

Output factsheet: Pilot implementation of ICT enhanced services for smart parking for Brno's FUA

Project index number and acronym	CE243 SOLEZ
Lead partner	Municipality of Vicenza
Output number and title	O.T3.1 - Pilot implementation of ICT-enhanced services for smart parking (in FUA Brno)
Investment number and title (if applicable)	n/a
Responsible partner (PP name and number)	KORDIS JMK (PP 5)
Project website	http://interreg-central.eu/solez
Delivery date	01/2020

Summary description of the pilot action (including investment, if applicable) explaining its experimental nature and demonstration character

The pilot action in Brno functional urban area (FUA) lied in development and installation of a smart parking solution on a selected P+R car park. Objectives of the activity were to promote public transport usage, inform drivers about free parking capacities and thus lower the number of vehicles entering the city of Brno - the main city of the FUA. During the initial phase of the project, KORDIS JMK analyzed occupancy of car parks near railway stations within Brno FUA. Both, official parking lots and land used for unofficial parking have been observed to choose the most appropriate location for implementation of a smart parking system. As a most desirable car park for the pilot test has been chosen the P+R area near the railway station in Blansko.

As a second step, KORDIS JMK together with CDV explored the situation on the car park and designed technical solution that took into consideration physical parameters of the car park, roads in surrounding, and behavior of drivers. Following up the preparation of technical specification, public procurement of desirable technology was launched.

The pilot site has been equipped with a system based on magnetic parking detectors. The system installed consists of 6 traffic flow detectors and 7 calibration parking occupancy detectors and the relevant communication infrastructure (1 control unit and 2 repeaters).

Traffic flow detectors and parking occupancy detectors were embedded into the roadway and below the given parking places. Since that time the communication infrastructure has collected data about the occupancy of P+R and this information is accessible through API.

End-users can watch the current occupancy of P+R on the website <https://zaparkuj.idsjmk.cz/> and in a mobile application for Android - <https://play.google.com/store/apps/details?id=idsjmk.parkandride>.

Implementation of the pilot action enabled to test in Brno FUA new technology for monitoring of parking occupancy. The solution chosen presents affordable purchase costs for municipalities if they decide to monitor parking occupancy. Besides that, database of all relevant P+R car parks in Brno FUA but outside of the city of Brno has been created. End-users can watch the available parking space from the afore mentioned links. One of the main achievements of Brno Pilot Action was to increase awareness in commuters on possibility and effectiveness of Park and Ride options, thus favoring the usage of Public Transport but also reducing time and “useless trips” searching for a parking. At the same time, Pilot Action contributed to increase awareness and knowledge of policy makers about existing possibilities for better organizing and exploiting parking areas near to PT stations, contributing to reduce congestions, inappropriate use of parking slots and other negativities.

NUTS region(s) concerned by the pilot action (relevant NUTS level)

The smart parking solution that has been developed for the P+R car park in Blansko serves as a pilot site for municipalities in the whole FUA. Results of the pilot action was disseminated among all municipal mayors in the South Moravian Region - NUTS 3, CZ064 - Jihomoravský kraj.

Investment costs (EUR), if applicable

9.014 € Thematic Equipment
2.118 € Works and Infrastructures

Expected impact and benefits of the pilot action for the concerned territory and target groups and leverage of additional funds (if applicable)

The project enabled involvement of technical experts from the Transport research center to design and test for the first time an innovative smart parking solution in a municipality outside of the core city of the FUA. With respect to the new parking regulation scheme in the City of Brno, the implemented pilot contributed to rising awareness about P+R car parks near railway stations among commuters. The solution detecting occupancy of the car park is suitable for further replication in other municipalities. Description of the technical solution applied in the pilot has been disseminated in a brochure to mayors from roughly 700 municipalities in the Brno FUA. It might be considered that further municipalities in the FUA will implement the developed solution at their territory.

Sustainability of the pilot action results and transferability to other territories and stakeholders.

Sustainability of the pilot action results is ensured thanks the almost zero operational costs that can be covered from the municipal budget. The technology of the detection system on the P+R has been designed so that almost no maintenance is needed. The only element that needs to be replaced after several years are batteries in the detectors but their lifetime exceeds 7 years. The information system about P+R in Brno FUA (mobile app and web service) will be maintained by KORDIS JMK from own budget after the project end. Moreover, the information service about P+R was developed as open and modular system. Every municipality from the Brno FUA can update via KORDIS JMK the information about parking at its territory. Besides that, the implemented detection system on P+R in Blansko was promoted not only among commuters but also among mayors and it is to suppose that other municipalities will replicate the developed solution.

Lessons learned and added value of transnational cooperation of the pilot action implementation (including investment, if applicable)

Some of the municipalities in Brno FUA have already built car parks that are in line with the technical standards and traffic regulations, however a systematic approach and standardization of P+R car park in the whole Functional Urban Area (FUA) is still missing. That is why KORDIS JMK decided to implement a pilot project of a smart parking solution and use it to spread this experience and provide guidance to other municipalities in the FUA. However, the sustainability of the system can be achieved only with the common rules for various public investors, in order to integrate any technological solution implemented by singular municipalities within one system and provide the information to end users via various tools. It is foreseen that KORDIS JMK, as coordinator of the public transport services in the South Moravian Region, provides technical standards and recommendations to the municipalities to create a single monitoring system with standard and open data. Thanks to SOLEZ pilot action and supported by the transnational cooperation, KORDIS JMK developed a tool for FUA municipalities that can be easily replicated under proper guidance.

Contribution to/ compliance with:

- relevant regulatory requirements
- sustainable development - environmental effects. In case of risk of negative effects, mitigation measures introduced
- horizontal principles such as equal opportunities and non-discrimination

The pilot action is in line with the general aim to increase the integration of sustainable modes of transport. This is mentioned e.g. in the Sustainable Mobility Plan for the city of Brno. Support of P+R at railway stations is also in line with the newly developed residential parking system in Brno. The technical solution implemented within the pilot action includes the information system for commuters promoting the usage of public transport and thus lowering the usage of private cars heading to the city of Brno and return. Even if the pilot does not influence gradually the air quality and climate as its scale within the transport sector of the Brno FUA is very small, it might be supposed that the effects regarding the environment and sustainable development are positive.

References to relevant deliverables (e.g. pilot action report, studies), investment factsheet and web-links

If applicable, additional documentation, pictures or images to be provided as annex

The ICT smart parking tool developed during the project are described in the following deliverables:

- **D.T2.1.1** - *Transnational review and user requirements of smart parking solutions*
- **D.T2.1.2** - *Overall design and Regulation Schemes and related Data Management System*
- **D.T2.1.3** - *Smart Parking tool developed*

The full description of the Pilot Action implementation has been described in the project deliverables:

- **D.T3.1.3** - *Report on Pilot Actions on Smart Parking*
- **D.T3.4.1** - *Evaluation report of Smart Parking Pilot Actions*

The documents are available on www.interreg-central.eu/SOLEZ in the Publication section.



Fig 01: P+ R Blansko pilot site



Fig 02: Installation of sensors at parking spot



Fig 03: Graphs from SOLEZ software application



Fig 04: Graphs from SOLEZ software application

Here below a link to the smart phone application developed as communication layer:

- <https://zaparkuj.idsjmk.cz/>
- Mobile app for Android - <https://play.google.com/store/apps/details?id=idsjmk.parkandride>