribution link for the TC application.
- Number of participants (travellers/drivers): 500. Represents the total number of users (Fake credentials) available and assignable to Testers.
- Surveys completed: 13.
- Unique users: 9.
- Number of all rides: 387.
- Functionalities tested: 9.
- Functionalities tested: 3 for TSP.
- 70% of respondents used Trenitalia and 30% of them used Busitalia.
- The usage percentage of each functionality for travellers is: Journey planning (85%), Booking (60%), Issuing (60%), Navigation (70%), Traveller's feedback (77%), Trip sharing (77%), Guest user (60%), Preferences and Profiles (70%), Collaborative space portal (85%).
- Incentives provided (number): N/A. No incentives and/or gifts were provided to Testers.

Tester's feedback:

- Some testers have appreciated the application because it reduces the pollution impact of the transport sector.
- Some people appreciated the functionality that permits to report to other travellers on the status of the modes of transportation involved, highlighting how it allows them to update and be updated, making the travel experience better.
- Some people remarked that it can be complicated to fully exploit the application potential without a proper training before the demo.
- Some people were discouraged from using the application because it had to be downloaded from a third-party site (i.e. they could not find the app on platforms like Google Play or App Store).

Lessons learned:

- The type and value of incentives can be significant for increasing user engagement, because they provide motivation for participation and a higher USI questionnaires completion rate.

- Defining targeted groups of potential testers is crucial for user engagement as it makes communication promoting the testing much better tailored in terms of channels of communication as well as content and provides better return.
- The translation of the application can only be performed properly when the application is known to the translators, otherwise the lack of context creates the risk of the translation turn out confusing.

9. Conclusions

The goal of the Padua demo as part of the IP4MaaS project was to improve the mobility planning and management services, encompassing but extending the MaaS paradigm, to serve institutional customers with new services through the integration of IP4 technical features and to obtain and deliver feedback on the functioning and usefulness of selected functionalities of the Travel Companion application from its users.

Going into more detail, the objectives of the demo were:

- Improving connections between urban and surrounding areas, in particular rural areas.
- Improving the efficiency of public transportation services.
- To boost the use of local public transport services as an alternative to moving by car.
- Reducing GHG emissions and traffic and parking congestions.

Padua demo participants filled a total of 13 USI questionnaires for travellers and 4 USI questionnaires for TSPs. The modification of the USI questionnaire in order to allow users to provide comments after the assessment of each selected functionality enabled the collection of some useful feedback. The number of respondents was also affected by the demo timing, as the demo was organized right after Easter holidays and before a very important bank holiday in Italy. Indeed, considering that the main target group for Padua demo was the university community, this must be taken into consideration. The calendar of the demo was defined together with CFMs partners. Padua demo was initially scheduled for end of March 2023, but the integration of Trenitalia and Busitalia TSPs was particularly complex, and the integration window was extended. The calendar was also affected by the fact that Padua was a RIDE2RAIL demo too, and RIDE2RAIL end month was April 2023. In synthesis, the demo could only be organized in April 2023, with all the limitations and constraints linked to the Easter holidays period. However, it was important to engage with the local community of students and get their feedback on the IP4 solutions, which was done successfully.

The positive feedback from the testers regarded mainly:

- **Traveller's Feedback:** some people appreciated the functionality that permits to report to other travellers on the status of the modes of transportation involved, highlighting how it allows them to update and be updated, making the travel experience better.

Regarding the potential for improvement in the demo, some suggestions made by the testers may be useful for future developments of the application and similar projects:

- Some people had problems to use the application without being trained in it in advance. In fact, when using the application, it was difficult to find all the features that had been presented on the day of the training event. The user manual was believed very technical and the support of the demo team was crucial for users in solving issues and having sufficient guidance.
- Some people were discouraged from using the application because it had to be downloaded from a third-party site. Since it was necessary, in order to download the application, to go to a third-party site, the process was found to be cumbersome.

The execution of the demo in Padua made it possible to concretely test the developed technological solutions. The developed functionalities worked adequately during the days of the demo as testified by the absence of any bugs either on our part or on the part of the testers. Unfortunately, the low number of testers partially inhibited the amount of feedback that the demo team was able to collect. The technological solutions need further development and improvement to meet the growing demands for multimodal mobility on an individual level. Through the demo, the aim was to improve the quality of the transport services offered as well as to provide rural areas with more options in terms of travel possibilities. In spite of the fact that these solutions were successful in the demo setting, they also demonstrate the importance of tackling MaaS issues in order to provide a competitive mobility service that meets user demands and increases accessibility.