

Output factsheet: Pilot implementation of ICT enhanced services for smart parking for Dubrovnik'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 Dubrovnik)
Investment number and title (if applicable)	n/a
Responsible partner (PP name and number)	City of Dubrovnik (PP 2)
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 is based on the introduction of the parking regulation scheme where access traffic regulations are implemented. Parking regulation scheme focuses on avoiding cruising car when finding place for parking in front of Dubrovnik historical zone.

The municipality of Dubrovnik wants to offer the more strategic management of traffic in a sustainable way and contribute to sustainable vision (Action plan) for Dubrovnik city by:

- persuade tourists to park their cars on the periphery of the city and to use public transport
- reduce congestion
- lower the CO2 emissions
- improve quality of and fair distribution of public space

The pilot action consisted of two parts.

In the first part (customization action), was performed the general characteristics of the area, the passport of the area in relation to the infrastructure and data collection.

In the second part, we made a questionnaire by which we wanted to know if there will need to put on smart parking in Dubrovnik and if this will contribute to decrease the CO2 emissions in the City center. With this questionnaire, we found out that big number of the people who took the questionnaire would use smart parking application and by this, we decided that we should develop an app which will for sure reduce circling so many cars around the city center. In the meantime, public company Sanitat already made a public procurement for buying smart parking sensors and the development of the Smart parking application. For this reason, during the Pilot Activity, traffic data in the city have been collected manually, and this gave us exact data about the rush hours, driver's behaviors

and needs for parking places. Based on this knowledge, City of Dubrovnik is now committed to develop, together with Sanitat, a new parking and traffic regulation which will give us concrete results in terms of reduction of CO2 emissions, reduction of congestion and quality of and fair distribution of public space.

All these steps have been made on the basis of the manual (DT2.1.2) which is part of the OT2.1.

The survey has been repeated daily of parking drivers behaviors in a specific location. The survey was conducted during the pilot testing on this location: Obala pape Ivana Pavla II, Ulica Pera Bakića (Petlja 9), Ulica druge dalmatinske brigade (izlaz prema magistrali), Gornji kono (Depozit).

Thanks to monitoring and evaluating the Dubrovnik policy makers now have a data which can help in the debate with the most important stakeholders in parking strategy. Data provides objective information about traffic flow in the city center. The questionnaire from elaboration showed us that we still have space to make the prices of the parking higher. We believe that with this action we will consent people to park their cars on the periphery of the city and use our public transport to get to the city center.

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

HR037 -Dubrovnik

Investment costs (EUR), if applicable

Only service costs were charged on the project. Investments will be covered by third parties with own resources.

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

The pilot activity will contribute to the improvement of parking regulation scheme for Dubrovnik, which direct expected impact on Dubrovnik FUA mobility. The results from pilot action (manual counting of traffic flow) are crucial for creating and evaluating the parking scheme.

The results of the pilot action will represent a good practice, also contributing to regulate the traffic in the city center. Collected data, for example, made us understand that we still have space to improve and to increase the prices of the parking in the city enter. The City of Dubrovnik, alongside with the Sanitat, will develop new parking regulation strategies and rules based on data collected through SOLEZ pilot action, aiming at optimizing the usage of parking slot and at reducing “parasite travels” in both the city center and at FUA level. Other FUA municipalities can learn from this experience and will be invited to replicate similar approaches in their territories.

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

Pilot Action results are now available and ready to be transferred at policy and decision-making levels. Some tangible investments (i.e. purchase of parking sensors) have already been done, confirming the commitment of both local parking manager (Sanitat) and city administrators to go on in that direction. The report of how to

proceed with data coming from traffic flow detection to create parking strategy for Dubrovnik FUA has been prepared during SOLEZ activities and are available on project deliverables on project website (see reference box below).

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

The pilot action clearly highlighted the need for the City administration to put more efforts on future , such as traffic regulation and parking regulation strategy.

The fundamental impediment to implement a smart parking system is not the lack of technological solutions or planning skills but rather missing data. Therefore, a questionnaire survey and traffic flow analysis were mandatory for further steps. The data collected clearly defined the strategy that the city need to follow to reduce congestion as well as to decrease CO2 emissions.

Furthermore, the Pilot action implementation underlined how a good communication is also essential for the success of planning decisions. Involving stakeholders is also a fundamental requirement of sustainable mobility planning. It is an opportunity for city administrations to incorporate local expertise and feedback into the best possible outcome in terms of finding consensus.

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

Sustainable development: the pilot actions combined with the investment contribute to stimulating market transformation towards implementation other smart systems, mobilizing public & private investments to new parking system.

Equal opportunity: N/A

Environment: by giving the possibility to predicted traffic flow in given day and time give opportunity to improve the planning of low carbon mobility connected with traffic regulation and access restriction schemes in the Dubrovnik Functional Urban Areas.

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.






DELTA GRAD		Ulica Ivana Pavla II: Ulaz						MJESTO:		Dubrovnik				
ULAZNI PODACI - RUČNO BROJANJE		DAN, DATUM:						16.04.2019.						
Legenda:		MT- motori, OV - osobno vozilo, BUS L-bus LIBERTAS, BUS/KAMION , KMT - kombi/minibus/lako teretno vozilo												
ULAZ		SVEUKUPNO												
SAT [h]	Σ	 MT		 OV		 BUS L		 BUS/KAMION		 KMT		UKUPNO	PAJ	
		VOZILA	%	VOZILA	%	VOZILA	%	VOZILA	%	VOZILA	%			
		6:00-7:00	Σ	6	1,5	323	82,8	12	3,1	21	5,4			28
7:00-8:00	Σ	21	2,9	608	84,0	19	2,6	26	3,6	50	6,9	724	100	
8:00-9:00	Σ	28	4,5	496	79,4	12	1,9	27	4,3	62	9,9	625	100	
9:00-10:00	Σ	25	4,4	449	79,6	12	2,1	25	4,4	53	9,4	564	100	
10:00-11:00	Σ	32	7,1	368	81,2	9	2,0	15	3,3	29	6,4	453	100	
11:00-12:00	Σ	24	5,4	363	81,0	7	1,6	25	5,6	29	6,5	448	100	
12:00-13:00	Σ	24	6,5	278	75,5	10	2,7	17	4,6	39	10,6	368	100	
13:00-14:00	Σ	25	5,9	320	75,7	9	2,1	24	5,7	45	10,6	423	100	
14:00-15:00	Σ	24	5,5	358	81,5	9	2,1	15	3,4	33	7,5	439	100	
15:00-16:00	Σ	25	5,7	369	83,5	11	2,5	11	2,5	26	5,9	442	100	
16:00-17:00	Σ	16	3,8	357	84,6	8	1,9	13	3,1	28	6,6	422	100	
17:00-18:00	Σ	18	4,1	371	84,3	7	1,6	13	3,0	31	7,0	440	100	
18:00-19:00	Σ	27	6,4	356	84,0	8	1,9	10	2,4	23	5,4	424	100	
19:00-20:00	Σ	17	4,9	292	83,9	10	2,9	9	2,6	20	5,7	348	100	
20:00-21:00	Σ	9	3,1	245	83,1	10	3,4	11	3,7	20	6,8	295	100	
21:00-22:00	Σ	7	4,3	137	84,6	5	3,1	4	2,5	9	5,6	162	100	
UKUPNO	6:00-22:00	Σ	328	4,7	5690	81,7	158	2,3	266	3,8	525	7,5	6967	100

Figure 1: An example of table for measurement record of traffic flow

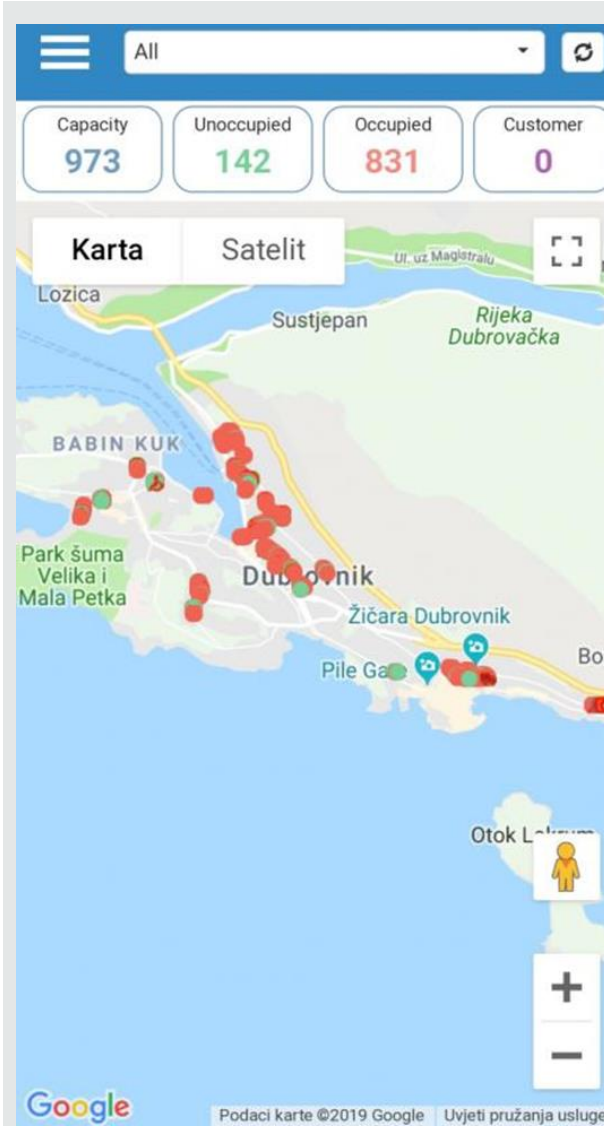


Figure 2: Application of smart parking system deployment by SANITAT Company