

D3.2.3 Overview on technical reports



Document Control Sheet

Application ID:	10042161
Project acronym	STEP-UP
Project Title	Sustainable Transport E-Planner to Upgrade the IT-HR mobility
Start of the project	01/2018
Duration	18 months

Related activity:	Task 3.2 - Realization of feasibility studies and executive projects
Deliverable name:	“Overview on technical reports”
Type of deliverable	Technical documentation
Language	English
Work Package Title	Development of feasibility/executive studies on multimodal aspects
Work Package number	WP3
Work Package Leader	County of Split-Dalmatia

Status	Final
Author (s)	Marche Region
Version	V01
Due date of deliverable	31.05.2018 (AF) – 07.01.2019 (SC)
Delivery date	24/06/2019

INDEX

1. Introduction.....	3
2. Pilot 1: Marche Region	3
3. Pilot 2: Emilia Romagna Region.....	7
4. Pilot 3: Municipality of Lecce	10
5. Pilot 4: County of Split-Dalmatia	14
6. Pilot 5: City of Sibenik.....	23
7. Pilot 6: Zadar airport	30

1. Introduction

The objective of the document is to collect all feasibility studies and executive projects drafted in the Deliverable 3.2.1 and 3.2.2 from each partner in order to describe the main scopes and functionalities of each pilot project.

In particular, this document shows the following pilot projects:

- Chapter 2: Marche Region pilot
- Chapter 3: Emilia Romagna Region pilot
- Chapter 4: Municipality of Lecce pilot
- Chapter 5: County of Split-Dalmatia pilot
- Chapter 6: City of Sibenik pilot
- Chapter 7: Zadar airport pilot

2. Pilot 1: Marche Region

Marche Region could be defined as a “diffuse city”. This concept is related to the pattern of concentration versus distribution of the population, jobs, attractors etc. who generate daily mobility flows in a given directions. The current system generates road congestion (mostly during rush hours), CO2 emissions and accidents. Moreover, the end users miss confidence in public transport, reducing the interaction with collective transport.

Planning daily mobility in polycentric regions will require coordinating policies and services of many actors – transport and urban planners, local and regional policy makers, urban and interurban public transport providers – within and across different urban centres and administrative boundaries. Without any such planning, people are almost obliged to take the “do it yourself” solution of individual car use for any daily mobility purpose.

The Marche region gives a great value to ITS solutions to enhance transport information services and recognises the key role the regions play in the integration and coordination of individual transport service providers to the benefit of accessibility to collective transport systems both urban and extra-urban as well as the reduction of individual travel solutions.

In general, this would contribute to reduce the impacts on the environment (reducing congestion, emissions and energy consumption) and help complying to sustainable mobility policies.

The promotion and encouragement of a new and innovative collective mobility should be integrated in the various forms of public intervention.

By reducing individual mobility using private cars there should be an increasing of the sustainable and collective mobility.

ITS applications used to:

- Optimal using of the data coming from street, traffic and mobility
- Give some continuity of ITS services, mostly for “traffic management”
- ITS applications for transport and road safety
- Telematic connecting between vehicles and control centre

Scope of the pilot

The main objective of the Marche pilot is overcome the limits of previously web-based system and include other transport modes (for example train and ferry) for a wider European connection. Marche Region aims at creating a single multimodal and cross-border travel planner in order to facilitate at first the access to the transport network and on the other side attract more demand thanks to the inclusion of events and points of interest. It is important to give easy and complete information for a high quality users' experience avoiding the proliferation of web applications.

- The general objective of the pilot project is improving the sustainable mobility within the Region. Moreover, it wants to increase trips from and to the Region according to the users' needs: tourists, commuters, residents, students,...
- encourage the use of public transport with multimodal travel solutions;
- improve the infomobility system
 - o give more information on public transport such as timetable, delays, news...;
- allow the multimodal transport with different transport modes thanks to different mobility operators
- improve the tourism providing a platform where people can consult events and POIs of the territory
- allow the easy access to the transport data;
- optimize time for searching information and purchasing travel tickets, making easier and more reliable the use of e-tickets and payment modes.

Main users involved



List of the actions (with detailed description) and Gantt

WP3 - Development of feasibility/executive studies on multimodal aspects	05 ott 18	31 gen 19	
A3.1 - E-planner design	05 ott 18	05 dic 18	
A3.2 - Definition of the Executive Project	05 ott 18	20 dic 18	
D3.2.2 Executive project report for the E-planner	30 nov 18	30 nov 18	
WP4 - Pilot the integration between different info-mobility services	22 ott 18	30 giu 19	
A4.2 - Logical architecture	26 nov 18	31 gen 19	
A4.3 - E-Planner implementation	01 feb 19	30 giu 19	
A4.4 - data mobility integration	01 feb 19	30 giu 19	
D4.1 - Architecture	31 gen 19	31 gen 19	
D4.2 - E-Planner on-line	15 mag 19	15 mag 19	

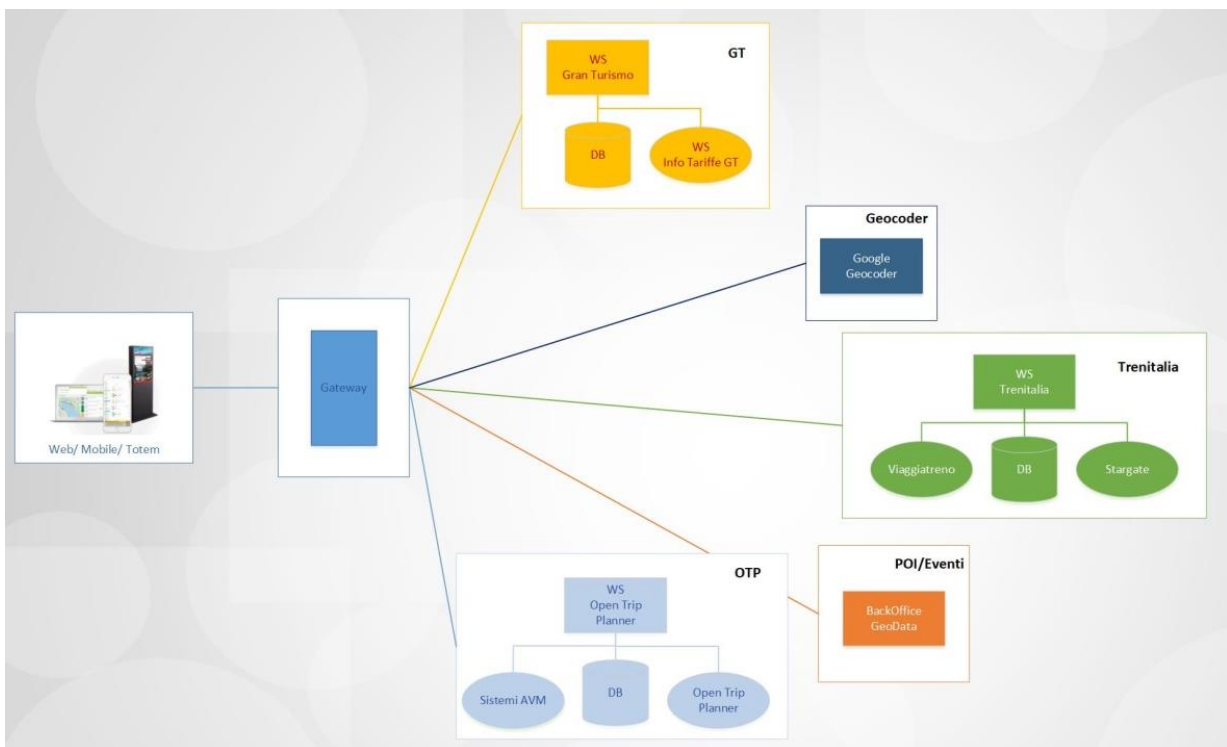
SWOT analysis → in the summary it is enough the overall schema

Strengths	Weakness
Increase the quality perceived by the users Increase the efficiency of the public transport offered to the users Improve the multimodality between different modes of transport	Lack of mobility data sharing Not optimization of mobility resources

Opportunities	Threats
<p>Improve tourism through the Adriatic sea</p> <p>Reduce the use of cars and increase the use of public transport</p> <p>Reduce traffic flow</p> <p>Flexibility of fare policy and data monitoring</p> <p>Promote fare integration</p> <p>Promote the interoperability</p> <p>More trips by bus and less incidents by cars</p>	<p>No long term action mobility plan</p> <p>Lack of concrete and strong regulations at regional level</p>

Architecture diagram with main hw and sw components/modules described

Logical architecture:



List of the main SW and HW components:

- E-Planner Web Application
- E-Planner Web Services
- E-Planner Monitor Services
- E-Planner Log Services
- OTP- Routing Engine

- GTFS Import
- BI Pentaho
- Backoffice POI/Events
- Web Services POI/Events
- GTFS Repository

The total amount with the expected cost

The expected cost for the implementation of this pilot is about € 82.092,00.

3. Pilot 2: Emilia Romagna Region

Scope of the pilot

In the two little boroughs of Verucchio and San Leo, on the hills near Rimini, the pilot action foresees the identification of alternative solutions of intermodality, aimed at facilitating the access of tourists by limiting the use of the private cars, thus contributing to the enhancement of these places and their better use.

The pilot action foreseen by the project therefore provides for the identification of complementary intermodality solutions, aimed at facilitating the access of tourists by limiting the use of private cars and thus contributing to the enhancement of these places and their best use.

Therefore, the aim of the pilot project is to activate a scheduled service such as the one envisaged, every year at least in the summer periods, fitting into the 1-2-3 measures of the PRIT.

Main users involved

The Gal (Local Action Group) of Valmarecchia and Conca will be the main subject of the pilot action. It will also require the collaboration of transport companies operating in the area (Autolinee Benedettini), hoteliers, managers of different accommodation facilities, travel agents and tour operators, Municipalities of Verucchio and San Leo, San Leo 2000.

The end users are tourists from the Romagna coast who want to reach the Rimini hinterland, but also citizens of Romagna who wants to visit the boroughs.

List of the actions (with detailed description) and gantt

A free bus transport service will be set up – one day a week, on Mondays in Spring and on Thursdays in Summer - for all tourists staying in the facilities of the territory involved in the Pilot.

As an additional service, a welcome and guided tour service is provided by local cultural associations.

We will use a means of transport for at least 20 passengers with personalized colors lettering on the two long sides and on the back side with the step-up logo Interreg Italy Croatia Region of Emilia-Romagna Gal Valmarecchia and Conca.

When: from 15 April 2019 to 10 September 2019

Where: area of influence of the Rimini stretch intermodal nodes (Rimini coach and railway station);

Gantt

	Jan 19	Feb 19	Mar 19	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19
Local meeting with GAL Valmarecchia and other stakeholder									
Equipment purchase									
Press conference									
Routes with equipped buses									
Closing press release									

SWOT analysis

<p>Highlights</p> <ul style="list-style-type: none"> • Attractiveness of places • Strong tourist presence • Predisposition to changes by local administrations, desire for better connections • Sense of acceptance by local populations 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Lack of public transport • Poor propensity to use information technology • Difficult roads, few parking lots • Fragmentation of tourism promotion
<p>Opportunities</p> <ul style="list-style-type: none"> • Rules for receiving proposals (PRIT) • awareness of a real need to change the model of tourism and transport in local and regional authorities • awareness of the need to combat pollution and climate change • desire to get rid of using your car opportunities for economic development for historic villages 	<p>Dangers</p> <ul style="list-style-type: none"> • Project failure due to poor policy compliance • Changing the paradigm is always difficult: the private vehicle remains competitive, people may not be interested in fixed timetables

Architecture diagram with main hw and sw components/modules described

From an IT point of view, the project will be based on the following components:

1. a table of racing timetables, created with a PDF by the transport manager (Autolinee Benedettini) and available on <http://www.benedettinispa.com>
2. a series of web pages, on different sites, which will show the table:
<https://www.ptservizi.com>
<http://www.riminiturismo.it> <http://www.turismo.ra.it/ita/> info@sanleo2000.it <http://www.sanleo.it>
<http://www.comune.verucchio.rn.it>, <http://www.vallimarecchiaeconca.it>
3. an email address (and a telephone number) of the company that will manage the reservations (San Leo 2000) info@sanleo2000.it
4. Back office: a mail connection between San Leo 2000 and Autolinee Benedettini, so that the transport company - knowing from time to time the number of reservations - can make available the bus of the suitable dimensions.

The total amount with the expected cost

A budget of € 15,000 is planned to test the transport line and its efficiency linked to tourism.

4. Pilot 3: Municipality of Lecce

The city of Lecce has a surface of 238,93 km² and 95.067 inhabitants. It is the capital city of the province of Salento and its main activity is represented by the cultural tourism. Tourist flows are increasing at a fast pace with an encouraging growth in the number of tourists from abroad.

Concerning the infrastructures available in terms of regional, national and international accessibility, Lecce can be reached in 30 minutes from the Brindisi airport which counts 2 million passengers per year. The airport in Bari is 90 minutes by car far from Lecce and receives an average of 3,6 million passengers per year.

The majority of incoming people reach the area by car via the highway also thanks to the good connection made available by the Scandinavian-Mediterranean TEN-T corridor (Bari and Taranto are approx. 60-90 minutes far).

Maritime connections are also possible through (i) the Port of Taranto which is an intermodal hub for mainly cargo transports throughout Europe and between the Mediterranean Sea and the Near/Middle / Far East and the rest of the world; (ii) the Port of Brindisi which is a freight and tourist port and receives about 250.000 passengers per year connecting Italy with Albania and Greece. It is also connected to the Italian cities of Catania and Sorrento in the Tyrrhenian Sea and (iii) the Port of Otranto which connects Italy with Albania and Greece as well.

Since 2015, the city provided to the users a regional multimodal travel planner, called Apuliamoving (<http://www.apuliamoving.it/tp/INFOCITY/home/index>) to make easier door to door solutions. Currently, multimodal solutions provided to the users refer to urban bus and national railway transportation.

Scope of the pilot

The main scope of this pilot is overcoming the lack of full information about transport&tourism at local level. Hereafter a list of the main achievements planned by the Municipality of Lecce thanks to STEP-UP:

- Implementation in its regional travel planner
 - o tourist information,
 - o update timetables for ferry/plane/train/bus,

- Improve the accessibility and inadequacy of public passenger transport
- Improve both the management of the tourists during the peak season (summer period) and the cohabitation with residents
- Enable the city to offer smart services
- Integrate ancillary services to the mobility sector
 - o Improve the dissemination of information on the territory through the networking of POIs and Events

The general objective of the pilot is to strengthen the competitiveness of the territory by providing the city with an integrated system including information and mobility services, which may favor, on the one hand, the increase of users flows to the city and on the other hand, “green” mobility with a low environmental impact. The project plans to deploy an innovative platform for the provision of advanced services and other utilities, which can also generate revenues to ensure the self-sustainability of the initiative over time.

Main users involved

Based on the scope of this pilot, the main users involved in this scenario can be divided into three main groups:

- 1) Public Authority: the municipality of Lecce
- 2) Public Transport: to allow the possibility to calculate the optimal travel multi-modal solution (train, ferry, bus)
- 3) End-Users: all citizens and tourists displayed in the picture below:



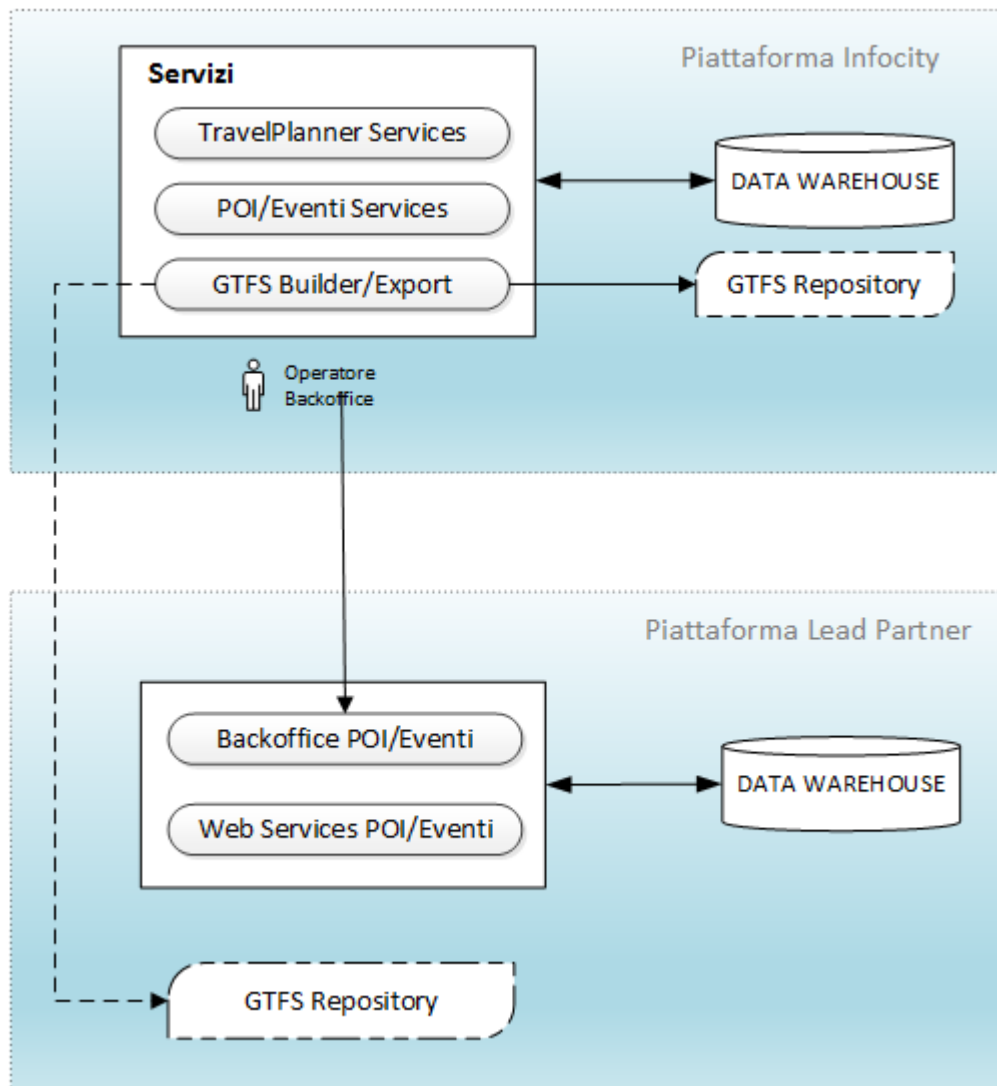
List of the actions (with detailed description) and Gantt

ID	Nome attività	Inizio	Fine	mar 19	apr 19	mag 19	giu 19	lug 19	ago 19	set 19	ott 19
1	Fase A - Project Management	15 mar 19	30 set 19	[Gantt bar from mar 19 to set 19]							
2	A.1 - Piano operativo	15 mar 19	29 mar 19	[Gantt bar from mar 19 to mar 29]							
3	A.2 - Predisposizione di relazioni e documentazione	15 mar 19	30 set 19	[Gantt bar from mar 19 to set 30]							
4	A.3 - Organizzazione e partecipazione agli Steering Committee Meeting e eventi pubblici correlati al progetto	15 mar 19	30 set 19	[Gantt bar from mar 19 to set 30]							
5	A.4 - Coordinamento delle attività (WP3, WP4) di competenza del Comune di	15 mar 19	30 set 19	[Gantt bar from mar 19 to set 30]							
6	1st Progress Report			[Gantt bar from mar 19 to mar 19]							
7	2nd Progress Report			[Gantt bar from mar 19 to mar 19]							
8	3rd Progress Report	01 lug 19	30 set 19	[Gantt bar from jul 01 to set 30]							
9	Fase B - Progettazione esecutiva	15 mar 19	30 apr 19	[Gantt bar from mar 15 to apr 30]							
10	B.1 - Definizione degli elementi progettuali del sistema	15 mar 19	31 mar 19	[Gantt bar from mar 15 to mar 31]							
11	B.2 - Redazione del PE per l'estensione della piattaforma	25 mar 19	30 apr 19	[Gantt bar from mar 25 to apr 30]							
12	Fase C - Sviluppo progetto pilota e raccolta dati (WP4)	22 apr 19	30 set 19	[Gantt bar from apr 22 to set 30]							
13	C.1 - Raccolta dati di mobilità e POI/Eventi	22 apr 19	30 giu 19	[Gantt bar from apr 22 to jun 30]							
14	C.2 - Implementazione del progetto pilota	01 mag 19	30 giu 19	[Gantt bar from may 01 to jun 30]							
15	Fase D - Mantenimento in esercizio	01 lug 19	30 set 19	[Gantt bar from jul 01 to set 30]							
16	D.1 - Manutenzione correttiva	01 lug 19	30 set 19	[Gantt bar from jul 01 to set 30]							
17	D.2 - Formazione e addestramento	01 lug 19	30 set 19	[Gantt bar from jul 01 to set 30]							

SWOT analysis → in the summary it is enough the overall schema

<p>Strengths</p> <p>Integration of new solutions with different levels of (technical and organizational) maturity, including projects on tourism and dissemination of information/events</p> <p>Data base that integrates mobility and tourism data for a modular and complete offer to the end-users</p> <p>Integration of long-distance transport within the travel solutions (travel planner system)</p>	<p>Weakness</p> <p>Lack of mobility data sharing: the lack of availability by the transport operators to share mobility data can lead to a lack of fullness and no optimization of information.</p> <p>The system has been designed to ensure it is able to work even with a minimum amount of data (both static and dynamic data on the territory and on public transport).</p>
<p>Opportunities</p> <p>Reduce traffic flow and traffic jam</p> <p>Improvement of the existing local public transport thanks to a better and more efficient information to the travelers</p> <p>Include different typology of users (students, commuters, vulnerable users, tourists, citizens, etc.)</p>	<p>Threats</p> <p>The absence of a SUMP that could guarantee an adequate coordination between infrastructural policy and urban development</p> <p>Lack of concrete and strong links with national and regional regulations</p> <p>Lack of coordination of the policy for the public transport management in the extra-urban and metropolitan areas.</p>

Logical Architecture with main components/modules described



List of the main SW and HW components:

In the local platform

- TravelPlanner Services: travel planner information services
- POI/Eventi services: points of interest and events information services
- GTFS Builder/Export: Module to build and export GTFS from local platform to STEP-UP platform.

Within Lead Partner platform:

- Backoffice POI/Eventi: back office for POIs and events management
- Web Services POI/Eventi: points of interest and events information services
- GTFS Repository: GTFS repository (transport data)

The total amount with the expected cost

The expected cost for the implementation of this pilot is about € 55.740

5. Pilot 4: County of Split-Dalmatia

Scope of the pilot

The idea of the project is to develop an electric charger network for electric vehicles in the hinterland of the Split-Dalmatia County. A total of six potential locations for the project were proposed: Vrlika, Vrgorac, Sinj, Cista Provo, Zagvozd and Imotski. Microlocations will be detailed after the tender results within the Activity 1, 2 and 3. The idea of project is to develop a charging station network by installing electric vehicle charging stations at spatial intervals of 30 km, in order to increase the availability of all inner parts of the Split-Dalmatia County for electric vehicle drivers. The electric charger stations will be set up on attractive tourism destinations and near frequent traffic routes, and the service itself will be tested at the time of the tourist season when the demand for charging stations is extremely high. Main objectives of the project implementation are:

- establishment of publicly accessible electric charger network in hinterland of Split-Dalmatia County as a concept of e-mobility;
- increasing accessibility of the electric vehicle traffic system;
- the integration of publicly available services and the increase of the spatial mobility of the local population and tourists;
- development of efficient and accessible services and information platforms;
- promoting e-mobility and multimodal traffic among local people and tourists.

The main impact of the project implementation will be stimulated by increasing mobility and increasing tourism visibility of the county's hinterland. It is also possible to expect economic changes caused by the use of rational and cost-effective transport solutions such as the transport model of electric vehicles. The implementation of project ensures technical progress (especially in the interior of the county) which should be visible in increasing quality of transport infrastructure.

Main users involved

The main stakeholders involved in the implementation of the project are the Split-Dalmatia County, as the lead stakeholder and activity leader, and the local stakeholders (self-government units and private subjects) that are interested in the realisation of this type of infrastructure in their administrative area.

Split-Dalmatia County – is the lead stakeholder in the development of initial charging station network at the Split-Dalmatia County. County is in charge of the realisation of activities necessary for the successful preparation and implementation of the pilot project. The county is in charge of establishing and successfully maintaining communication with stakeholders in project implementation, preparation and implementation of public procurement for setting up electrical charger stations. County is responsible for defining promotional channels and participating in promotional and informational activities.

Local self-government units – service users who provide location services and infrastructure where they will test the charging station service. It carries the cost of electricity that will be used to charge the vehicle and generate revenue for the energy sale.

Private subjects - service users who provide location services and infrastructure where they will test the charging station service. It carries the cost of electricity that will be used to charge the vehicle and generate revenue for the energy sale.

The Split-Dalmatia County Tourist Board – will carry out part of promotional activities on its own websites and social networks and provide tourists with information of availability of charging stations.

Target groups: tourists and local population

The analysis of tourist indicators shows that the vast majority of tourists use a personal car as a mean of transport in Croatia. At the same time, the number of electric vehicle users increases in the EU market, increasing awareness of the importance of environmental protection and the importance of reducing air pollution from exhaust gases from the road transport sector. By combining these two facts, the conclusion is reached that in the future it is expected to increase the trend of tourist arrivals by electric vehicles. On the other hand, the local population offers the necessary infrastructure for charging electric vehicles that currently does not exist in these areas. For the local population, on one hand, they increase the multimodal traffic possibilities, the diversification of road traffic for commuting, while on the other hand they are attracted to the tourist movements in the Split-Dalmatia County.

List of the actions (with detailed description) and gantt

Activity 1.: Opening a public tender for interested stakeholders

Within the framework of the first project activity, it is planned to open a public tender for local self-government units and private subjects (economic entities) from the hinterland of Split-Dalmatia County. Aim of tender is to select local stakeholders in whose area will be developed electric charger infrastructure according to the possible locations within this Study. In addition to need to

meet the minimum technical requirements, stakeholders should meet the following criteria: the location should be on frequent traffic location, microlocation should be close to the location determined by the planned charger network, the location should be accessible from frequent roads, location should have developed tourist facilities and attractions and the distance between the proposed locations will be taken into account in to create balanced network.

Activity 2.: Stakeholder introduction

As a part of the activity, meetings will be held with representatives of Split-Dalmatia County, Tourist Board of Split-Dalmatia County and potential stakeholders who meet the conditions of tender criteria. The purpose of the activity is to familiarise stakeholders with the concept of the pilot project, to confirm the locations for the electric chargers and to reach agreement on the roles and activities for each stakeholder.

Activity 3.: Selection of microlocations according to the interests of stakeholders

After introduction the stakeholders with the project and validation of locations, a microlocal analysis will be carried out for the most optimal location for infrastructure development. The most optimal microlocation should take into account the higher frequency of traffic, provide the potential of integrating the multimodality and intermodality of the traffic system, ensuring visibility and positioning on tourist frequencies. The most convenient location for charger stations are public parking lots owned by local self-government units or parking lots owned by private subjects (economic entities; restaurants, accommodation facilities and other tourism facilities have advantage).

Activity 4.: Implementation of public procurement for electric vehicle charging stations

After the location selection, a public procurement of electric charger stations will be carried out, specifying the necessary infrastructure elements. As part of the activity, all the necessary documentation for the implementation of public procurement will be prepared for the purpose of procurement of the services and components necessary for the project realisation.

Activity 5.: Delivery, installation and commissioning of charging stations in operation

The activity includes the delivery, installation and connection of the charging stations to the previously secured power and communication port, testing (probing) of the charging station functionality, testing of protection work and other safety mechanisms, and training of technical personnel responsible for the operation of charging stations.

Activity 6.: Implement a pilot project and monitor the performance of charging stations

This activity is carried out continuously through the implementation period of the pilot project to monitor the condition and functionality of the charging stations to allow any upgrades or adjustments of the entire system during the work.

Activity 7.: Management of charging stations

Charging station management includes the development of RFID card, station management from control centre and active maintenance, integrating the stations with international eRoaming platform, providing automatic access to the stations and payment services via the PlugSurfing smartphone app, providing automatic access to charging stations, payment via SMS and providing active customer support.

RFID personalised cards are used to authorize the user before starting charging or when it ends. It is recommended to use the ISO Mifare 13.56MHz UltraLight RFID card. The management of the charging stations will be conducted from the control centre of Croatian Telecom, which will be responsible for active maintenance. With the aim of active promotion, the charging station will be integrated with the largest international EU eRoaming platform HUBJECT, enabling automatic access to more than 200.000 EU electric vehicle users. Payment will be conducted through the PlugSurfing app and by SMS.

Activity 8.: Advertising and visibility of charging stations

The activity includes continuous promotion and visibility of the pilot project, i.e. charging station infrastructure and charging services for electric vehicles. The activity will take place in physical form and online with a view to more accurate doping to target groups of pilot projects. Online advertising will cover the provision of basic information to tourists and residents on web sites and social network profiles of all stakeholders involved in project implementation. In addition, with the aim of active promotion, the charging stations will be integrated with the largest international EU eRoaming platform HUBJECT, which will directly affect electric vehicle users. Online advertising tools must also contain information on the tourist offer of the area where the barges are located in order to link the tourist and transport component of the project. Physical promotion will be done by producing information leaflets with the most important information that will be available on frequent events.

Activity 9.: Determining the pilot project results

After the implementation of the pilot project itself, the activities will identify the project results achieved and the possibility and justification for the application of the same or similar model in the future. The basic result that should be found is the number of electric vehicles charging and their time distribution in relation with tourist movements and commuting. In accordance with aforementioned, the entire justification of charging stations in the hinterland of Split-Dalmatia County will be determined (financial and economic, based on income and expenditure ratio as well as estimation of contribution to the development of tourism and economy of the selected areas).

Activity 10.: Project management

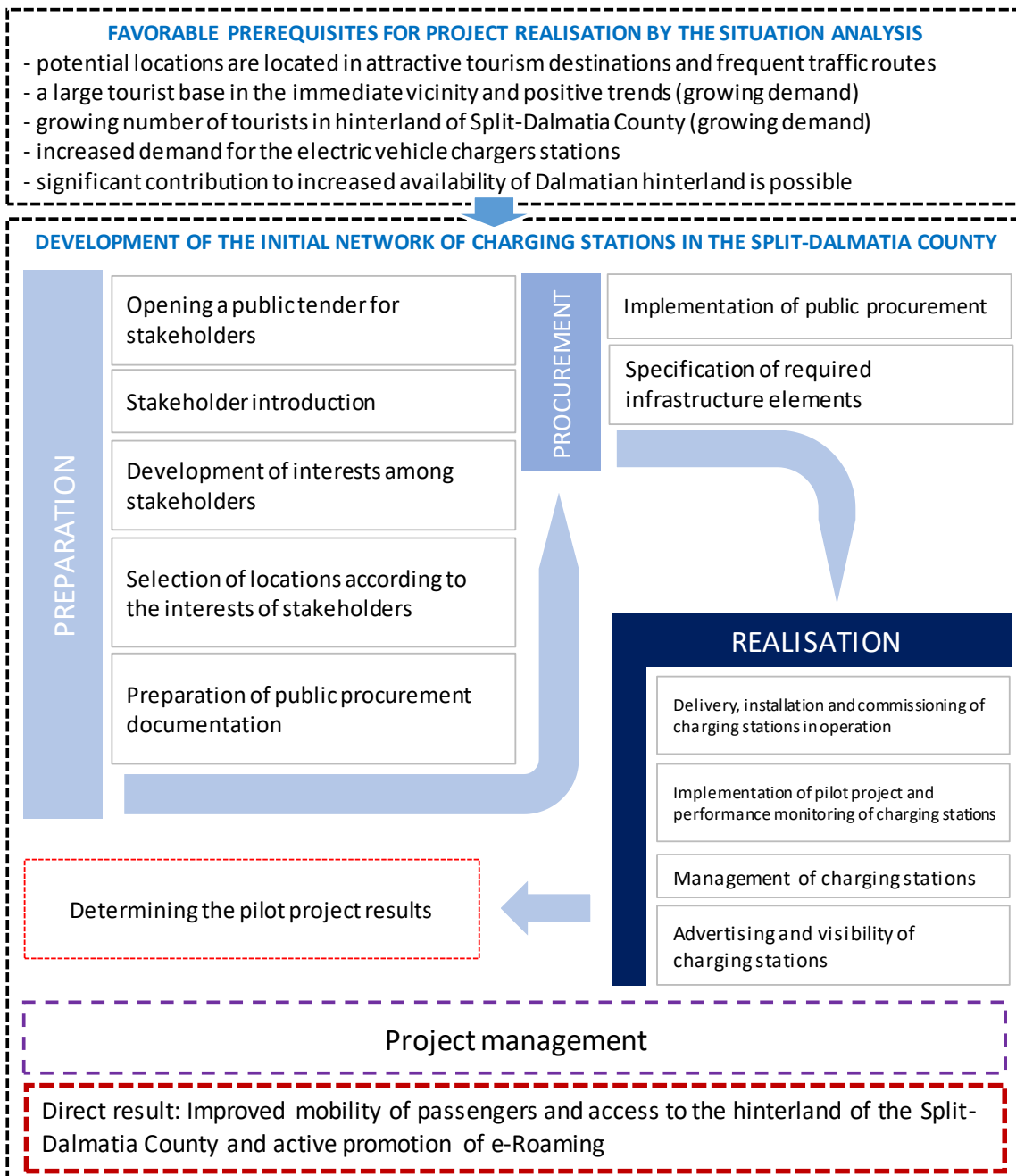
The Split-Dalmatia County as a project holder will continuously coordinate the realisation of the activities and activities of all involved stakeholders.

Activity / month	1	2	3	4	5	6	7	8	9	10
Opening a public tender for interested stakeholders	█									
Stakeholder introduction	█									
Selection of microlocations according to the interests of stakeholders	█									
Implementation of public procurement for electric vehicle charging stations		█	█							
Delivery, installation and commissioning of charging stations in operation				█						
Implementation a pilot project and monitor the performance of charging stations				█	█	█	█	█	█	
Management of charging stations				█	█	█	█	█	█	
Advertising and visibility of charging stations				█	█	█	█	█	█	
Determining the pilot project results									█	█
Project management	█	█	█	█	█	█	█	█	█	█

SWOT analysis → in the summary it is enough the overall schema

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> - high share of RES in electric energy production - electric vehicles do not pollute the environment and do not create noise - increase in the number of inhabitants in Imotski (potential users) - Sinj and Imotski are demographic centres of the Dalmatian hinterland - a large tourist base close to the project area - a large number and share of commuters - near the highway 	<ul style="list-style-type: none"> - the absence of such kind of infrastructure in the hinterland of the Split-Dalmatia County - negative socioeconomic indicators in county hinterland - lack of tools for managing transport needs - existing fossil fuel traffic generates large amounts of harmful gases
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> - potential locations are located in attractive tourism destinations and frequent traffic routes - the project will be tested at the peak of the tourism season - tourism development of hinterland ensures increased demand for infrastructure - an extremely positive trend of increasing number of electric vehicles in the EU and the Republic of Croatia - trends indicate an increase in the number of tourist arrivals - an increasing number of incentives for the use of electric vehicles and infrastructure development 	<ul style="list-style-type: none"> - the disinterest of the local population for the use of electric vehicles - possible stakeholder disinterest - potential postponing of public procurement procedures

Architecture diagram with main hardware and software components/modules described



The project needs standardised software components for normal functioning of electric vehicle charging stations, such as:

- software for user authorization on the vehicle charging device
- linking to a data collection portal from charging stations (maps with locations, reservations, etc.)

- software for customer integration and payment through: RFID card, PIN system, SMS, smartphone app or roaming platform.

Information and promotional activities via the internet will be carried out through existing web site stakeholders.

Hardware components make the focus of the pilot project and for its realisation are needed:

- **charging station, type A, model: G7 1x22kW with integrated router**
 - Standard charging of 1 electric vehicle of any type (car, bike, motorcycle) within 90 minutes
 - 1x high quality seven-pole outlet (type 2 Mennekes, 32A, maximum power of 22 kW on three-phase connection, or 7,4 kW on single-phase connection), in accordance with IEC 62196-2 and IEC 61851 standards,
 - authorisation and billing mode: PIN, RFID, SMS and APP, optional (plug & charge),
 - connectivity type: Ethernet, GSM (LTE), WiFi, PLC
 - Color LCD display, 3,5 inch with multilingual options and geolocation advertising,
 - aluminium frame with high degree of protection against vandalism (IK 08) and with extreme weather conditions (-20°C + 70°C), humidity 95 %, altitude 2000 m
 - Dimensions: 45x27x13x5 [cm], weight 6,3 kg.
 - Socket protection:
 - overcurrent socket protection,
 - differential socket protection ($\Delta 30\text{mA}$)
 - type B+
 - wall bracket, screws and other equipment is included in the charging station
 - Advanced demand side management and compatibility with the highest requirements of active manageability by the distribution system operator or third parties.
 - Integrated artificial intelligence system, which adjusts the charging process depending on user habits.
- **charging station, type B, model: G6 2x22 kW**
 - simultaneously charging 2 electric vehicles of any kind (cars, motorcycles, scooters, bicycles) within 60 minutes,
 - 2x high quality seven-pole socket (type 2 Mennekes, 32A, maximum power 22 kW), in accordance with IEC 62196 and IEC 61851 international standard (Most of the EV on

the market support this standard. Standard defines the safety mechanisms and the method of data exchange between the vehicle and the charging stations)

- Use mode: Authorisation (RFID, SMS, APP),
 - Connectivity type: Ethernet, GSM, Wireless
 - Socket protection:
 - overcurrent socket protection,
 - differential socket protection ($\Delta 30\text{mA}$)
 - The basic anchor is included in the bottle price.
- **RFID card set (x10 per station)**
 - **GPRS router**

The total amount with the expected cost

Given the specificity of the project in which the number of chargers depends on the number of stakeholders that are complied with tender criteria and on the alignment with the development needs identified through this study, it should be noted that the budget is indicative and subject to change. Estimated market value of delivery, installation and commissioning of charging station is 77,000 HRK. Depends on the number of stations and stakeholders meeting the conditions of tender, the total amount will be changed. The budget is based on scenario which assume that all planned locations will be used for charger development (6). According to that scenario, the total project amount would be 550.000,00 HRK.

Activities	Estimated value (HRK)
Opening a public tender for interested stakeholders	0,00
Stakeholder introduction	3.000,00
Selection of microlocations according to the interests of stakeholders	2.000,00
Implementation of public procurement for electric vehicle charging stations	3.000,00
Delivery, installation and commissioning of charging stations in operation	462.000,00
Implement a pilot project and monitor the performance of charging stations	15.000,00
Management of charging stations	30.000,00
Advertising and visibility of charging stations	10.000,00
Determining the pilot project results	5.000,00
Project management	20.000,00
TOTAL	550.000,00 HRK

6. Pilot 5: City of Šibenik

Scope of the pilot

Since Zadar and Split airport are located relatively close to Šibenik, a lot of local residents and tourists use it as a starting point to travel to other European destinations. In order to get to Zadar and Split airport, citizens currently have to use their own private cars, pay for taxi or take a rent a car. The same is with tourists that land in Zadar and Split airports and want to visit Šibenik. There is no public transport available that connects Šibenik with both airports. There is also a lack of private owned transfer companies that could possibly connect Šibenik with airports in vicinity. So this pilot project is a great opportunity for companies to expand their offer. This is also a great opportunity for three cities to connect with direct bus lines and offer their residents and visitors 3 different

multimodal points including airports, main bus stations and sea ports. As part of the pilot project, City of Šibenik will establish direct bus lines to Split and Zadar airports. Four vehicles will be used for that purpose (two minibuses and two passenger vans). The analysis showed that there are all preconditions for the realization of the project (the number of tourists, the number of passengers at airports, the increase in the number of tourists arriving by plane, etc.).

The pilot project will directly contribute to intermodality and sustainable mobility in the project area. Some of the basic results to be achieved by the project are: increasing the number of tourist arrivals in Šibenik, increasing passenger transport service quality, contributing to job creation, reducing greenhouse gas emissions, reducing traffic jams, increasing road safety, and improving the quality of life in the city.

Main users involved

The City of Šibenik - The City of Šibenik is the project manager responsible for the realization of all the activities necessary for the successful preparation and implementation of the pilot project. The city is in charge of establishing and successfully maintaining communication with other stakeholders in the implementation of the project, the preparation and implementation of the public procurement of bus operators and subsidizing the operating costs of the carrier during the pilot project. The city is responsible for defining advertising channels and participating in promotional and information activities in the City and on its own websites as well as social networks.

Zadar Airport - Zadar Airport will participate in promotional activities, which will inform its passengers about the direct bus lines to city of Šibenik in the airport space as well as on their own website. The airport will provide access to the bus stop/parking spot for the buses included in the pilot project.

Split Airport - Split Airport will participate in promotional activities, which will inform its passengers about the direct bus lines to city of Šibenik in their own space as well as on their own website. The airport will provide access to the bus stops/parking spot for the buses included in the pilot project.

The bus station Šibenik - the bus station Šibenik, managed by the city company Gradski parking d.o.o., will be the starting and ending point of the bus lines towards Zadar Airport and Split Airport. The bus terminal manager will provide parking lots for buses and participate in ticket sales and promotional activities of informing the passengers about the existence of the bus lines as well as the bus schedule.

The bus operator - a private bus operator will be selected on the basis of public procurement for the purpose of running bus lines from the city of Šibenik (bus station Šibenik) towards Zadar Airport and Split Airport. The role of the bus operator is to transport passengers on the specified routes.

The Tourist Board of the City of Šibenik - will carry out part of promotional activities on its own websites and social networks and provide users (tourists and local residents) with information on bus lines.

List of the actions and gantt

Introducing the participants with the project: The purpose of the activity is to familiarize the representatives of the relevant stakeholders with the features of the pilot project, include them in the implementation of the project and reach a common agreement on the role / task of each stakeholder.

Defining the bus line order: The City of Šibenik will in cooperation with Zadar and Split airports determine a concrete shuttle bus schedule that needs to be adjusted to maximum extent according to flight schedule.

Ensure the availability of parking and standby facilities: Agreement with representatives of Zadar and Split airports, as well as Šibenik bus station, on the possibility to use certain bus stops and parking spaces during the project implementation.

Preparation of public procurement documentation: All the necessary documentation for the implementation of public procurement will be prepared.

Selection of bus lines operator: An operator which will run the bus lines will be chosen. A total of four vehicles will be used (two minibuses and two passenger vans).

Graphic design of promotional materials: As part of the activity, visual elements which will be used in project promotional activities will be designed. Also, buses which will be used for the transport of passengers will be painted.

Production of promotional materials: As part of the activity, promotional materials will be created, including the creation of info flyers and posters.

Painting the busses: Chosen vehicles will be painted in accordance with visual elements designed in the earlier phase.

Establish a system for online ticket purchases: In agreement with stakeholders in the tourism sector (primarily tourist agencies and airports), an effort will be made to enable online ticket purchase.

Running the bus lines on the routes Šibenik-Zadar airport and Šibenik-Split airport: This activity is foreseen to last two months, and should be implemented during the months of June and July. A total of four vehicles (2 minibuses and 2 passenger vans) would run on the routes from Šibenik to Zadar and Split airports. A total of approximately 15 departures daily is planned, 7 of which to Zadar airport

and 8 to Split airport. Estimated price for the service is 60 HRK in one direction, which includes passenger luggage.

Promotion and visibility of bus lines: The activity involves continuous promotion and visibility of the pilot project, ie bus lines and related elements (ticket prices, purchase options etc.) The activity will take place in physical form (flyers, etc) and via the Internet.

Determining the pilot project results: After the pilot project implementation the results will be determined where the benefits of the project will be identified. In accordance with the aforementioned, the entire justification of the bus lines (financial and economic, based on the ratio of revenues and expenditures as well as assessment of contribution to the development of the city's economy) will be determined.

Project management: The City of Šibenik will continuously coordinate the implementation of the activities and activities of all involved stakeholders.

Activity / month	2019							
	1	2	3	4	5	6	7	8
Introducing the participants with the project								
Defining the bus line order								
Ensure the availability of parking and standby facilities								
Preparation of public procurement documentation								
Selection of bus lines operator								
Graphic design of promotional materials								
Production of promotional materials								
Painting the busses								
Establish a system for online ticket purchases								
Running the bus lines on the routes Šibenik-Zadar airport and Šibenik-Split airport								

Promotion and visibility of bus lines								
Determining the pilot project results								
Project management								

SWOT analysis

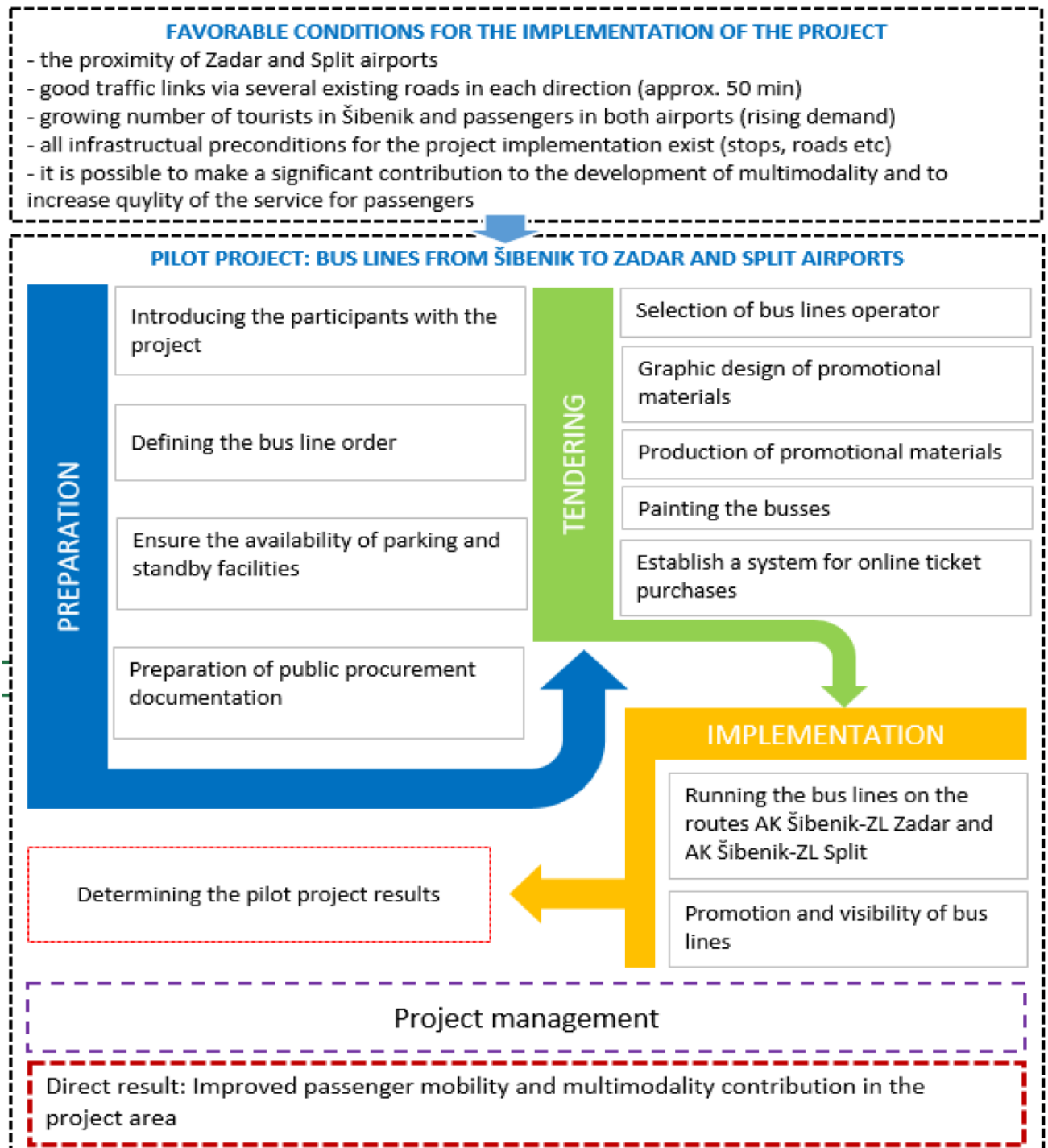
STRENGTHS: Proximity of Šibenik to Zadar and Split airports, High quality and number of existing traffic connections (roads), Zadar airports participates as a partner on the STEP-UP project, Capacities and experience of the City of Šibenik, Bus station Sibenik as the central location of bus transport in the county, The airport and bus station have enough parking spaces for buses.

WEAKNESSES: A small number of bus companies in the area of the City of Šibenik, Traffic tugs in the city of Šibenik during the tourist season.

OPPORTUNITIES: Growth of tourist arrivals in Šibenik and Croatia, Increase in the proportion of tourists arriving by plane to destination, Increase in the number of passenger traffic in Zadar and Split airports.

THREATS: Lack of interest of bus operators, Time needed for tendering process, Toll collection on highway, A large number of rent-a-car services at airports.

Architecture diagram



The total amount with the expected cost

Activity	Estimated cost (HRK)
Introducing the participants with the project	5.000,00
Defining the bus line order	5.000,00
Ensure the availability of parking and standby facilities	0,00
Preparation of public procurement documentation	0,00
Selection of bus lines operator	0,00
Graphic design of promotional materials	5.000,00
Production of promotional materials	20.000,00
Painting the busses	10.000,00
Establish a system for online ticket purchases	0,00
Running the bus lines on the routes Šibenik-Zadar airport and Šibenik-Split airport	220.000,00
Promotion and visibility of bus lines	35.000,00
Determining the pilot project results	0,00
Project management	0,00
TOTAL	300.000,00 HRK or approx 40.000 EUR

7. Pilot 6: Zadar airport

The pilot project will affect the info-mobility system of the region on a smaller scale, as for larger impact more resources and finances would be necessary. Nevertheless, this pilot offers one of the first contacts in regard to joint info-mobility services in the region, and as such can prove as a good point to build upon in the future. Specifically, Zadar Airport will benefit the most from the pilot as it lacks information access point on site, so getting information panels there will provide a great impact on quality of service of the airport. But, to foster the intermodal connectivity, it was necessary to involve stakeholders maintaining the regional vital passenger transport points Port Authority (ports in Zadar) and Liburnija d.o.o. (Zadar bus terminal). Information availability and visibility will increase by a lot, as a number of different transport data will be available at one place.

The pilot project will commence with the equipment tender procedure by the end of January, with the equipment set up on designated locations before the start of touristic season in Zadar, approximately mid-April.

This approach has weaknesses in regards to maintaining the system. Zadar airport lacks the capacity to update the information constantly, while numerous transport operators might not see the benefit in participating in this project. This specifically refers to bus lines that have well established lines, or ferry lines that are run in majority by one company and have the information at disposal at their page. However, intermodal info-service will prove of great benefit for island transport, as a number of bus lines run on the islands as well. Furthermore, a number of smaller bus companies could benefit from STEP-UP platform, as possibility to organize transport to touristic hotspots would become much easier to implement, but majority of the possibilities need a strong investment from the local government or business consortiums, which is hard to maintain.