Current status & achievements

30/09/2015
MobiWallet Project

Start date: 01/02/2014
End date: 31/07/2016
Cost: 4,311,468.00 €
Funding: 2,154,991.00 €
Estimated effort: 592 PM
Call identifier: CIP-ICT-PSP-2013-7
MobiWallet addresses:

Interoperable Fare Management (IFM) solutions for sustainable urban transport
Focused on offering seamless intermodal mobility to entire cities and regions. These IFM services will deal with multiple modes across great geographical areas and interoperate with disparate passenger transport services.

**Mission:** to create a unified transport market for enhanced and more sustainable mobility across Europe
• MobiWallet Objectives
• Consortium
• WP Structures
• Pilots
• Updates from the pilots
  • Spain, Italy, UK, Serbia
• Technologies and transports modes
• Pilot evaluations
• Current achievements and future work
Objectives

- Encourage modal shift and seamless intermodal mobility to entire cities and regions
- Promote an enhanced and sustainable mobility for all users
- Improve cross border transportation capabilities
- Improve the quality and offer new services to improve mobility
- Know users acceptance, business models and sustainability
- Recommendations for Interoperability, best practices and guidelines
Design and provision of a mobile fare management system with unparalleled intelligence and functionalities, encompassing:

- a unified scheme seamlessly integrating various payment methods suitable for a wide range of transport services
- enhanced travel functionalities such as a personalized trip planning service
MobiWallet will be organized in **6 Work Packages**
15 companies and government bodies from 4 different European countries, all playing a significant role in:
  
  - transport domain
  - ticketing solutions
  - embedded systems

As a whole, the consortium will carry out 4 pilots to test the developed solutions in:

**Spain, Italy, United Kingdom and Serbia**

All the necessary stakeholders in the value-chain included to ensure:

- effective deployment in each pilot
- sustainability beyond the pilot phase

**Project’s coordinator:**

Indra
Pilots

MobiWallet will include the participation of hundreds of users in **4 pilot cities** across Europe

...because **the protagonist** in any smart transportation system is **the citizen** and it is improbable that any IFM system will ever succeed without their input!
The Spanish pilot will take place mostly in the city’s Urban Zone of Santander, but it will also include some outlying areas, particularly those covered by the private ferry available from the city centre to nearby towns in the metropolitan area.

Specific objectives:

- to provide for an IFM solution that can cover an entire city, involving up to 5 different modes of transportation
- to exploit the synergies between NFC contactless payment systems and smartphone technologies
Spanish Pilot: core elements implemented

- MobiWallet APP
- NFC Sticker MIFARE CLASSIC 1K
- Information centre: WebServices+DataBase
- Clearing House
- Payment gateway and clearing system

Allow users to:
- Register/Log in
- Manage and recharge their MobiWallet virtual account
- Acquire and validate travel entitlements & access the transport system
- Access additional services

Core of the Platform: Stores user’s data and transactions. Provides basic operations to users and operators to access and manage this information.

Virtual Point of Sale
Spanish Pilot: specific service deployments

Deployment of solutions based on the core elements developed, but adapted to the specific requirements of each mode, in order to co-exist with current solutions, with none/minimum equipment modification in operators’ side.

- **NFC – reads ID**
  - Select type/number of tickets and pay with virtual wallet

- **NFC-writes on sticker’s card map**
  - Validates ticket

- **NFC – reads sticker’s card map, validates ticket**

- **Communication with parking systems**
  - Provides cost and allows payment with user’s virtual wallet

- **Taxi driver**
  - Generate QR code with payment details

- **User**
  - Reads QR’s information and validates payment

- **Select type/number of tickets and pay with virtual wallet**
Due to the thousands of tourists and commuters which travel each day in the cities involved in the project (Pisa and Florence), the Italian Pilot aims to increase the efficiency of public transport services in synergy with private transport for a wide region.

Specific objectives:

- to reduce pollution emissions and to improve urban mobility
- to deploy a unified payment platform which provides several interoperable transport services
Italian Pilot
High level architecture

PisaBus Android app
Urban bus ticket (Pisa)

SIMIS web platform

Car-pooling

Bike sharing (Pisa)

Touristic bus parking slot monitoring – purchase parking pass (Parcheggio via Pietrasanta - Pisa).

Mobiticket Android app
Tram/bus ticket – car parking

Park & Ride
Scandicci (Florence)

In collaboration with

in collaboration with
## Italian Pilot

### Transport services and payment modes

<table>
<thead>
<tr>
<th>City</th>
<th>Touristic/urban bus</th>
<th>Car pooling</th>
<th>Bike sharing</th>
<th>Car parking</th>
<th>Tram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pisa</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Scandicci (Florence)</td>
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<td>x</td>
<td>x</td>
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</table>

<table>
<thead>
<tr>
<th>Payment mode</th>
<th>Tram</th>
<th>Car parking</th>
<th>Touristic bus</th>
<th>Car pooling</th>
<th>Bike sharing</th>
<th>Urban bus</th>
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</thead>
<tbody>
<tr>
<td>Cash</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Credit cards</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Other electronic payment options (i.e. qr code, PayPal)</td>
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<td></td>
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<tr>
<td>Mobile (via SMS)</td>
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<td>x</td>
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</tbody>
</table>
- Intermodal area (car-parking, urban bus stop, touristic parking slot and several facilities for tourists).
- Technologies: traffic sensors. M2M GW.
- Scope: Touristic bus traffic flow monitoring for parking occupancy estimation. Parking pass payment via credit card.
- Car parking area near Resistenza tram stop.
- Scope: car parking payment via QR-code credit card. Tram ticket via SMS/PayPal.

In collaboration with aTaf
Italian Pilot technological solutions

The PisaBus Android app
The Mobiticket "Park & Ride" Android app
Car pooling
Italian Pilot
technological solutions

SIMIS web server
United Kingdom Pilot

The UK pilot in Birmingham will implement a fare management engine (MobiWallet Engine), offering a complete public transport mobility solution for:

- planning a journey in real time
- selecting the most appropriate fare for specific journey needs
- purchasing a travel ticket from a recommended list (intelligent ticket options)
- Fulfil ticket purchases using NFC mobile technology or through remote network readers (ITSO technology)
UK Pilot Update: Remote Fulfilment

Deployment of our **NFC and Remote Reader** fulfilment services were **completed in May** of this year, these are now in full operation throughout the West Midlands and monitoring of these provisions have commenced;

- New Swift NCF Application
- 100 Remote readers/collector's

Users can transfer their travel ticket purchase onto a Swift card using **NFC technology** through a mobile phone or ITSO technology through remote readers.
UK Pilot Update: Journey Planner Enhancements; ‘MobiWallet Engine’: System development and build works have been concluded; the enhanced Journey planner now provides intelligent ticket options/results based upon journey’s planned, using a new user friendly front end interface.
Improve the management of the public transportation network in the city of Novi Sad

...starting from the public city bus transport network

the intention is to extend it to other transportation means (such as rental bikes and taxis) and networks, promoting and encouraging the greater use of alternative transport modes other than busses
Current state

Detailed scenario agreed between all Serbian partners.

About to start testing the pilot by citizens volunteers in real conditions.

Active modes

- City bus transport involving 12 buses with fleetNET (location, speed) and some with ekoNET devices (pollution)

Smartphone app is ready, on google play, to be tested in real conditions.

Pilot implementation kit includes:

- QR code stickers on bus stops for mobile app installation and access to services
- QR code based validators (readers) as stickers in buses
- QR code based cash vouchers for the cash payment option (can be bought at JGSP selling points)
Key Pilot Elements implemented

**Medium**
- MobiWallet APP

**Platform**
- Bus stop located QR code sticker for accessing real-time info on busses
- Core of the Platform: Stores user’s data and transactions. Stores data from devices providing additional services. Provides basic operations to users and operators to access and manage this information.

**Gateway**
- Mobile network operators - DCB (Telecom Srbija)
- Cash vouchers
- Payment Cards
- Pay Pal
- Payment gateway and clearing system to manage user’s credit (e.g. cash vouchers) and payments as well as all the transfers to the different operators according to the use of their services.

**Allow users to:**
- Register/Log in
- Access info on bus arrival times, tourist info, air pollution info
- Select and purchase travel tickets using cash vouchers or credit card
- Validate QR based ticket and access the transport means
QR code based technology

- QR code based app installation (if not having the app)
- QR code initiated augmented reality interface for access to all available services (arrival times, bus positions, maps with buses, ticket purchase)
QR code based technology

QR code based optical ticket validation (required internet connection)

QR code printed validator when optically scanned, completes the ticket validation

QR code based travel tickets provided in a PkPass format
NS BIKE sticker placed on rental bike stations and enables the following services:

• Arrival time for the closest bus (bus stop)
• Planning route through the city
• Tourist landmarks
• Info on other BIKE stations
Rationale: Top up anywhere, travel everywhere!
Pilots Technologies

MobiWallet Fare Management System

Updated

Fare Management

Collection Mechanism

Transport Modes

INDRA iCard

SIMIS

SWIFT

DunavNET

NFC Smart Phone & NFC Stickers

Web-Based

NFC Smart Card

QR Code
Evaluating success

• Success is being measured through an extensive evaluation programme that is consistently measuring progress across all 4 pilots throughout the project.

• Following an incremental approach, first results are being gathered from pilot operation with the first users, while new functionalities and improvements are being sequentially included.

• Evaluation across the cities is standardised and based on the results gathered through snapshot surveys, pre, through and post-trial surveys, focus groups, balanced score-cards and analysis of broader base line data.

• The objective of the evaluation works package is to provide a detailed understanding of the project with the intention to understand the potential for full-scale deployment across European Cities.
Current achievements

- **Main software components deployed** in each of the pilots, including: APPs, Web-based platforms, payment gateways, information and planner services, fare engines.

- **Installation** of remote readers and validation equipment through the cities and modes involved.

- Systems have been put into operation and the **first volunteers** have registered and started to use them in their daily trips.

- **Feedback** received from users (travellers and operators)

- First achievements towards **interoperability among pilots**
Future steps

• **User’s recruitment and tests** will continue for the next months, in order to evaluate:
  • the performance of the systems
  • the success of the initiative
  • the possibilities of a large scale deployment

• Investigating opportunities for closer **interoperability** among pilots

• Generate **recommendations** for Interoperability, best practices and guidelines

• **Exploitation** and sustainability analysis
Stay tuned!

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