FinEst Centre
for Smart Cities

SMART CITY CHALLENGE 2024

City Challenge

Max 3 pages

send to smartcity@taltech.ee by May 15, 2024

Challenge Title – (max 5 words, no acronyms) Smart city parking management system

City/county and country: Maribor, Slovenia

Main contact from your city/county – name, organization, job title, e-mail, phone

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1. What is the future urban challenge that would need a solution to?

- **Please describe the challenge of your city / county neighboring a city?**

During major events and on a daily basis in the city, the problem of finding a parking space quickly arises. To reduce traffic jams that occur when looking for a parking space, it would be necessary to find a solution for equiping the parking lots in the city with appropriate sensoring/monitoring system to monitor occupancy of parking spaces at the city level. Searching for free parking spaces in city generates a large proportion of traffic flows (congestion), which could be avoided by establishing comprehensive monitoring or digital control over the occupancy of parking spaces in the city. The so-called white zones (paid parking spaces) are currently controlled physically by parking supervisors and city wardens. The city has not yet had sufficient digital maturity to implement solutions such as the introduction of smart parking lots with real time monitoring. The aforementioned challenge is defined in the Smart city strategy of Maribor 2030, which was created in 2022

With the development and implementation of appropriate solution that would enable the digitalization of the sensoring/monitoring control of the cities parking spaces, controls could be carried out much more easily and time efficiently and at the same time offering the possibility to citizens for searching of free parking spaces (also for parking spaces for disabled).

The implemented communication network solution should provide needed information on the situation on parking lots in real time.

- Why is it important for your city to solve it? How big priority it is for you and why?

The solution would affect all residents of the city, road users, parking lot managers, police officers and parking lot supervisors. The solution should take into consideration the establishment of system, control and monitoring of the system. The project would make possible to reduce environmental emissions, save users' time, improve traffic safety, optimize the work of

supervisors and wardens, connect to other smart city solutions and monitor statistical traffic data.This communication network solution should provide information on the situation of parking lots in real time. The system should allow the visual overview of all parking lots in the city and enable the overview of the informations on parking lots to end users, supervisors and wardens with appropriate data processing. Analyses should be made to determine the appropriate places and points in the city for enablement of the installation of signposts that inform users in a timely manner about the free requested parking spaces and enablement of an efficient search for parking spaces. Such a measure would reduce the number of drives in the city, resulting in less pollution, time savings and easier control over parking. For the succesfull implementation of the system it would be necessary to determine the locations for installment of appropriate suitable sensoring system. The developed solution will contribute to smart city solutions and obtain data which could be used in real time for various analysis and displayment of the data also after the implementation of the pilot.

- Is this a unique challenge/problem of your city, why or is this by your knowledge a challenge/problem that many cities have – which kind of other cities?

With the development of urbanization, the number of motor vehicles has increased rapidly, and the problem of parking difficulty has become the main problem on the way to the healthy development of urban traffic. Especially in the central areas of large cities, the contradiction between supply and demand is prominent due to the dense population and the lagging construction of parking facilities. Such problems are rapidly emerging in large and medium-sized cities, which have a negative impact on the social and economic development of cities (Tang R., 2023. Treatment Strategy for Parking problems in Large Cities).

2. Innovation.

- How have you solved that issue so far? Why aren't the present solutions good enough? Are there legal obstacles, which ones?

The city is currently solving the problem with physical controls of parking lots on the city level. Controls are carried out as part of municipalities services. The controls are made with the help of wardens. Physical controls by employees are not enabling real-time controls nor are there currently existing any methods with which all residents would have an overview of accessibility of free parking spaces in the city in real time. There are no legal obstacles on the topic.

- What should be the main features, characteristics of the future solution to be potentially best for that challenge or problem?

The solution should provide functions that allow a visual inspection of all free parking lots in the city and the occupancy of parking spaces. The digital monitoring system should be user friendly, easy to use for both the city officials/city wardens and citizens.

3. Expected impact of your pilot solution.

- What is the expected impact to your city environment you expect to see if the challenge gets solved?

Such a measure would reduce the number of drives in the city, resulting in less pollution and less CO2 emissions on the level of the city. The project would enable the reduction of environmental emissions.

What is the expected impact to your citizens you expect to see if the challenge gets solved?

The solution will improve the citizens time savings (in the event that there is no parking space available, citizens can use public transport), availability of data in real time, monitoring of statistical traffic data in real time., improvement of traffic safety, connect to other smart city solutions and monitor statistical traffic data.

- What is the expected impact to your city governance you expect to see if the challenge gets solved?

The solution will allow easier control over parking lots, improvement of traffic safety, optimisation of work for supervisors and wardens, availability of data in real time, monitoring of statistical traffic data in real time and connection to other smart city solutions and monitoring of statistical traffic data.

4. Piloting

- Would you be interested to become a piloting partner of a proposed solution? Why? Describe shortly your capability to participate.

We would be interested to become a piloting partner. Maribor is the second largest city in the Slovenia in Podravje region and has the ambition to work climate neutrality by 2030. Local policies and strategies addressing the needs of citizens are developed and implemented within the close cooperation with different stakeholders. City has adopteed most strategic documents. Maribor is building on its previously adopted strategic documents, i.e. the Sustainable Urban Mobility Plan (SUMP), which was adopted in 2015 and the Sustainable Urban Logistic Plan (SULP), which was adopted in 2019. Both contain several specific measures and action plans on how to make traffic and transport in the city more sustainable, greener, and thus friendlier to the citizens. City of Maribor is responsible for planning and implementing mobility infrastructure projects and provision of mobility services delivered through public transport company, for inland navigation, traffic signalisation and parking facilities. In recent years have been launched in partnership between NGOs, academic and business organizations: a dynamic bus stop display, free WI-FI on city buses, a protected bicycle store room, expansion of the RTPI system (real time passenger information) of PT, pedestrian zones, regulation of some cycling paths and pedestrian connections, clean public transport with CNG /100% ELECTIRC bus fleet, new cycling routes, bus on demand in pediestiran zone. Maribor has its own Public transport operator- Marprom, Bike sharing system MBajk, Cable car and different regional and national PT providers (regional bus and railways).