DOCUMENTATION OF SUCCESFULLY DEMONSTRATED TOOLS

D.T2.6.2.

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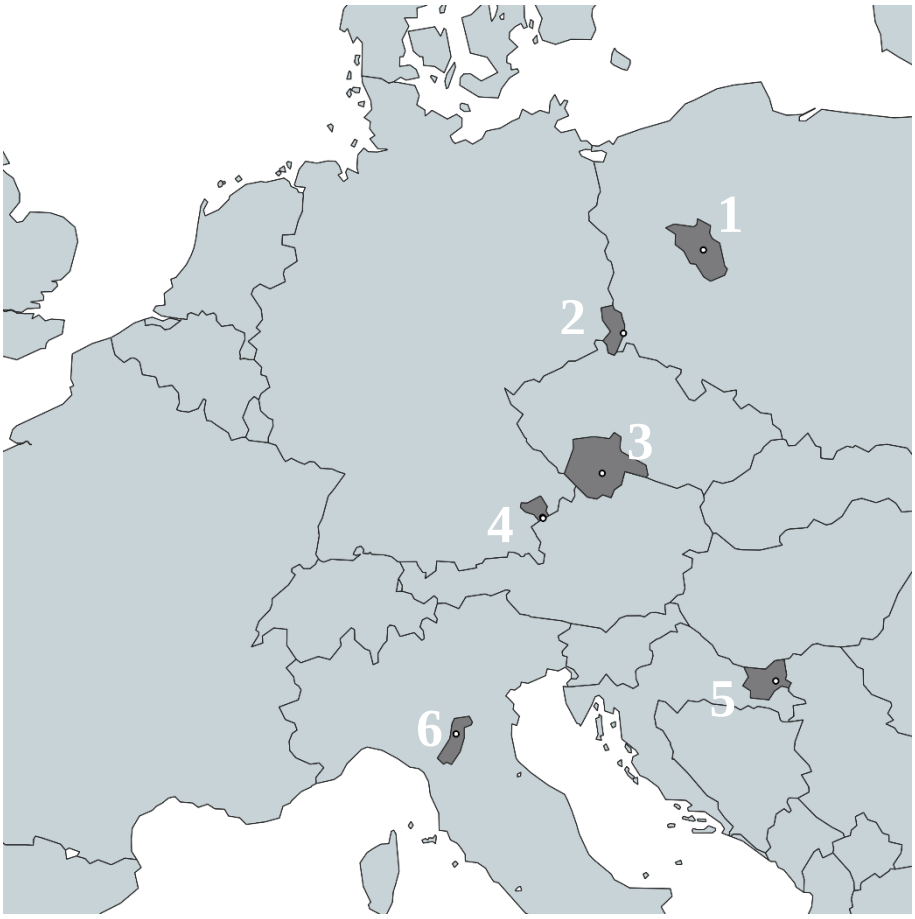
1. Aim of the deliverable

During the pilot activities of the RegiaMobil project, several smart tools were applied in all six pilot sites. The type and definition of the tools were collected, categorized, and described in the deliverable "D.T2.6.1, The definition of tool-box elements". This deliverable "D.T2.6.2: The documentation of successfully demonstrated tools" is a structured best practice demonstration of the tool-box. While all pilot partners have their own final report, which provides detailed insights of the plans and results of their pilot activities, this document turns the focus on the commonly applicable tools and provides a comparative description. This document aims to support other regions to implement the same approach, therefore besides a short description of the pilot, general statistical data of the pilot region is also showed.

2. Pilot regions and activities

The RegiaMobil project was realized in six pilot areas in five countries. Poznan district (represented by *Wielkopolska* region) from Poland, Görlitz district (represented by *Saxony* state) and *Rottal-Inn* district from Bavaria, Germany, *South Bohemia* from Czechia (represented by regional transport organizer), Osjecko-baranjska region (represented by *Osijek* city) from Croatia and *Modena* region (represented by regional transport organizer) from Italy. Pilot areas and pilot partners do not always represent the same NUTS level. The names in italic will be used in the followings to refer to the regions and pilot sites in general (as it was commonly used throughout the project). For comparative reasons statistical data was collected on NUTS3 level in every case. 1. Table and 1. Figure provide the most basic information about the pilot regions. Three relevant types of descriptive statistical data are represented in 1. Table for every pilot region. All of them were collected from the Eurostat database (GDP is rounded to million euro) and support the benchmarking.

In Wielkopolska, an integrated online journey planner was built, with the necessary IT infrastructure for the bus operators as well. In Saxony, a new bus service was tested for elderly citizens in rural areas. In South Bohemia, a new type of bus service was tested, which provided racks for bicycles. In Rottal-Inn, the original pilot plan was to launch new cross-border on-demand bus service between Simbach am Inn and Branau am Inn. While the pandemic made it impossible to carry out the pilot as it was planned, some preparation tools could be demonstrated successfully. In Osijek, a multimodal journey planner was carried out with options for public transport and shared modes as well. In Modena, IT support of intramodality and on-demand services were enhanced. Every pilot activity has a more in-depth description in their respective final demonstration report.



1. Figure Pilot regions of RegiaMobil project in Central Europe

1. Table General statistics of the pilot regions

map nr.	NUTS3	Total population	Population density [persons/sqr.m]	GDP [million €]
1.	Poznansky (Wielkopolska)	668 762	136,2	10 316
2.	Görlitz (Saxony)	304 099	144,4	8 328
3.	South Bohemia	644 083	66,9	10 184
4.	Rottal-Inn	121 502	95	3 974
5.	Osjecko-baranjska (Osijek)	270 877	67,5	2 610
6.	Modena	707 119	263,6	27 485

3. Overview of the demonstrated tools

The pilot partners applied differently the avaliable smart mobility tools. 2. Table shows an overview, which tool was used in which pilot site. Almost all listed tools were successfully demonstrated at least at one pilot site, but in case of many tools more use cases were realized. Considering the tool "Implementing fare integration" was an important part of the previously realized Rumobil project, and accordingly had a significant role in the Rumobil strategy which is also the basis of RegiaMobil strategy, but at the end, no pilot site used this tool in RegiaMobil project due to different reasons, mostly related to the complexity of the introduction of such a measure.

2. Table Overview of demonstrated tools

Tools / Pilot sites	Rottal-Inn	South Bohemia	Saxony	Wielkopolska	Osijek	Modena
1. Using spatial analysis	x		x			
2. Interviewing and surveying potential users	x		x			
3. Developing smart data collection and analysis				x	x	x
4. Building stakeholder network for cooperation	x	x				
5. Focusing on multimodality				x	x	
6. Focusing on interoperability		x				
7. Implementing fare integration						
8. Procuring new auxiliary or on-demand transport services	x		x			
9. Developing the IT integration of various modes					x	x
10. Using participatory processes for residents			x			
11. Making campaign actions		x				
12. Providing real-time information		x		x	x	x
13. Using multiple channels	x				x	
14. Making non-mobility business cooperation		x				

3. Table represents the most tangible data related to the tools: the amount of budget spent on the specific action, and the required timespan. This information could provide essential support to budgeting and scheduling similar activities. The workdays are presented only for scheduling, but are not suitable to calculate the required manpower. Providing estimations on the budget and the required time can be misleading in some cases, such as in case of the tool 4 "Building stakeholder network", since these are rather continuous activities. In case of Modena, tool 9 and tool 12 were covered by a single IT development, therefore in this case a break-down of costs would be misleading.

3. Table Workdays and budgets of demonstrated tools

Tool	Pilot site	Time required [nr. of workdays]	Budget [€]
1. Using spatial analysis	Rottal-Inn	60	5 500
2. Interviewing and surveying potential users	Saxony	45	9 500
	Rottal-Inn	20	2 700
3. Developing smart data collection and analysis	Osijek	30	10 000
	Wielkopolska	120	43 000
5. Focusing on multimodality	Osijek	15	15 000
	Wielkopolska	60	10 000
6. Focusing on interoperability	South Bohemia	40	85 000
8. Procuring new auxiliary or on-demand transport services	Saxony	40	22 500
	Rottal-Inn	20	3 100
9. Developing the IT integration of various modes	Osijek	60	25 000
	Modena	60 (*)	19 500 (*)
10. Using participatory processes for residents	Saxony	40	20 000
11. Making campaign actions	South Bohemia	40	10 000
12. Providing real-time information	Osijek	10	5 000
	Wielkopolska	30	12 000
	Modena	60 (*)	19 500 (*)
13. Using multiple channels	Osijek	25	8 000
14. Making non-mobility business cooperation	South Bohemia	<5	0

4. Use cases of the tool demonstrations

The pilots have successfully demonstrated altogether 25 use cases, which apply the listed tools. Several tools were implemented at more pilot locations, thus they appear separately in order to present the best practices in different local contexts. Each use case description includes some practical details about the realization, the lessons learnt during the implementation, and some information about the duration and length of the demonstration.

1. Use case Using spatial analysis in Rottal-Inn
2. Use case Using spatial analysis in Saxony
3. Use case Interviewing and surveying potential users in Rottal-Inn
4. Use case Interviewing and surveying potential users in Saxony
5. Use case Developing smart data collection and analysis in Wielkopolska
6. Use case Developing smart data collection and analysis in Osijek
7. Use case Developing smart data collection and analysis in Modena
8. Use case Building stakeholder network for cooperation in Rottal-Inn
9. Use case Building stakeholder network for cooperation in South Bohemia
10. Use case Focusing on multimodality in Wielkopolska
11. Use case Focusing on multimodality in Osijek
12. Use case Focusing on interoperability in South Bohemia
13. Use case Procuring new auxiliary or on-demand transport services in Rottal-Inn
14. Use case Procuring new auxiliary or on-demand transport services in Saxony
15. Use case Developing the IT integration of various modes in Osijek
16. Use case Developing the IT integration of various modes in Modena
17. Use case Using participatory processes for residents in Saxony
18. Use case Making campaign actions in South Bohemia
19. Use case Providing real-time information in South Bohemia
20. Use case Providing real-time information in Wielkopolska
21. Use case Providing real-time information in Osijek
22. Use case Providing real-time information in Modena
23. Use case Using multiple channels in Rottal-Inn
25. Use case Making non-mobility business cooperation in South Bohemia

Tool	Tested in
1. Using spatial analysis	Rottal-Inn

Practical details

In order to obtain a holistic view of the study area, the area was examined with regard to various aspects. In the first step, the spatial structure was considered, including socio-demographic data, settlement structures and important destinations, such as schools, shopping facilities or medical care. In the second step, the transport structure was considered, including important transport routes in rail and road traffic. This was followed by an examination of the existing public transport structure, with regard to the spatial and temporal development through stops and the frequency of service. From these steps, it was then possible to determine the development quality for the study area, which shows how well the pilot area is developed by and gives initial indications of which options can be used to improve the development. The processing was carried out using various data sources, which were processed and visualized in the GIS program QGIS.

Lessons learnt

The spatial analysis or public transport analysis is an indispensable tool and forms the basis of any investigation of a project space. Not only existing structures are worked out, which are used for the later treatment, but also the local knowledge of the project co-workers is sharpened thereby and a feeling for the project area is created. At the same time, the results can be visualized in the form of maps so that they are clearly recognizable and informative for others. The spatial analysis is a tool that will continue to be used at the beginning of such a project.

Length	Budget	More info
3 months	5,400 € / 2 = 2,700 € (co-budgeted with surveys).	District Administration Rottal-Inn Sandra Obermeier, Sandra.OBERMEIER@rottal-inn.de

Tool	Tested in
1. Using spatial analysis	Saxony

Practical details

As part of a spatial analysis, the municipality, in cooperation with the civic association, examined the challenges facing the region. It was determined that although the municipality has a variety of services of general interest, these are not equally available to all residents of the 18 districts. Although it is the largest municipality in the Upper Lusatia-Lower Silesia planning region in terms of area, the municipality is not a basic center; the regional plan designates the municipality as a "municipality with a special municipal function of commerce".

Lessons learnt

"Services of general interest such as banks, (food) retail, doctors, pharmacies and others are only concentrated in the main town of Boxberg. However, there are only connections to the rail transport in the districts of Uhyst and Kitten. The pilot project was designed and implemented based on these and other findings from previous spatial analyses.

The spatial analysis showed that the mere presence of services of general interest is not sufficient if they cannot also be reached easily and reliably by all residents. It is important not only to analyse abstractly, but also to compare these analyses with the real conditions on site. Because even if the accessibility is given on paper, this is not necessarily possible at the times when the residents can or want to use the offers. The comfort of the citizens is also decisive. Regardless of financial aspects, the car is seen as a ""facilitator of mobility"". A tailor-made connection offer must exceed this convenience threshold."

Length	Budget	More info
N/A	N/A	Saxon State Ministry for Regional Development Peter Just, Peter.Just@smr.sachsen.de

Tool	Tested in
2. Interviewing and surveying potential users	Rottal-Inn

Practical details

Two surveys were conducted as part of the project. First, an online survey of households within the pilot area, and second, a survey of the mayors of the municipalities concerned. The online survey was conducted within one month, using the online tool "Sosci". The data was then downloaded as a spreadsheet and analysed using Excel. This made it possible to identify important connections both within and across borders, as well as the population's view of public transport.

The questioning of the mayors took place by means of a fillable PDF file. After receipt of the returned questionnaires, the answers were also transferred into Excel and evaluated there. This resulted in the evaluation of the public transport by the municipalities and important destinations for the municipalities.

Lessons learnt

Both fillable PDF and online surveys are target-oriented ways to survey involved parties. Online surveys are particularly suitable for a large number of respondents, as the results are automatically output as a table. In addition, a wide range of question types can be covered with the available tools. A disadvantage, however, is that the success of an online survey depends on the way it is advertised. It must also be designed in such a way that participants have minimal inhibitions about taking part. The survey by means of fillable PDFs, on the other hand, is suitable for capturing individual opinions from participants who are more closely involved with the topic. The evaluation is done manually and takes more time, but the questions can be designed more flexibly than with the online survey.

Length	Budget	More info
Survey period online survey: 1 month Survey period PDF: 2 weeks Evaluation: approx. 1 month"	5,400 € / 2 = 2,700 € (Other half on analysis).	District Administration Rottal-Inn Sandra Obermeier, Sandra.OBERMEIER@rottal-inn.de

Tool	Tested in
2. Interviewing and surveying potential users	Saxony

Practical details

"This process not only took place during the pilot project, but started earlier. The municipality and the citizens' association, which is actively supported by the municipality, used several rounds of questions and public appeals to find solutions for the special traffic situation in the municipality. The findings were used and further specified for the pilot action. Since the offer was primarily aimed at older residents, public events were organized in advance of the offer, despite the pandemic restrictions, at which suggestions for the design were taken up and incorporated into the offer.

The citizens' association is strongly integrated into the municipal administration and therefore has good opportunities to reach the population and thus the potential users. This facilitated communication and thus brought good insights for the implementation of the pilot action. Questionnaires were drawn up during the pilot campaign and deposited in the buses. The passengers were able to give further suggestions.

Lessons learnt

Unfortunately, the surveys did not take place using standardized surveys. Rather, the findings were the result of poorly structured individual discussions and public discussion groups. As a result, the service offering contained small but critical design errors and as a result did not receive the uptake originally expected. This made it necessary to adjust the offer and meant that the expected results were not initially achieved. Better surveys would have helped to make the pilot campaign more successful, especially given the difficult pandemic situation for public transport. Nevertheless, the way the survey was conducted using different communication channels was a success. Because despite the relatively low demand for the offer, the level of awareness of the campaign was high and the campaign was generally positively received.

Length	Budget	More info
45 days	9.520,00 Euro (one third of the Evaluation budget)	Saxon State Ministry for Regional Development Peter Just, Peter.Just@smr.sachsen.de

Tool	Tested in
3. Developing smart data collection and analysis	Wielkopolska

Practical details

The demo project has updated the application of UMWW. The data storage system was modified to a relational database and new data from the region was added. This operation made the application faster and with more storage capacity.

The publicly accessible part of the platform enables searching for the fastest connections taking into account changes between different means of transport. Passenger data are shown in real time on a LED screen mounted at a transfer junction in the south of Poznań. The IT application is functioning in a "mobile first" approach on satisfying the users of mobile devices. A Google Maps mechanism was implemented, allowing to determine the position of a bus stop on the basis of a satellite image.

The functionality of the RegiaMobil IT application can be extended to get such possibilities like ticket purchasing or following the vehicles on the virtual map. The application can be strengthened in the future by some artificial intelligence modules which will enable to project most optimal courses of the routes and timetables focusing on multimodality.

Lessons learnt

Recent events, related to the COVID-19 outbreak, have shown how essential IT systems are nowadays, which allow to react quickly in such crisis situations. In the case public transport it is necessary to take all possible measures so that in the event of another outbreak the UMWW is fully prepared for it.

The biggest challenge was to find an external IT expert who is a key actor to obtain a high quality and functional service. Additional problem was a growing price of external service in the field of IT technologies. There is also not a big spectrum of IT companies on the local or even national market which are experienced in work for solutions in public transport.

Length	Budget	More info
120 days	43 000,00 €	Marshal's Office of the Wielkopolska Region Piotr Kupczyk, Piotr.Kupczyk@umww.pl

6. Use case Developing smart data collection and analysis in Osijek

Tool	Tested in
3. Developing smart data collection and analysis	Osijek

Practical details

The task was to establish and configure a MMJP for travel planning, based on the Open-source platform DIGITRANSIT (which includes backend solution, frontend solution for end users and administrative interface for data editing), for passengers coming or going from CE.

Digitransit is a platform for planning a travel plan and providing information services to passengers in public transport. The application must contain open APIs (application program interface) for viewing, viewing, searching, and calculating real-time information on trips.

Lessons learnt

Thanks to the Digitransit platform, the development of a completely new system is not necessary because there is a developed frontend for users within it. The existing platform needs to be implemented and adapted linguistically and geographically to the CE area. The frontend part must be done in such a way that it is possible to connect all the elements with the corresponding services on the backend. The backend part of the platform should use a defined platform architecture modelled on Digitransit.

Length	Budget	More info
30 days	10.000,00 EUR	City Osijek Srećko Kukić, Srecko.Kukic@osijek.hr

Tool	Tested in
3. Developing smart data collection and analysis	Modena

Practical details

For a good planning of public transport services, it is first of all necessary to know them. However, for non-primary services such as those carried out in rural areas, data are not always available to guide decision-making processes.

The system introduced with the RUMOBIL project and evolved into the RegiaMobil project makes it possible to make available information that is valuable for this activity. Before this tool was available, only the number of trips made each day was known. Now the details of every single trip are available, for example when it was made and what origin and destination it had.

This information has proved invaluable in remodelling some DRT services and planning new ones that are in the studio. Right from the development stages of the idea of the new system, the indispensable objective was to obtain information deemed indispensable and this vision obviously influenced its entire construction phase.

Lessons learnt

With the use of the system developed in the RegiaMobil Project, the need to have data was confirmed that would allow us to know the services performed. This availability has proved indispensable in the decision-making processes but also to provide a higher quality of services.

In a sector such as that of mobility in great and continuous evolution compared to the past with perturbations that must be constantly monitored (for example the introduction of smart working, greater job mobility than in the past, increase in the school population in recent years, important immigration phenomena, etc.) and, if possible, anticipate in order to always provide an adequate PT service.

Length	Budget	More info
N/A	N/A	Agency for Mobility and Local Public Transport Modena S.P.A Daniele Berselli, berselli.d@amo.mo.it

Tool	Tested in
4. Building stakeholder network for cooperation	Rottal-Inn

Practical details

As representatives of the interests of the citizens, the mayors of the communities and cities are at the forefront. They know the hardships and needs of their citizens as well as the focal points relevant to public transport in their community. It is therefore very important to involve these people in the planning of new projects.

First, the RegiaMobil project was presented as part of a cross-border mayoral meeting and the municipalities were asked to help. The mayors were then asked to fill out a questionnaire and so they had the opportunity to give their view of the current situation in public transport.

At the same time, the population on the German and Austrian side was asked to take part in an online survey in order to get an overview of the cross-border routes actually taken. The possibility of participation was pointed out in various channels (newspaper, social media, website).

Lessons learnt

For a survey and the creation of a concept this kind of participation is sufficient in terms of type and scope. However, we have found that the identification of the population for the common cross-border area is only moderately present and therefore the willingness to take part in a survey was rather low. The willingness to participate in future projects should be encouraged more intensively.

The planned project was not implemented due to the corona pandemic. Before implementation, however, it would have been necessary to speak to the transport companies operating in the planned area. In addition, in a time without a corona pandemic with its restrictions and contact restrictions, in-depth workshops with the population would also be very helpful.

Length	Budget	More info
Stakeholders were included as part of the interviews.	Part of the implementation of the surveys	District Administration Rottal-Inn Sandra Obermeier, Sandra.OBERMEIER@rottal-inn.de

Tool	Tested in
4. Building stakeholder network for cooperation	South Bohemia

Practical details

The network of involved stakeholders has been established since the planning phase of the project. The Transport Coordinator is in constant contact with the representatives of the local government in its day-to-day activities. The daily connection works on the basis of remote access, once every six months a presentation meeting is held, during which other invited entities (employers, interest entities, tourist entities) are also present. For the planning phase, previously collected requirements for the creation of new connections were used, both by the municipality (i.e. for the lack of weekend connections for local residents) and by the tourist segment (i.e. the lack of tourist service of visited destinations within the region). These stakeholders were involved in the information campaign about the new service, which resulted in a larger scope and specific target groups. In the evaluation phase of the pilot project, the feedback from these groups was important, especially for the adjustment and modification of further operations paid for from their own resources.

Lessons learnt

The inclusion of different stakeholder groups will make it possible to project the local context into the planning of the new service and often to draw attention to possible problems that are not known in advance. To give concrete examples when planning a new bus line, local government representatives can provide valuable information on the technical condition of roads, socio-demographic aspects, provide legislative support and representatives of tourist organizations can provide important operational information.

The second important lesson learned is from mutual communication and dissemination of information in advertising campaigns. If each party puts something into the campaign, such a shared campaign is a win-win strategy for everyone.

Length	Budget	More info
Continuously	N/A	JIKORD S.R.O Zuzana Jelínková, jelinkova@jikord.cz

Tool	Tested in
5. Focusing on multimodality	Wielkopolska

Practical details

Wielkopolska developed in the frame of the RegiaMobil project an innovative approach to improve connectivity of two public transport modes: local and regional buses and regional trains. The IT application enables to plan journeys in the region with the two transport modes. Thanks to the big data database and its public accessible part passengers have a choice between timetables of trains or buses and can also plan a transfer.

The LCD screen bought in the range of the RegiaMobil project and mounted in the south of Poznań shows for example that there are three possibilities to get to Poznań using the train provided by Koleje Wielkopolskie or POLREGIO, taking a bus operated by the commune or by a private carrier. In the case of first three carriers, it is possible to enter the vehicle with own bicycle, scooter, or stroller. The LCD screen plays a role of a good practice example for local administration in other places.

The functionality of the application can be extended with ticket purchasing or following the vehicles on the virtual map. The application can be strengthened in future by some artificial intelligence modules which will enable to project most optimal courses of the routes and timetables focusing on multimodality.

Lessons learnt

Exchange of PT data among regional public transport operators, public bodies and administration on the local and regional level improved the cooperation between stakeholders. Improvement of timetables as well as ticket tariffs is expected. The online planner involving two main modes of transport in the region (buses and trains) will attract more people to use the public transport. The bus providers are more and more conscious about advantages of transferring their data to the central database and use it for planning of routes and passenger's demand. The journey planner is the best advertisement for the providers.

Length	Budget	More info
60 days	10 000,00 EUR	Marshal's Office of the Wielkopolska Region Piotr Kupczyk, Piotr.Kupczyk@umww.pl

11. Use case Focusing on multimodality in Osijek

Tool	Tested in
5. Focusing on multimodality	Osijek

Practical details

Develop an innovative approach in order to improve connectivity of sustainable mobility systems at local, regional, and transnational level. Support the integration of shared and flexible mobility options into traditional transport networks. The journey planner developed during the project not just provides different suggestions with different modes, but actually combines more than one mode if it is reasonable.

Lessons learnt

Integration of information among operators (e.g. public transport / public transport, public transport / flexible services, etc.) is a key challenge. However, it provides an opportunity to share information with public bodies and administrations. The whole process with its complexity highlighted the importance of integration in platforms and apps, digitalization for the user and function development (e.g. trip planning, ticketing, etc.). This is a stop closer to Mobility as a Service. A lot of lessons was gained through bilateral collaboration between operators.

Length	Budget	More info
15 days	15.000,00 EUR	City Osijek Srećko Kukić, Srecko.Kukic@osijek.hr

12. Use case Focusing on interoperability in South Bohemia

Tool	Tested in
6. Focusing on interoperability	South Bohemia

Practical details

The whole pilot project in its summer part was focused on creating new services, where one of the target groups were tourists and especially cyclists. As part of the project, 4 new bus lines were introduced to transport bicycles. The lines were in areas where they were still lacking in the region and enabled connections to other types of public transport enabling the transport of bicycles (trains and other cycle bus lines) and at the same time they were connected to regional centers at one end and to natural and tourist areas of interest at the other. A bus corresponding to the capacity of the area (large bus or small buses) was provided for operation with a canopy vehicle enabling the transport of bicycles. In reflection on the growing interest of electric bicycles, the transport was extended to this category after meeting the specific conditions (i.e. removal of the electric battery). Passengers would be offered assistance from the driver of both loading and unloading bicycles. One-day and all-day ticket categories were implemented in the ticketing system, while the all-day ticket allowed transport on any bus of the region's cycle system, regardless of the carrier.

Lessons learnt

The pilot project clearly confirmed the interest in expanding multi-use transport. In our case, it was a weekend transport for locals, as well as transport for hikers and cyclists. As far as cycling is concerned, due to the growing use and popularity of e-bikes, it is appropriate to allow this type of transport. Furthermore, it has proved successful to build a service, which enables connections to other lines and connections enabling the transport of bicycles and thus increases the variability of passengers within their planned journeys. A very suitable tool is also an integrated ticket, which will allow both passengers and bicycles to travel on a single document across the carrier.

Length	Budget	More info
preparation and planning of the lines lasted from November to January, the public contract of the individual parts from January to May.	Approximately EUR 85,000 was used for the operation of pilot lines (including 1 winter line for winter equipment and 4 summer lines for bicycle transport).	JIKORD S.R.O Zuzana Jelínková, jelinkova@jikord.cz

13. Use case Procuring new auxiliary or on-demand transport services in Rottal-Inn

Tool	Tested in
8. Procuring new auxiliary or on-demand transport services	Rottal-Inn

Practical details

Since the implementation of the pilot could not be carried out, the description refers to the design of a demand responsive transport service. After the spatial and public transport analysis and the surveys were completed, it became apparent that the focus of the pilot area was not on cross-border connections, but within the municipalities of the individual countries. Therefore, a demand response service was designed on the German side, which significantly improves the quality of access within and between municipalities, but still has a cross-border transfer point (Stadtverkehr Braunau a. Inn). This solution is also suitable on the Austrian side in order to create cross connections between the municipalities. For the conception first the spatial development was improved by the introduction of new stops and in the second step a rough timetable was established, which connects new and existing stops in a 2-hour cycle. The conception was done with QGIS as well as Excel.

Lessons learnt

The concept of on-demand transport offers the possibility to define new stops relatively flexibly and freely. These can either be defined virtually or built with little infrastructural effort. The form of on-demand service can increase the quality of access without drastically increasing travel times, since the stops are served only as needed. In addition, the timing of service can be freely designed, which means that on-demand transport acts as a supplement to existing public transport and parallel travel can be ruled out. On-demand services are thus a good way to improve the existing public transport system without having to replace it.

Length	Budget	More info
1 month	3,100 €	District Administration Rottal-Inn Sandra Obermeier, Sandra.OBERMEIER@rottal-inn.de

Tool	Tested in
8. Procuring new auxiliary or on-demand transport services	Saxony

Practical details

The newly created service is an extension of the existing regular service and is intended to contribute to the interconnection of existing services and their use by a new group of users who have not previously been able to use public transport.

To do this, it was necessary to obtain a special line permit as a temporary project within the legal framework. Approval was granted as a result of extensive communication. SMR has advertised a bus route operator. After analyzing the offers, a regional operator was awarded the contract.

The operator has obtained the permits and determined the stops together with the municipality. The original 4 special lines were expanded to 5 lines after the first feedback. In addition to the journeys offered, the bus company also collected usage figures.

Lessons learnt

The procurement of bus lines is the task of the districts in the Free State of Saxony. They have delegated the task to the transport associations. An individual award by the Free State has revealed many unanswered questions and legal hurdles - these must be eliminated in the future in order to simplify new test projects.

In the case of further field tests, cooperation with the districts and transport associations must be improved. It is conceivable that the competent authorities are clients and are financially supported by the Free State. Such cooperation was not possible during the Interreg project, initial discussions for future follow-up projects have already been held and considerations have been made to handle this via existing funding guidelines.

Length	Budget	More info
Sourcing: 40 days Execution: 120 days	22.610,00 Euro	Saxon State Ministry for Regional Development Peter Just, Peter.Just@smr.sachsen.de

15. Use case Developing the IT integration of various modes in Osijek

Tool	Tested in
9. Developing the IT integration of various modes	Osijek

Practical details

Digitransit is a platform for planning a travel plan and providing information services to passengers in public transport. The application must contain open APIs for viewing, viewing, searching, and calculating real-time information on trips.

The tool has been fully developed and tested with respect to what was the initial idea which consisted of the IT integration between ordinary public transport, bike sharing and car sharing.

Lessons learnt

Completely generated code, including subsequent changes / contributions, are placed in a publicly available repository (GitHub) as open-source code. The biggest challenge in the development of the MMJP was to collect updated information about timetables from PT operators because of COVID pandemic. Due to COVID situation PT operator very often change their timetables and information in the application was incorrect.

Length	Budget	More info
60 days	25.000,00 EUR	City Osijek Srećko Kukić, Srecko.Kukic@osijek.hr

16. Use case Developing the IT integration of various modes in Modena

Tool	Tested in
9. Developing the IT integration of various modes	Modena

Practical details

The tool has not been fully developed with respect to what was the initial idea which consisted of the IT integration between ordinary public transport, on-demand public transport and ebike rental. Due to the pandemic that forced many public administrations to review their plans, it was not possible to implement the part relating to the rental of e-bikes while the focus was only on the integration of the two mentioned public transport modes. This lack, however, did not lead to a reduction in the value of the pilot as putting two types of service so different in correlation with each other represented something particularly innovative and useful.

DRT services are by their nature extremely variable and for this reason correlating them with more rigid services represented a decision that has brought benefits to the users of the services also in light of the fact that most of the trips made with DRT coinciding with the use of other bus or rail services. The idea of this new IT tool therefore started from this need and benefited from what has already been achieved in the RUMOBIL Project.

Lessons learnt

The lesson learned is that the use of IT tools is increasingly indispensable as well as useful. Although DRT services are mainly used by elderly people, contrary to what is believed, even this group of users is to a large extent able to easily handle the new communication technologies.

This therefore represents an incentive to continue in this direction in a context such as that of rapidly evolving and changing mobility. Events such as the pandemic leave the world in a different situation from the one that existed previously, accelerating the need for new tools to follow the changes in habits born in a very short time compared to normality.

Length	Budget	More info
3 months	€ 19.500,00 for the development of the RUMOBIL app	Agency for Mobility and Local Public Transport Modena S.P.A Daniele Berselli, berselli.d@amo.mo.it

Tool	Tested in
10. Using participatory processes for residents	Saxony

Practical details

The residents as well as the users had the opportunity to give feedback and to formulate adaptation requests during and after the pilot phase. Suggestions for changes made during the pilot phase were already implemented in the offer. For example, a 5th supplementary line was created, which shortened travel times and stops for some more heavily used lines. Residents had the opportunity to give their feedback via questionnaires on the buses, through questionnaires posted online, or through direct communication with the municipality and the civic association.

The citizens were informed about the planning and the implementation of the pilot action through official publications of the municipality, contributions in regional media and the association as well as the municipality website. The SMR has commissioned a service provider for the evaluation. They created and evaluated questionnaires (print and online) based on scientific criteria. The stakeholders were involved in the creation of the questionnaires.

Lessons learnt

The participation of residents has brought several lessons to light. First, the residents have to be mobilized for the integration. Once this mobilization has been achieved, there is not only constructive criticism, but also suggestions and possible solutions. Involving people at an early stage is extremely important. It is crucial that offers are not perceived as introduced from above but are experienced as a proactive process of the community. State and county are welcome for support, but detailed planning should be done based on local community perception. In the specific project, active participation led to adjustments and a significant increase in the number of users. There was criticism of the short duration of the project and the restrictions due to the Covid pandemic.

Length	Budget	More info
40 days	19.278,00 Euro (66% of evaluation budget)	Saxon State Ministry for Regional Development Peter Just, Peter.Just@smr.sachsen.de

18. Use case Making campaign actions in South Bohemia

Tool	Tested in
11. Making campaign actions	South Bohemia

Practical details

An advertising campaign was implemented to increase interest in the new service (winter and several summer bus-lines). It was realized as an offline communication campaign, which was carried out with the help of stakeholder cooperation. It was the dissemination of posters in municipalities, railway stations, and means of transport. The stakeholders disseminated information through available channels (municipal newspapers, radio, web, social networks). Also an online campaign was carried out by a professional agency and consisted of the dissemination of banners through social networks (Facebook and Instagram) and a classic display campaign with retargeting. In addition, a great contribution was the publication of a press release by the South Bohemian Region, which was taken over within the mass media.

Lessons learnt

An important aspect is the correct identification and targeting of the end user, this is an absolutely necessary issue for online advertising. Another aspect is active cooperation with stakeholders, which leads to the minimization of financial costs of the advertising campaign and the maximum effect of direct dissemination of information. A win-win strategy occurs when collaboration is set up correctly. An example is offering a discount on ski passes at the destination ski area. The bus service will bring new customers to the ski resort, consider the situation in the congested car park, on the contrary, the offered discount is attractive and has an effect on bringing new passengers to public transport, and all this is amplified by mutual promotion. Based on experience, we would go the way of further development projects, especially active communication with stakeholders and dissemination of information within their communication channels.

Length	Budget	More info
The planning of the advertising campaign and the tender for a professional agency took about two months before the implementation of the operation of the new service, the implementation of the campaign took place after the operation.	The cost of advertising the campaign was 10,000 EUR, of which about 1/5 for an offline campaign and 4/5 for an online campaign.	JIKORD S.R.O Zuzana Jelínková, jelinkova@jikord.cz

19. Use case Providing real-time information in South Bohemia

Tool	Tested in
12. Providing real-time information	South Bohemia

Practical details

The implementation of the new service enabled the implementation of future public transport standards, one of which is to inform passengers directly about the location of their connection in real time. The bus was equipped with a GPS transmitter, which sends data to the dispatching application every 6 seconds, and this exact movement of the bus on the map was displayed for passengers in the web application dopravanajihu.cz (= public transport in South). The advantage of this system was that connecting connections were also displayed, and through the control room it was possible to influence and ensure continuity with a delay.

Lessons learnt

The main benefit of the application described above is a completely simple, cheap, and efficient information system for passengers, as the user only needs a mobile phone with a QR code reader and an Internet connection, which is now standard for a large part of the population. The information system at the stops consists of stickers with a web address and a QR code that links them to it. Passengers immediately see where the bus is and don't have to worry about whether it will arrive or when it will arrive. The benefit for the client is the possibility to operatively secure the connection, which was not possible in the past period and the connections only worked on the basis of "offline" regulations and service directives of the carriers.

Length	Budget	More info
N/A	According to the carriers, operating costs are around 15 EUR per month	JIKORD S.R.O Zuzana Jelínková, jelinkova@jikord.cz

20. Use case Providing real-time information in Wielkopolska

Tool	Tested in
12. Providing real-time information	Wielkopolska

Practical details

A LED screen showing to the passenger real-time information was installed at the transfer junction in Puszczykowo in the south of Poznań. The displayed information comes from the RegiaMobil IT database and is coherent with the information displayed by the demo application. The LED screen displays departure times, numbers, and names of operators. There is a stop in Puszczykowo for trains operated by two companies: Koleje Wielkopolskie or POLREGIO, a bus number 651 operated by the commune and a bus provided by a private carrier.

The local inhabitants and many tourists coming to Puszczykowo get to know that the place is well communicated with Poznań and surroundings by public transport. They can choose between two modes of transportation depending on the time of departure or route.

Lessons learnt

As there are almost 100 public bus providers in the region, it is difficult to obtain information in the form of GTFS in order to integrate it into the big data base. Another challenge is to get up to date information about all the smallest changes in their timetables. An agreement on supply of electricity and access to the broadband internet with the host of the place is necessary. In this case it is the mayor of the city.

Length	Budget	More info
30 days	12 000,00 EUR	Marshal's Office of the Wielkopolska Region Piotr Kupczyk, Piotr.Kupczyk@umww.pl

21. Use case Providing real-time information in Osijek

Tool	Tested in
12. Providing real-time information	Osijek

Practical details

In the MMJP traffic transport data provide routing data (e.g., stops and timetables). The data are providing by using of information retrieved from the GPP, HŽPP and FILXBUS databases, as well as other public transport operators on the API.

Lessons learnt

Within the REGIAMOBIL project, the following transport modes are integrated: bus and tram local transport, national and regional railway transport, and FlixBus – regional and international bus transport. Furthermore, this multimodal trip planner also included the bike and car-sharing services that were developed in parallel with this project. As these are different public transport service providers, it is difficult to obtain information in the form of APIs in order to integrate this data into the MMMJP.

Length	Budget	More info
10 days	5.000,00 EUR	City Osijek Srećko Kukić, Srecko.Kukic@osijek.hr

22. Use case Providing real-time information in Modena

Tool	Tested in
12. Providing real-time information	Modena

Practical details

There are six on-call services in the province of Modena and reservations are managed through the call center. Before the introduction of the RUMOBIL Project, the only way to get information regarding the execution of these services was to call the call center. With RUMOBIL, an app has been introduced that allows you to view the trips of the DRT services updated in real time and make a reservation of trips of your own interest. With RegiaMobil, integration with ordinary public transport services on buses and trains has been added, providing the timetables of the latter, which are also updated in real time.

Providing information in real time allows you to better manage your travels and is crucial in an intermodal context where connections are very important. The real-time information was also provided to the drivers who are thus able to better manage the connections requested by travelers.

Lessons learnt

By now we are all used to being interconnected and always being updated practically in real time on any event or phenomenon. What has been found with the pilot project is that even in the field of mobility there is a great demand for reliable and as fast as possible information. There are more and more ways to travel and the execution of a trip does not always follow the original planning due to disturbances that may occur. For this reason, providing information in real time has proved to be very welcome and at times indispensable by users, thus indicating a path that must continue to be followed.

Length	Budget	More info
3 months	€ 19.500,00 for the development of the RUMOBIL app	Agency for Mobility and Local Public Transport Modena S.P.A

23. Use case Using multiple channels in Rottal-Inn

Tool	Tested in
13. Using multiple channels	Rottal-Inn

Practical details

Since the implementation of the pilot could not be carried out, the description refers to the design of a demand responsive transport service. After the spatial and public transport analysis and the surveys were completed, it became apparent that the focus of the pilot area was not on cross-border connections, but within the municipalities of the individual countries. Therefore, a demand response service was designed on the German side, which significantly improves the quality of access within and between municipalities, but still has a cross-border transfer point (Stadtverkehr Braunau a. Inn). This solution is also suitable on the Austrian side in order to create cross connections between the municipalities. For the conception first the spatial development was improved by the introduction of new stops and in the second step a rough timetable was established, which connects new and existing stops in a 2-hour cycle. The conception was done with QGIS as well as Excel.

Lessons learnt

The concept of on-demand transport offers the possibility to define new stops relatively flexibly and freely. These can either be defined virtually or built with little infrastructural effort. The form of on-demand service can increase the quality of access without drastically increasing travel times, since the stops are served only as needed. In addition, the timing of service can be freely designed, which means that on-demand transport acts as a supplement to existing public transport and parallel travel can be ruled out. On-demand services are thus a good way to improve the existing public transport system without having to replace it.

Length	Budget	More info
1 month	3,100 €	District Administration Rottal-Inn Sandra Obermeier, Sandra.OBERMEIER@rottal-inn.de

24. Use case Using multiple channels in Osijek

Tool	Tested in
13. Using multiple channels	Osijek

Practical details

Through the activities of publicity and visibility of the project through various communication channels will promote the MMJP called putujem.osijek.hr.

Lessons learnt

The use of various communication channels has enabled greater reach to potential users of the MHR, both in the City of Osijek and in the urban agglomeration of Osijek. The challenge of planners, regulators and policymakers is on one side to support better integration of different modes of transport into multimodal chains and integrated concepts (such Mobility as a Service approach), in order to allow more efficient use of resources. On the other side, the challenge is to export the benefits of technological and operational innovations in the sharing economy environment outside of their "comfort zone", which are the most densely populated areas. In order to do this, sustainable business and financing models will play a fundamental role.

Length	Budget	More info
22 days	8.000,00 EUR	City Osijek Srećko Kukić, Srecko.Kukic@osijek.hr

25. Use case Making non-mobility business cooperation in South Bohemia

Tool	Tested in
14. Making non-mobility business cooperation	South Bohemia

Practical details

During the implementation of the winter line, a 30% discount on ski passes was agreed in cooperation with the ski resort at the destination upon presentation of a valid ticket from the demonstration line. On the part of the ski resort, it was a matter of supporting public mobility; The client and the carrier, on the other hand, allowed the ski-resort the possibility of free advertising through the customer and carrier channels. On the contrary, the possibility of public transport was promoted through the canals of the ski resort.

Lessons learnt

Mutual agreements on cooperation such as mutual promotion and support of public transport have been operating in the South Bohemian Region after good experience since the implementation of past projects (eg RUMOBIL). Each party will offer its options, which will not burden it financially beyond the set budgets, and they will promote each other and offer their services. For public transport, this has the effect of increasing the number of passengers, which is related to the reduction of public finance subsidies; The benefit of mutual promotion is beneficial for all parties, when there is a massive dissemination of information with minimal or no financial burden.

Length	Budget	More info
N/A	no fund needed	JIKORD S.R.O Zuzana Jelínková, jelinkova@jikord.cz