# D 3.3.2 – TECHNICAL AND NON-TECHNICAL REQUIREMENTS

## Activity 3.3 – Technical and functional requirements

June, 2021 - Version final

Partner: PP7 – Jadrolinija, PP6 – Prosoft d.o.o.
Authors: Vanja Svetina, Aris Grozić, Nelida Pogačić
Email: vanja.svetina@jadrolinija.hr, aris.grozic@prosoftri.hr, Nelida.pogacic@prosoftri.hr

| | |
|---|---|
| **Project Acronym** | E-CHAIN |
| **Project ID Number** | 10048282 |
| **Project Title** | Enhanced Connectivity and Harmonization of data for the Adriatic Intermodal Network |
| **Priority Axis** | 4 - Maritime Transport |
| **Specific objective** | 4.1 - Improve the quality, safety and environmental sustainability of marine and coastal transport services and nodes by promoting multimodality in the programme area |
| **Work Package Number** | 3 |
| **Work Package Title** | Mobility Maritime Design |
| **Activity Number** | 3.3 |
| **Activity Title** | Technical and functional requirements |
| **Partner in Charge** | PP7 – Jadrolinija |
| **Partners involved** | LP - Municipality of Ancona<br>PP1 - Amatori Interestate SRL<br>PP2 - Brusutti S.R.L.<br>PP3 - G.M.T. S.P.A.<br>PP6 – Prosoft d.o.o.<br>PP7 - Jadrolinija<br>PP8 - City of Split |
| **Status** | Final |
| **Distribution** | Public |

## VERSION CONTROL

| Data | Vers | Prep | Revision | Appr | Rev | Comment |
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| | | | | | | |
| December, 2020 | Draft | Aris Grozić | Nelida Pogačić | | draft | |
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| | | | | | | |

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## ACRONYMS / ABBREVIATIONS

| ACRONYM | DEFINITION |
|---|---|
| SoA | State of the Art |
| PP | Project partners |
| PT | Project Team |
| TC | Technical task coordinator |
| WP | Work package |
| IT | Information Technologies |
| | |
| | |

## REFERENCE DOCUMENTATION

| No | TITLE | REPORT No. | PUBLISHED BY |
|---|---|---|---|
| 1 | **Application Form – E-CHAIN - Enhanced Connectivity and Harmonization of data for the Adriatic Intermodal Network**<br><br>2014 - 2020 Interreg V-A Italy - Croatia CBC Programme<br>Call for proposal 2017 Standard - E-CHAIN | Application ID: 10048282 | Lead Applicant: Municipality of Ancona |

# 1. INTRODUCTION

## 1.1 PURPOSE OF THE DOCUMENT

This document is relevant to the activity 3.3 Technical and functional requirements of E-CHAIN project - Enhanced Connectivity and Harmonization of data for the Adriatic Intermodal Network.

The purpose of this document is to collect non-technical and technical requirements for design and development of the services realized and integrated in E-CHAIN platform for the deployment in the pilot sites. The information provided in this report, together with information supplied in "Use case scenarios selection and preliminary requirements definition" (D 3.3.1), serve for drawing design of all pilot sites implementation and specifications preparation for all equipment and systems involved.

It is the operational document for the execution of the project being used:

- by the Task Manager (TM) and Project Team (PT) to provide detailed information E-CHAIN platform functional and technical requirements
- by the Activity 3.4 Platform and service design information needed for D 3.4.1 –E--CHAIN platform design and high-level architecture.
- by the Activities of WP 4 Platform and Service Implementation to provide data needed for D 3.3.1 – Use case scenarios selection and preliminary requirements definition for defining starting level of mobility services for scenarios and D 3.3.2 – Technical and non-technical requirements for information on current operational systems capabilities.

## 1.2 WORKING PRINCIPLE

The main source of data on the functional and technical requirements of the E-CHAIN platform are project partners and other major stakeholders as potential users of the platform on the side of service providers whose services will be provided by the platform.

In order to get a realistic picture of requirements that the E-CHAIN platform needs to meet, questionnaires have been prepared for the project partners and main stakeholders identified through previous activities.

The questionnaire is designed as a stakeholder interview conducted by the project partner and is relevant to the activities of WP3. It consists of several series of questions related to:

- identification data of the partner and of the person conducting the interview
- stakeholder data
- E-CHAIN functional requirements
    - E-CHAIN general functional requirements
    - Functional requirements for info-mobility
    - Booking & Ticketing
    - Web Services
- Technical requirements

This document contains the answers collected by the questionnaire, their analysis and conclusions related to the functional and technical requirements.

# 2. BACKGROUND INFORMATION

E-CHAIN (Enhanced Connectivity and Harmonization of data for the Adriatic Intermodal Network) main objective is to enhance connectivity and harmonization of data for the Adriatic Intermodal Network, through the realization of a modular integrated software (E-CHAIN platform) for the management of intermodal transport services in port areas for passenger transport. To enhance the current situation, E-CHAIN will focus on providing new services such as an improved Port multimodal info mobility system for the passengers, a ticketing system integrated with other transport modes, an advanced touristic co-marketing tool for the operators. These services will be designed and deployed in the selected pilot sites (Ancona, Split and Venice). A Business model suited to adapt the technology developed in the three applicative contexts will be created and specific needs will be taken into account.

The aim of WP3 is to design platform and services and to prepare the E-CHAIN services for deployment in the pilot sites (Ancona, Split and Venice).

The specific objectives of this WP are to:

- Establish the requirements and specifications for E-CHAIN services and for integration with existing services/systems
- Create a detailed reference architecture that complies with relevant standards and best practices
- Verify adapted services against the requirements and specifications before developing for pilot sites to WP4

# 3. PRESENTATION OF RESULTS OF CONDUCTED INTERVIEWS

For the purpose of accelerating procedure, gaining insights and valuable inputs regarding the advancement of E-CHAIN project, project partners had to conduct an interview among the relevant stakeholders in order to collect information necessary for the continuation of the project. A total of 25 stakeholders were kindly asked to contribute for the development of E-CHAIN pilot project.

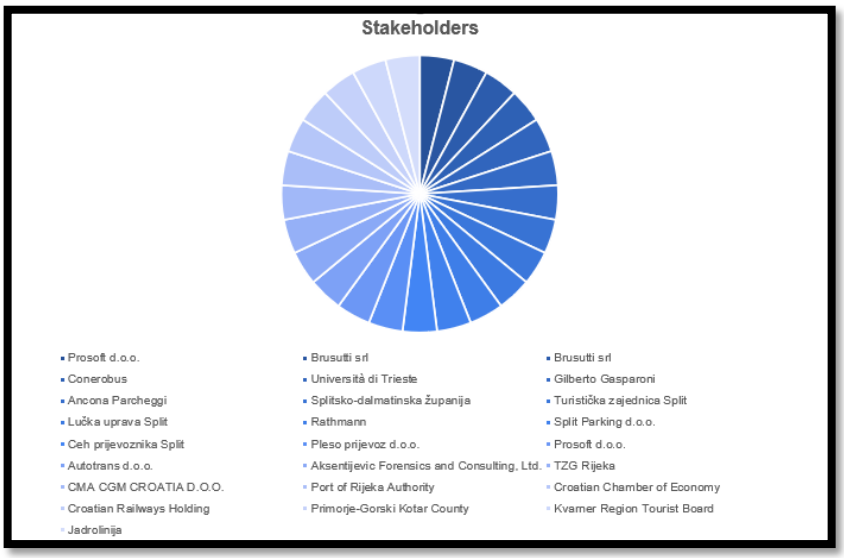



**Figure 1. List of stakeholders relevant to the project**

Regarding the contribution to the relevance of acquired answers, stakeholders were chosen in order to represent different groups covering all the major fields and expertise. Groups were divided in the following categories:

- Enterprises, transport operators
- Education and research
- Transport associations
- Tourist boards
- Local, regional and national authorities
- NGOs
- Professional association of business people in Croatia

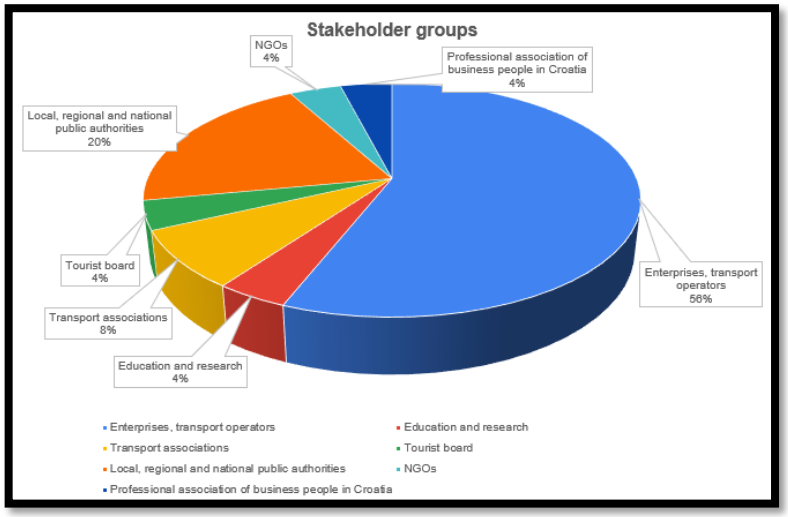



**Figure 2. Groups of stakeholders**

Furthermore, as the complexity of the task required detailed analysis of the stakeholders and their given answers, the questionnaire required stakeholders to give input regarding the type of service they provide and thus contribute to the society and the development of the project.

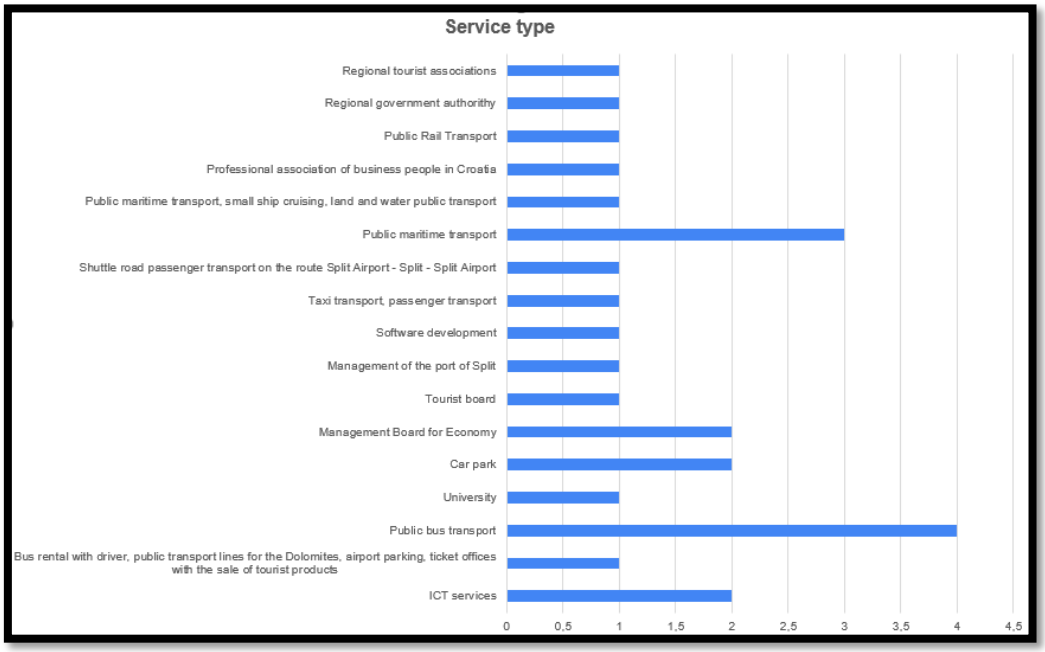
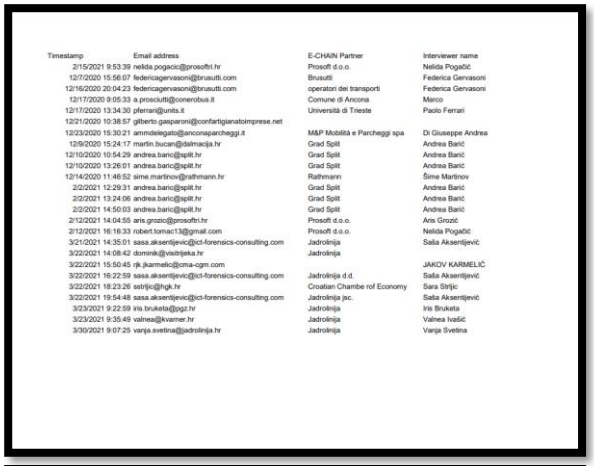
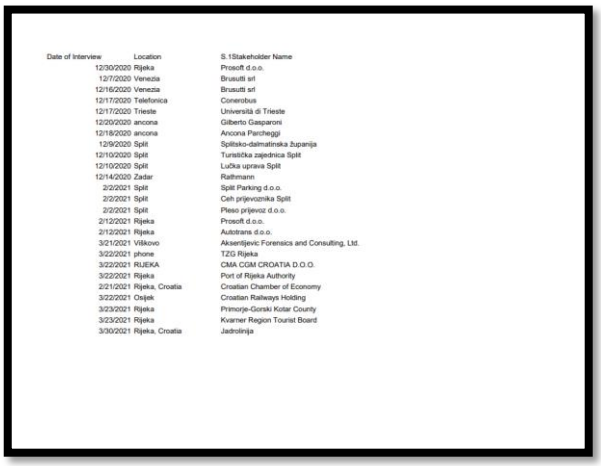



**Figure 3. Stakeholders according to the type of service they provide**

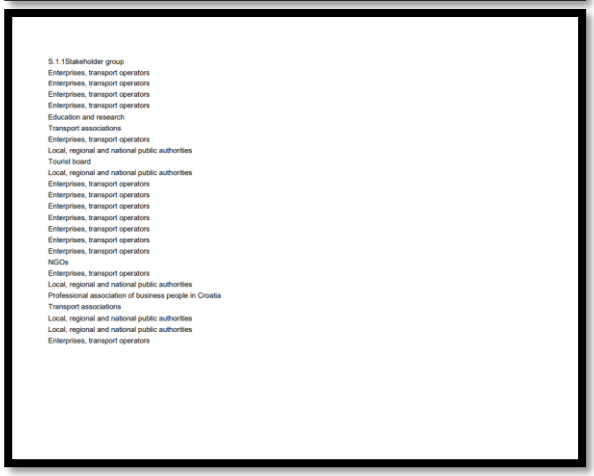
# 4. REQUIREMENT RESULTS



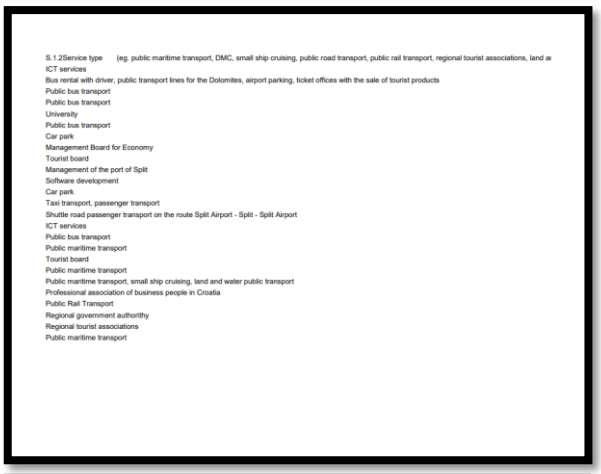
| Timestamp | Email address | E-CHAIN Partner | Interviewer name |
|---|---|---|---|
| 2/15/2021 9:53:39 | nelida.pogacic@prosoftri.hr | Prosoft d.o.o. | Nelida Pogačić |
| 12/7/2020 15:56:07 | federicagervasoni@brusutti.com | Brusutti | Federica Gervasoni |
| 12/16/2020 20:04:23 | federicagervasoni@brusutti.com | operatori dei transporti | Federica Gervasoni |
| 12/17/2020 9:05:33 | a.prosciutti@conerobus.it | Comune di Ancona | Marco |
| 12/17/2020 13:34:30 | pferrari@units.it | Università di Trieste | Paolo Ferrari |
| 12/21/2020 10:38:57 | gilberto.gasparoni@confartigianatoimprese.net | | |
| 12/23/2020 15:30:21 | ammdelegato@anconaparcheggi.it | M&P Mobilità e Parcheggi spa | Di Giuseppe Andrea |
| 12/9/2020 15:24:17 | martin.bucan@dalmacija.hr | Grad Split | Andrea Barić |
| 12/10/2020 10:54:29 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 12/10/2020 13:26:01 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 12/14/2020 11:46:52 | sime.martinov@rathmann.hr | Rathmann | Šime Martinov |
| 2/2/2021 12:29:31 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 2/2/2021 13:24:06 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 2/2/2021 14:50:03 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 2/12/2021 14:04:55 | aris.grozic@prosoftri.hr | Prosoft d.o.o. | Aris Grozić |
| 2/12/2021 16:16:33 | robert.tomac13@gmail.com | Prosoft d.o.o. | Nelida Pogačić |
| 3/21/2021 14:35:01 | sasa.aksentijevic@ict-forensics-consulting.com | Jadrolinija | Saša Aksentijević |
| 3/22/2021 14:08:42 | dominik@visitrijeka.hr | Jadrolinija | |
| 3/22/2021 15:50:45 | rjk.jkarmelic@cma-cgm.com | | JAKOV KARMELIĆ |
| 3/22/2021 16:22:59 | sasa.aksentijevic@ict-forensics-consulting.com | Jadrolinija d.d. | Saša Aksentijević |
| 3/22/2021 18:23:26 | sstrljic@hgk.hr | Croatian Chambe rof Economy | Sara Strljic |
| 3/22/2021 19:54:48 | sasa.aksentijevic@ict-forensics-consulting.com | Jadrolinija jsc. | Saša Aksentijević |
| 3/23/2021 9:22:59 | iris.bruketa@pgz.hr | Jadrolinija | Iris Bruketa |
| 3/23/2021 9:35:49 | valnea@kvarner.hr | Jadrolinija | Valnea Ivašić |
| 3/30/2021 9:07:25 | vanja.svetina@jadrolinija.hr | Jadrolinija | Vanja Svetina |



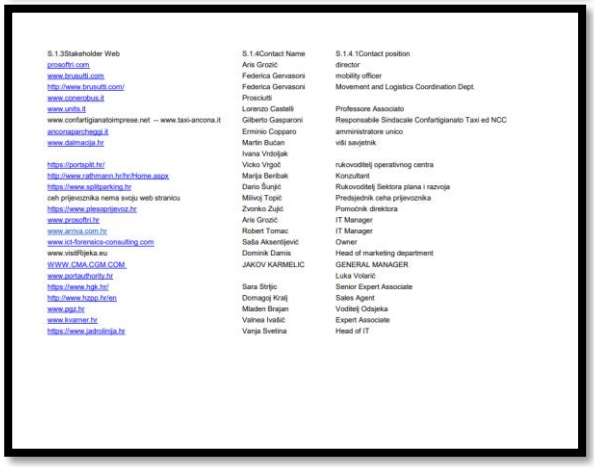
| Date of Interview | Location | S.1Stakeholder Name |
|---|---|---|
| 12/30/2020 | Rijeka | Prosoft d.o.o. |
| 12/7/2020 | Venezia | Brusutti srl |
| 12/16/2020 | Venezia | Brusutti srl |
| 12/17/2020 | Telefonica | Conerobus |
| 12/17/2020 | Trieste | Università di Trieste |
| 12/20/2020 | ancona | Gilberto Gasparoni |
| 12/18/2020 | ancona | Ancona Parcheggi |
| 12/9/2020 | Split | Splitsko-dalmatinska županija |
| 12/10/2020 | Split | Turistička zajednica Split |
| 12/10/2020 | Split | Lučka uprava Split |
| 12/14/2020 | Zadar | Rathmann |
| 2/2/2021 | Split | Split Parking d.o.o. |
| 2/2/2021 | Split | Ceh prijevoznika Split |
| 2/2/2021 | Split | Pleso prijevoz d.o.o. |
| 2/12/2021 | Rijeka | Prosoft d.o.o. |
| 2/12/2021 | Rijeka | Autotrans d.o.o. |
| 3/21/2021 | Vilkovo | Aksentijevic Forensics and Consulting, Ltd. |
| 3/22/2021 | phone | TZG Rijeka |
| 3/22/2021 | RIJEKA | CMA CGM CROATIA D.O.O. |
| 3/22/2021 | Rijeka | Port of Rijeka Authority |
| 2/21/2021 | Rijeka, Croatia | Croatian Chamber of Economy |
| 3/22/2021 | Osijek | Croatian Railways Holding |
| 3/23/2021 | Rijeka | Primorje-Gorski Kotar County |
| 3/23/2021 | Rijeka | Kvarner Region Tourist Board |
| 3/30/2021 | Rijeka, Croatia | Jadrolinija |



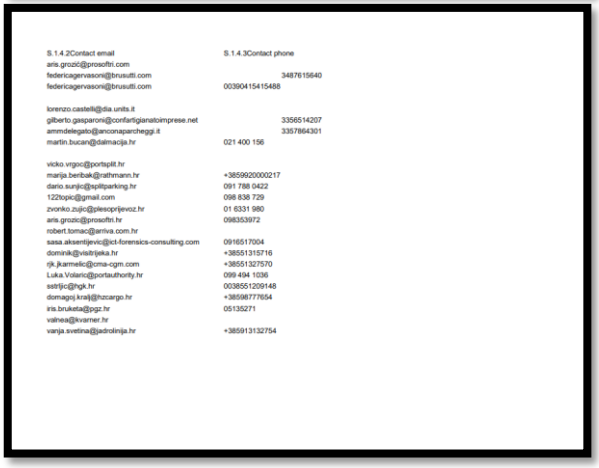
| S.1.1Stakeholder group |
|---|
| Enterprises, transport operators |
| Enterprises, transport operators |
| Enterprises, transport operators |
| Enterprises, transport operators |
| Education and research |
| Transport associations |
| Enterprises, transport operators |
| Local, regional and national public authorities |
| Tourist board |
| Local, regional and national public authorities |
| Enterprises, transport operators |
| Enterprises, transport operators |
| Enterprises, transport operators |
| Enterprises, transport operators |
| Enterprises, transport operators |
| Enterprises, transport operators |
| Enterprises, transport operators |
| NGOs |
| Enterprises, transport operators |
| Local, regional and national public authorities |
| Professional association of business people in Croatia |
| Transport associations |
| Local, regional and national public authorities |
| Local, regional and national public authorities |
| Enterprises, transport operators |



| S.1.2Service type (eg. public maritime transport, DMC, small ship cruising, public road transport, public rail transport, regional tourist associations, land a |
|---|
| ICT services |
| Bus rental with driver, public transport lines for the Dolomites, airport parking, ticket offices with the sale of tourist products |
| Public bus transport |
| Public bus transport |
| University |
| Public bus transport |
| Car park |
| Management Board for Economy |
| Tourist board |
| Management of the port of Split |
| Software development |
| Car park |
| Taxi transport, passenger transport |
| Shuttle road passenger transport on the route Split Airport - Split - Split Airport |
| ICT services |
| Public bus transport |
| Public maritime transport |
| Tourist board |
| Public maritime transport |
| Public maritime transport, small ship cruising, land and water public transport |
| Professional association of business people in Croatia |
| Public Rail Transport |
| Regional government authorithy |
| Regional tourist associations |
| Public maritime transport |



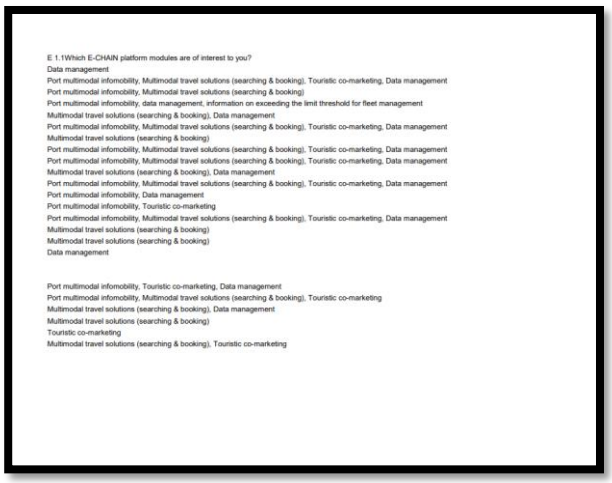
| S.1.3Stakeholder Web | S.1.4Contact Name | S.1.4.1Contact position |
|---|---|---|
| prosoftri.com | Aris Grozić | director |
| www.brusutti.com | Federica Gervasoni | mobility officer |
| http://www.brusutti.com/ | Federica Gervasoni | Movement and Logistics Coordination Dept. |
| www.conerobus.it | Prosciutti | |
| www.units.it | Lorenzo Castelli | Professore Associato |
| www.confartigianatoimprese.net -- www.taxi-ancona.it | Gilberto Gasparoni | Responsabile Sindacale Confartigianato Taxi ed NCC |
| anconaparcheggi.it | Erminio Copparo | amministratore unico |
| www.dalmacija.hr | Martin Bucan | viši savjetnik |
| | Ivana Vidoljak | |
| https://portsplit.hr/ | Vicko Vrgoč | rukovoditelj operativnog centra |
| http://www.rathmann.hr/hr/Home.aspx | Marija Beribak | Konzultant |
| https://www.splitparking.hr | Dario Šunjić | Rukovoditelj Sektora plana i razvoja |
| ceh prijevoznika nema svoju web stranicu | Milivoj Topić | Predsjednik ceha prijevoznika |
| https://www.plesoprijevoz.hr | Zvonko Zujić | Pomoćnik direktora |
| www.prosoftri.hr | Aris Grozić | IT Manager |
| www.arriva.com.hr | Robert Tomac | IT Manager |
| www.ict-forensics-consulting.com | Saša Aksentijević | Owner |
| www.visitRijeka.eu | Dominik Damis | Head of marketing department |
| WWW.CMA-CGM.COM | JAKOV KARMELIC | GENERAL MANAGER |
| www.portauthority.hr | | Luka Volarić |
| https://www.hgk.hr/ | Sara Strljic | Senior Expert Associate |
| http://www.hzpp.hr/en | Domagoj Kralj | Sales Agent |
| www.pgz.hr | Mladen Brajan | Voditelj Odjeka |
| www.kvarner.hr | Valnea Ivašić | Expert Associate |
| https://www.jadrolinija.hr | Vanja Svetina | Head of IT |



| S.1.4.2Contact email | S.1.4.3Contact phone |
|---|---|
| aris.grozić@prosoftri.com | |
| federicagervasoni@brusutti.com | 3487615640 |
| federicagervasoni@brusutti.com | 00390415415488 |
| | |
| lorenzo.castelli@dia.units.it | |
| gilberto.gasparoni@confartigianatoimprese.net | 3356514207 |
| ammdelegato@anconaparcheggi.it | 3357864301 |
| martin.bucan@dalmacija.hr | 021 400 156 |
| | |
| vicko.vrgoc@portsplit.hr | |
| marija.beribak@rathmann.hr | +3859920000217 |
| dario.sunjic@splitparking.hr | 091 788 0422 |
| 122topic@gmail.com | 098 836 729 |
| zvonko.zujic@plesoprijevoz.hr | 01 6331 980 |
| aris.grozic@prosoftri.hr | 098353972 |
| robert.tomac@arriva.com.hr | |
| sasa.aksentijevic@ict-forensics-consulting.com | 0916517004 |
| dominik@visitrijeka.hr | +38551315716 |
| rjk.jkarmelic@cma-cgm.com | +38551327570 |
| Luka.Volaric@portauthority.hr | 099 494 1036 |
| sstrljic@hgk.hr | 0038551209148 |
| domagoj.kralj@hzcargo.hr | +38598777654 |
| iris.bruketa@pgz.hr | 05135271 |
| valnea@kvarner.hr | |
| vanja.svetina@jadrolinija.hr | +385913132754 |

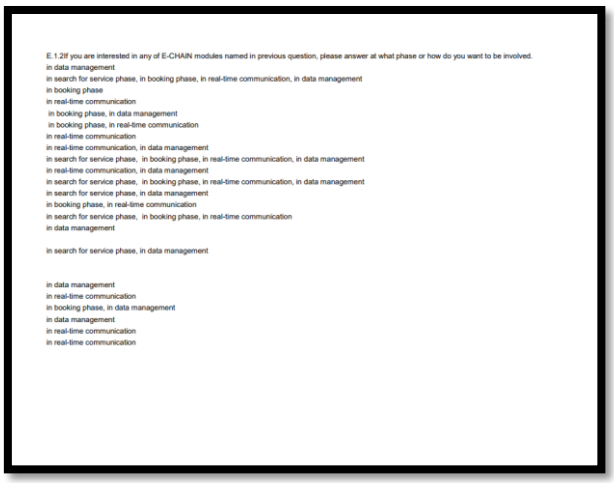
# 4.1. FUNCTIONAL REQUIREMENTS

## 4.1.1. E-CHAIN GENERAL FUNCTIONAL REQUIREMENTS



E 1.1Which E-CHAIN platform modules are of interest to you?
Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking)
Port multimodal infomobility, data management, information on exceeding the limit threshold for fleet management
Multimodal travel solutions (searching & booking), Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Multimodal travel solutions (searching & booking)
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Multimodal travel solutions (searching & booking), Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Port multimodal infomobility, Data management
Port multimodal infomobility, Touristic co-marketing
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Multimodal travel solutions (searching & booking)
Multimodal travel solutions (searching & booking)
Data management

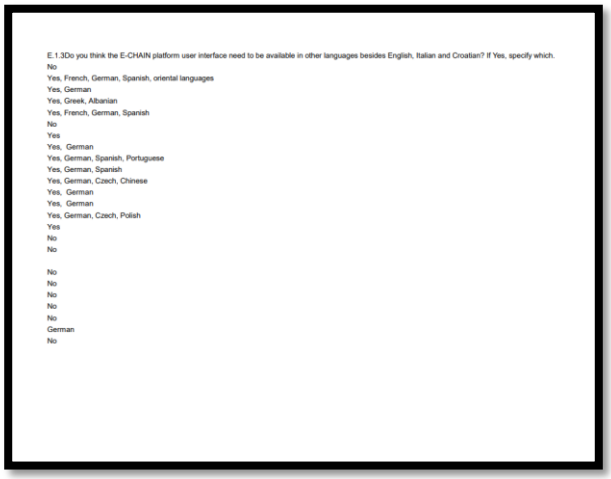
Port multimodal infomobility, Touristic co-marketing, Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing
Multimodal travel solutions (searching & booking), Data management
Multimodal travel solutions (searching & booking)
Touristic co-marketing
Multimodal travel solutions (searching & booking), Touristic co-marketing



E.1.2If you are interested in any of E-CHAIN modules named in previous question, please answer at what phase or how do you want to be involved.
in data management
in search for service phase, in booking phase, in real-time communication, in data management
in booking phase
in real-time communication
in booking phase, in data management
in booking phase, in real-time communication
in real-time communication
in real-time communication, in data management
in search for service phase, in booking phase, in real-time communication, in data management
in real-time communication, in data management
in search for service phase, in booking phase, in real-time communication, in data management
in search for service phase, in data management
in booking phase, in real-time communication
in search for service phase, in booking phase, in real-time communication
in data management

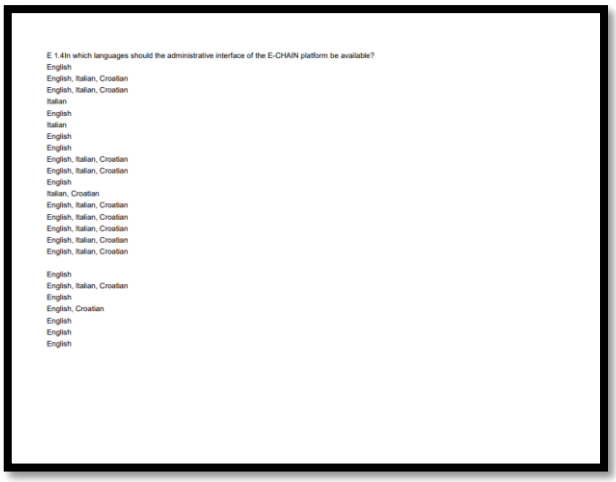
in search for service phase, in data management

in data management
in real-time communication
in booking phase, in data management
in data management
in real-time communication
in real-time communication



E.1.3Do you think the E-CHAIN platform user interface need to be available in other languages besides English, Italian and Croatian? If Yes, specify which.
No
Yes, French, German, Spanish, oriental languages
Yes, German
Yes, Greek, Albanian
Yes, French, German, Spanish
No
Yes
Yes, German
Yes, German, Spanish, Portuguese
Yes, German, Spanish
Yes, German, Czech, Chinese
Yes, German
Yes, German
Yes, German, Czech, Polish
Yes
No
No

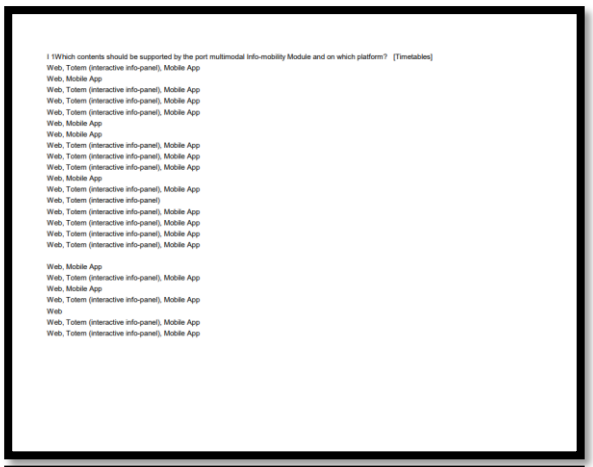
No
No
No
No
No
German
No



E 1.4In which languages should the administrative interface of the E-CHAIN platform be available?
English
English, Italian, Croatian
English, Italian, Croatian
Italian
English
Italian
English
English
English, Italian, Croatian
English, Italian, Croatian
English
Italian, Croatian
English, Italian, Croatian
English, Italian, Croatian
English, Italian, Croatian
English, Italian, Croatian
English, Italian, Croatian

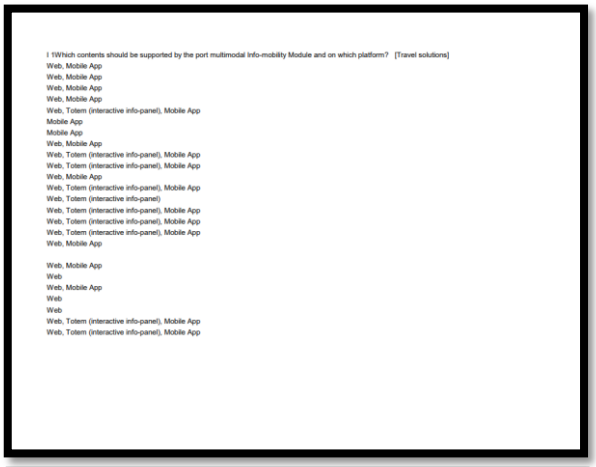
English
English, Italian, Croatian
English
English, Croatian
English
English
English

## 4.1.2. FUNCTIONAL REQUIREMENTS FOR INFO-MOBILITY



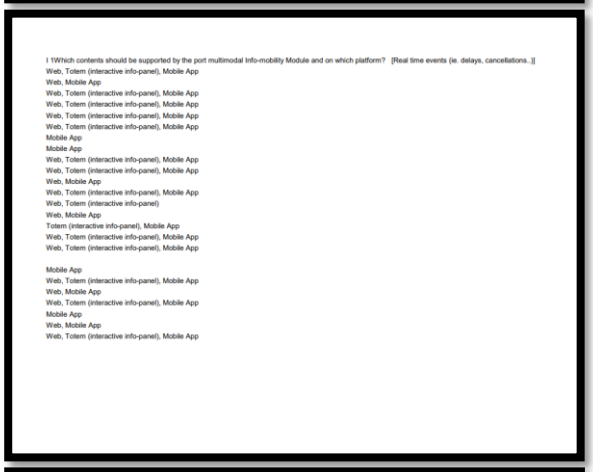
I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Timetables]
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App

Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App



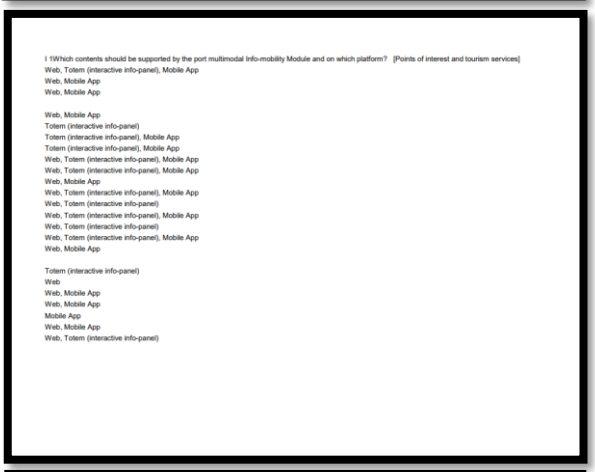
I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Travel solutions]
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Mobile App
Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App

Web, Mobile App
Web
Web, Mobile App
Web
Web
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App



I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Real time events (ie. delays, cancellations..)]
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Mobile App
Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Mobile App
Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App

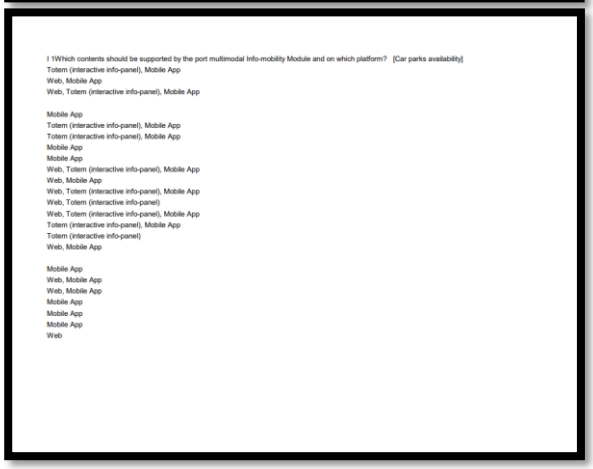
Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App



I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Points of interest and tourism services]
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Mobile App

Web, Mobile App
Totem (interactive info-panel)
Totem (interactive info-panel), Mobile App
Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App

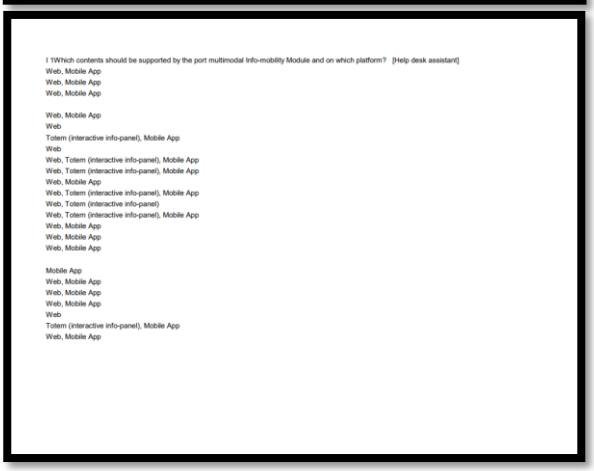
Totem (interactive info-panel)
Web
Web, Mobile App
Web, Mobile App
Mobile App
Web, Mobile App
Web, Totem (interactive info-panel)



I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Car parks availability]
Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App

Mobile App
Totem (interactive info-panel), Mobile App
Totem (interactive info-panel), Mobile App
Mobile App
Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Totem (interactive info-panel), Mobile App
Totem (interactive info-panel)
Web, Mobile App

Mobile App
Web, Mobile App
Web, Mobile App
Mobile App
Mobile App
Mobile App
Web



I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Help desk assistant]
Web, Mobile App
Web, Mobile App
Web, Mobile App

Web, Mobile App
Web
Totem (interactive info-panel), Mobile App
Web
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App

Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web
Totem (interactive info-panel), Mobile App
Web, Mobile App

I 1.1 List other contents if you think they should be supported in the E-CHAIN info-mobility module?

emissions produced for that shift
no
Information about changes to the service that often occurs eg. extended service until ... etc.

transport on request, electric chargers for vehicles, etc.
cultural and sporting events and gastronomy

/
basic information about each city, the nearest next city
/
Air traffic

Links to traffic situation on roads / national auto club

Nautical maritime situation in the vicinity of the passenger port

Those continuations of travel that are possible by rail (partial timetable)
/

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Jadrolinija]
Web, Totem, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Link to carrier/terminal

Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Totem, Link to carrier/terminal
Web, Totem
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
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Web, Totem, Link to carrier/terminal
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Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Water transport]

Web, Link to carrier/terminal
Web, Link to carrier/terminal

Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Totem, Link to carrier/terminal

Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
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Web, Totem, Link to carrier/terminal
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Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web

Web

Web, Totem, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Link to carrier/terminal

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Rail Transport]
Web, Totem, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Link to carrier/terminal

Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Totem, Link to carrier/terminal
Link to carrier/terminal
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Web, Totem, Link to carrier/terminal
Web

Web
Web, Link to carrier/terminal
Totem
Web, Link to carrier/terminal
Link to carrier/terminal
Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Bus transport]
Web, Totem, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
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Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web

Web
Web, Link to carrier/terminal
Web, Totem
Web, Link to carrier/terminal
Link to carrier/terminal
Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Airport]
Web, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Link to carrier/terminal

Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
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Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web

Web
Web, Link to carrier/terminal
Web, Totem
Web, Link to carrier/terminal
Link to carrier/terminal
Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal

I 1.2.1 Please provide additional information on selected timetables (eg. Train terminal – Ancona), source of information and add more timetables if appropria
Krk Airport – Jadrolinija, Rijeka bus station, Rijeka rail station

Venice train terminal - connections via IT with Venice Bus Station, Venice Airport, Taxi and Shared Travel, ...

/
/
links to third destinations (eg Split - Medjugorje, Split - Plitvice Lakes)
Air traffic - Rijeka

Relevant timetable for the first "hop" of the travel involving E-CHAIN pilot sites

Most traffic operators including rail, water, road and air can share their timetable using standard API and message exchange through message broker (XML
/

I.3.1 Travel solutions - How you expect the Travel Solutions Module to affect resource optimization?
mobility, CO2 reduction, timetables optimisation
better programming can be made on the means used on the basis of the most requested times
resource optimization is expected to connect carriers and capacities through partnership agreements, better solutions for filling capacities will bring more mor

give greater travel flexibility and the possibility for the traveler to choose alternative means and routes

better use of information

Faster arrival to the destination and selection of the optimal route
better recognition of when to need to strengthen timetables, introduce other new solutions to reduce congestion
less crowds, more mobility, passengers will make decisions based on better information, will ask for less information by other routes
travel time reduction, cost optimization and thus the price of services, increasing the reliability and quality of travel
Good

They should decrease time spent to organize travel. Also, additional discount could be offered if a bundle of tickets for various forms of transport is purchase

If properly executed it could be mildly attractive for the passenger using multimodal passenger means and could slightly increase use of means of maritime t

If the question is related to railway passenger operators, I would say in a negligible way, because the system is not a part of internal IT systems of operators,
/

To provide more information on one service to the passengers.

I 1.3.2 Travel solutions - which data are needed to optimize resources and who owns them?
Jadrolinija, Arriva timetables, Rail timetables

ey for investments in better (electric) vehicles, etc.

traffic analysis of the route, analysis of traffic loads, alternative modes of transport

loads of traffic and road or service interruptions

transport service providers and the Harbour Master's Office
Google and direct input of additional route information
number of passengers, number of vehicles, number of flights, road loads; data are owned by individual operators / service servers, HAK
data on the state of congestion in certain directions; carrier association
alternative modes of transport on the route, traffic routes, connection hoops (bus - railway)

prices, shortest route in terms of distance covered, optimal route, cheapest route, scenic route with POI, one or two alternative routes for each selection

Probably a detailed analysis of timetables should be done using operational research tools and implement it as a part of timetable tool on totems, web and m

I would say timetables, but also sensitive financial data that most operators probably will not share. For example, some variable prices depend on volume of
name of the route
name of the route - source of information
Every participant in the project has its own source of data.

I 4.1 Real time events - specify the types of events for this module and what are the sources of event data
delays, cancellations, accidents
closing of the snow passes in the lines for the Dolomites provided by the contacts on site; delays in embarkation / disembarkation due to fog that does not all
delays, cancellations and possible solutions (such as plane that gives in flight situation for connections)

delays, cancellations, accidents
Public sources
don't know
delays, traffic congestion information and offers of alternative routes
data sources are individual carriers

User logins, information from the system admin - connection to the automatic systems of the transport service provider
delays, cancellations
delays, cancellations, natural disasters, accidents, information on closed roads or some road obstacles, information on road works
delays, cancellations, natural disasters, accidents
delays, cancellations

Road traffic congestion, airport congestion, delays, cancellations, unforeseen events, other

Emergency data, cancellations and delays but only those that are relevant for the travel itinerary of the particular passenger

Natural disaster and accidents. Then, if covid situation will persist, fresh information about covid requirements, situation and testing in areas where the passe
delays
accidents, delays
Cancellations, interrupted lines, delays

I 4.2Real time events - how should the system provide information to passengers in the case of an event ? [delays]
Web, Totem, Mobile App, SMS
Web, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Totem, Mobile App, SMS
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem
Web, Totem, Mobile App
Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App

SMS
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App, SMS

I 4.2Real time events - how should the system provide information to passengers in the case of an event ? [cancelations]
Web, Totem, Mobile App, SMS
Web, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Totem, Mobile App, SMS
Web, Totem, Mobile App
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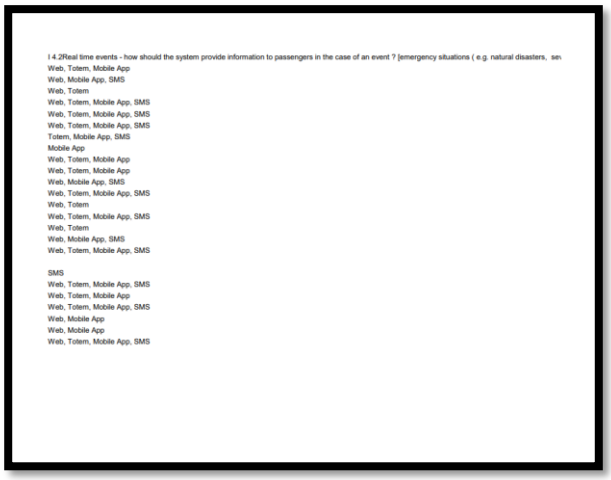
Web, Totem, Mobile App, SMS



I 4.2Real time events - how should the system provide information to passengers in the case of an event ? [emergency situations ( e.g. natural disasters, se
Web, Totem, Mobile App
Web, Mobile App, SMS
Web, Totem
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Totem, Mobile App, SMS
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
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SMS
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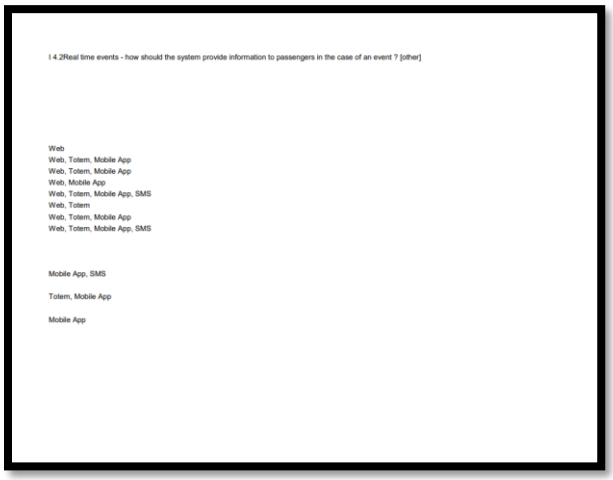
Web, Mobile App
Web, Totem, Mobile App, SMS



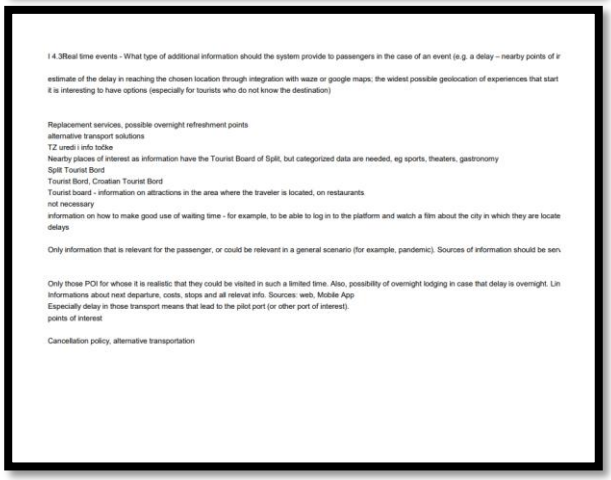
I 4.2Real time events - how should the system provide information to passengers in the case of an event ? [other]

Web
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App, SMS
Web, Totem
Web, Totem, Mobile App
Web, Totem, Mobile App, SMS

Mobile App, SMS

Totem, Mobile App

Mobile App



I 4.3Real time events - What type of additional information should the system provide to passengers in the case of an event (e.g. a delay – nearby points of ir

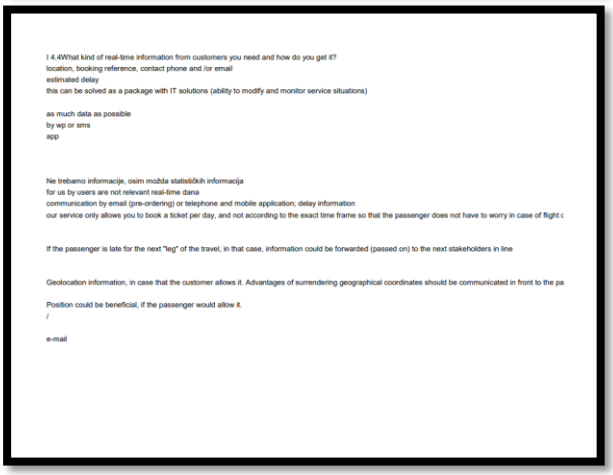
estimate of the delay in reaching the chosen location through integration with waze or google maps; the widest possible geolocation of experiences that start
it is interesting to have options (especially for tourists who do not know the destination)

Replacement services, possible overnight refreshment points
alternative transport solutions
TZ uredi i info točke
Nearby places of interest as information have the Tourist Board of Split, but categorized data are needed, eg sports, theaters, gastronomy
Split Tourist Bord
Tourist Bord, Croatian Tourist Bord
Tourist board - information on attractions in the area where the traveler is located, on restaurants
not necessary
information on how to make good use of waiting time - for example, to be able to log in to the platform and watch a film about the city in which they are locate
delays

Only information that is relevant for the passenger, or could be relevant in a general scenario (for example, pandemic). Sources of information should be ser

Only those POI for whose it is realistic that they could be visited in such a limited time. Also, possibility of overnight lodging in case that delay is overnight. Lin
Informations about next departure, costs, stops and all relevat info. Sources: web, Mobile App
Especially delay in those transport means that lead to the pilot port (or other port of interest).
points of interest

Cancellation policy, alternative transportation



I 4.4What kind of real-time information from customers you need and how do you get it?
location, booking reference, contact phone and /or email
estimated delay
this can be solved as a package with IT solutions (ability to modify and monitor service situations)

as much data as possible
by wp or sms
app

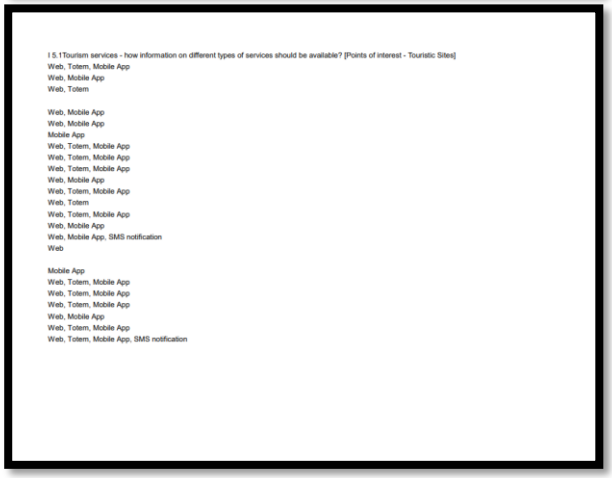
Ne trebamo informacije, osim možda statističkih informacija
for us by users are not relevant real-time dana
communication by email (pre-ordering) or telephone and mobile application; delay information
our service only allows you to book a ticket per day, and not according to the exact time frame so that the passenger does not have to worry in case of flight c

If the passenger is late for the next "leg" of the travel, in that case, information could be forwarded (passed on) to the next stakeholders in line

Geolocation information, in case that the customer allows it. Advantages of surrendering geographical coordinates should be communicated in front to the pa

Position could be beneficial, if the passenger would allow it.
/

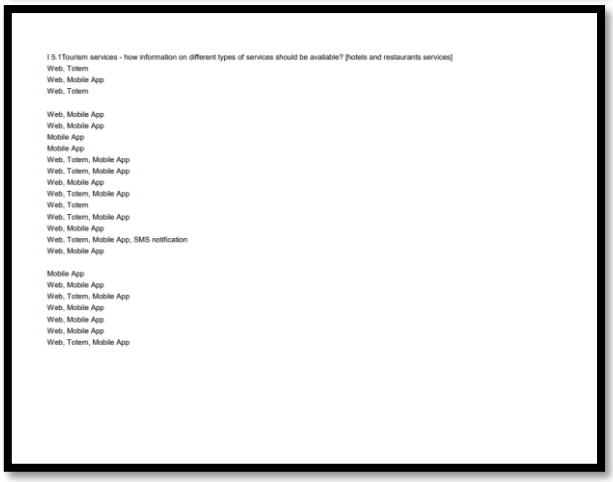
e-mail



I 5.1Tourism services - how information on different types of services should be available? [Points of interest - Touristic Sites]
Web, Totem, Mobile App
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Mobile App
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem
Web, Totem, Mobile App
Web, Mobile App
Web, Mobile App, SMS notification
Web

Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App, SMS notification



I 5.1Tourism services - how information on different types of services should be available? [hotels and restaurants services]
Web, Totem
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Mobile App
Mobile App
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App, SMS notification
Web, Mobile App

Mobile App
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Web, Totem, Mobile App
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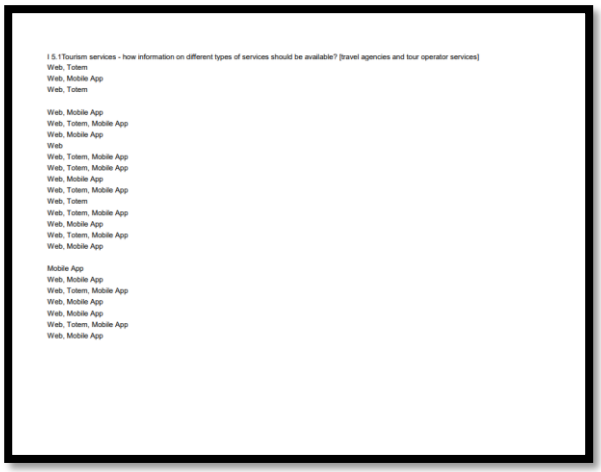
Web, Mobile App
Web, Totem, Mobile App


I 5.1Tourism services - how information on different types of services should be available? [travel agencies and tour operator services]
Web, Totem
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web
Web, Totem, Mobile App
Web, Totem, Mobile App
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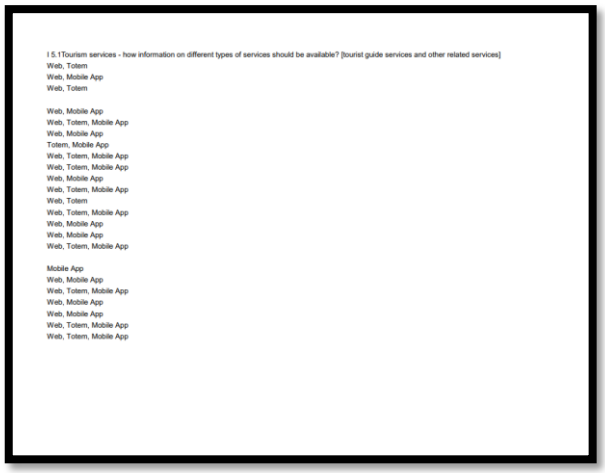
Web, Mobile App


I 5.1Tourism services - how information on different types of services should be available? [tourist guide services and other related services]
Web, Totem
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Totem, Mobile App
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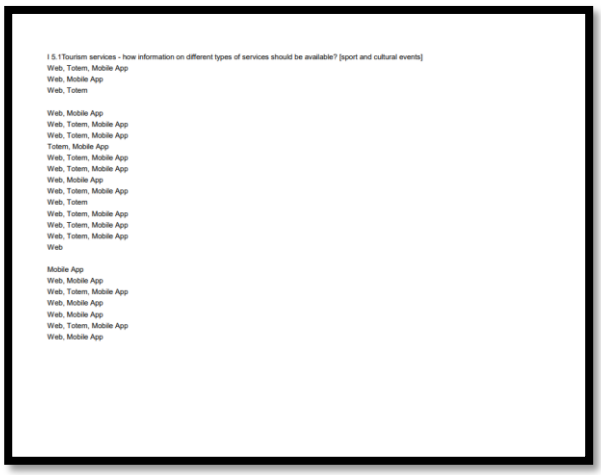
Web, Totem, Mobile App


I 5.1Tourism services - how information on different types of services should be available? [sport and cultural events]
Web, Totem, Mobile App
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
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Web, Totem
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Web, Totem, Mobile App
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Web

Mobile App
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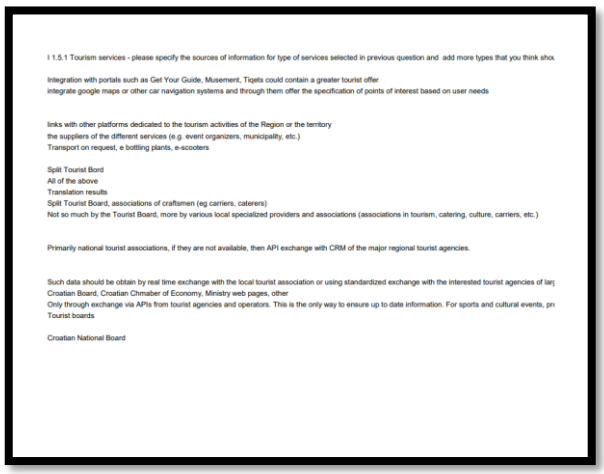
Web, Totem, Mobile App
Web, Mobile App


I 1.5.1 Tourism services - please specify the sources of information for type of services selected in previous question and add more types that you think sho

Integration with portals such as Get Your Guide, Musement, Tigets could contain a greater tourist offer
integrate google maps or other car navigation systems and through them offer the specification of points of interest based on user needs

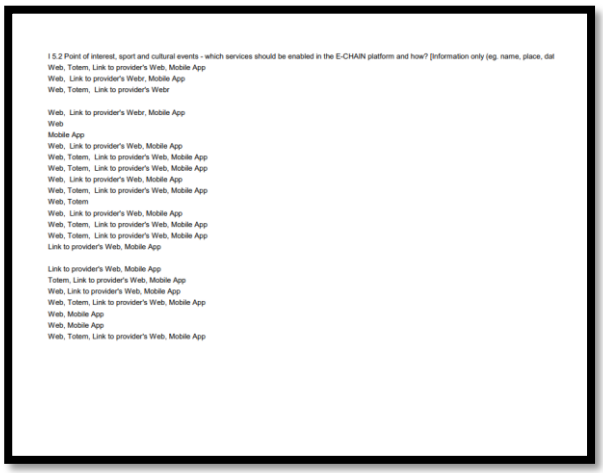
links with other platforms dedicated to the tourism activities of the Region or the territory
the suppliers of the different services (e.g. event organizers, municipality, etc.)
Transport on request, e bottling plants, e-scooters

Split Tourist Bord
All of the above
Translation results
Split Tourist Board, associations of craftsmen (eg carriers, caterers)
Not so much by the Tourist Board, more by various local specialized providers and associations (associations in tourism, catering, culture, carriers, etc.)

Primarily national tourist associations, if they are not available, then API exchange with CRM of the major regional tourist agencies.

Such data should be obtain by real time exchange with the local tourist association or using standardized exchange with the interested tourist agencies of lar
Croatian Board, Croatian Chmaber of Economy, Ministry web pages, other
Only through exchange via APIs from tourist agencies and operators. This is the only way to ensure up to date information. For sports and cultural events, pr
Tourist boards

Croatian National Board


I 5.2 Point of interest, sport and cultural events - which services should be enabled in the E-CHAIN platform and how? [Information only (eg. name, place, dat
Web, Totem, Link to provider's Web, Mobile App
Web, Link to provider's Webr, Mobile App
Web, Totem, Link to provider's Webr

Web, Link to provider's Webr, Mobile App
Web
Mobile App
Web, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Totem
Web, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Link to provider's Web, Mobile App

Link to provider's Web, Mobile App
Totem, Link to provider's Web, Mobile App
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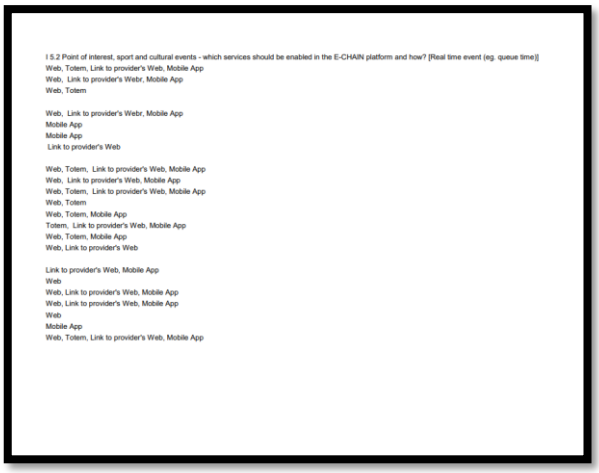
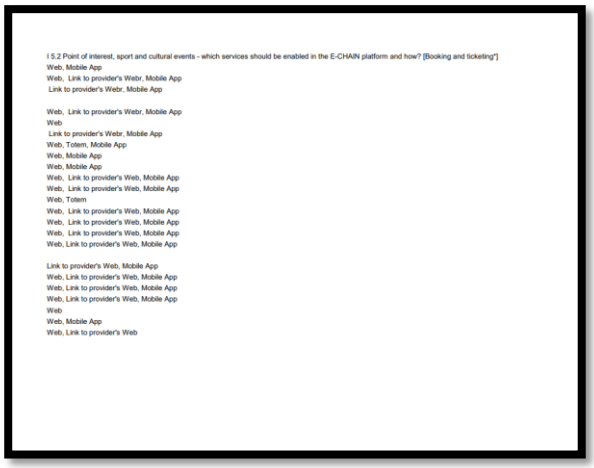
Web, Totem, Link to provider's Web, Mobile App


I 5.2 Point of interest, sport and cultural events - which services should be enabled in the E-CHAIN platform and how? [Real time event (eg. queue time)]
Web, Totem, Link to provider's Web, Mobile App
Web, Link to provider's Webr, Mobile App
Web, Totem

Web, Link to provider's Webr, Mobile App
Mobile App
Mobile App
Link to provider's Web

Web, Totem, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Totem
Web, Totem, Mobile App
Totem, Link to provider's Web, Mobile App
Web, Totem, Mobile App
Web, Link to provider's Web

Link to provider's Web, Mobile App
Web
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web
Mobile App
Web, Totem, Link to provider's Web, Mobile App


I 5.2 Point of interest, sport and cultural events - which services should be enabled in the E-CHAIN platform and how? [Booking and ticketing"]
Web, Mobile App
Web, Link to provider's Webr, Mobile App
Link to provider's Webr, Mobile App
Web, Link to provider's Webr, Mobile App
Web
Link to provider's Webr, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Totem
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Link to provider's Web, Mobile App
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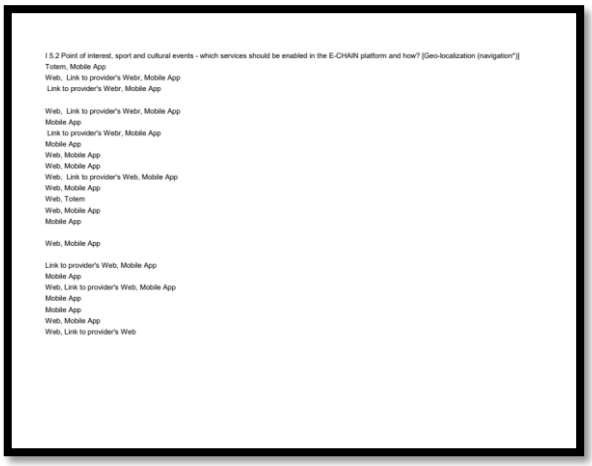
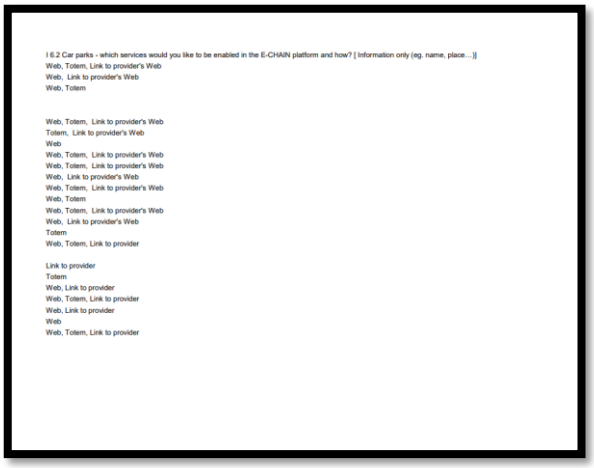
Web
Web, Mobile App
Web, Link to provider's Web


I 5.2 Point of interest, sport and cultural events - which services should be enabled in the E-CHAIN platform and how? [Geo-localization (navigation")]
Totem, Mobile App
Web, Link to provider's Webr, Mobile App
Link to provider's Webr, Mobile App
Web, Link to provider's Webr, Mobile App
Mobile App
Link to provider's Webr, Mobile App
Mobile App
Web, Mobile App
Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Mobile App
Web, Totem
Web, Mobile App
Mobile App
Web, Mobile App
Link to provider's Web, Mobile App
Mobile App
Web, Link to provider's Web, Mobile App
Mobile App
Mobile App
Web, Mobile App
Web, Link to provider's Web


I 6.1Car parks - specify parking services and what are the sources of information
Rijeka - Rijeka traffic, Rijeka plus
parking space reservation with possible integration to public transport if not equipped with a shuttle service included. It is necessary to communicate the date
number of free spaces, price, maximum parking duration, options for other parking spaces, etc.
places, availability of stalls, distance from the port area
distance - availability - cost
Split car parks
Split car parks
Split car parks
Free spaces, all parking lots
parking lots - open, street, public garages; source of information: website, mobile platform
information on the number of free parking spaces at certain locations - on billboards
all information about parking options is very important and should be easily accessible
Free spaces, all parking lots
Parking location, availability, pricing and type of parking (garage, open space behind the ramp, street parking). Guarded or not. API exchange with the parkin
Automatic exchange with the billing parking system, they usually allow such exchange. It would be important to share data about type of parking and availabil
Parking type (behind the ramp, garage parking, parking in the street), free parking and paid parking, payment possibilities (m-parking, ticket, credit card virtu
/


I 6.2 Car parks - which services would you like to be enabled in the E-CHAIN platform and how? [ Information only (eg. name, place...)]
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web, Totem
Web, Totem, Link to provider's Web
Totem, Link to provider's Web
Web
Web, Totem, Link to provider's Web
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web, Totem, Link to provider's Web
Web, Totem
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Totem
Web, Totem, Link to provider
Link to provider
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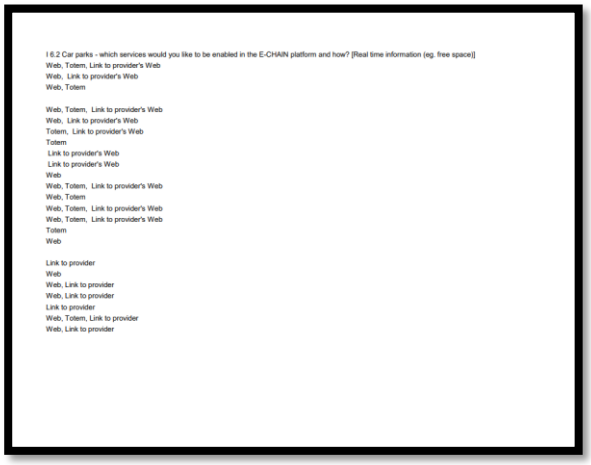
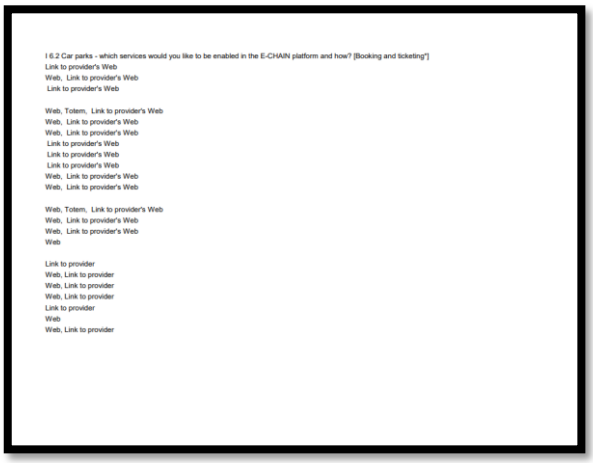
Web, Link to provider
Web
Web, Totem, Link to provider


I 6.2 Car parks - which services would you like to be enabled in the E-CHAIN platform and how? [Real time information (eg. free space)]
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web, Totem
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Totem, Link to provider's Web
Totem
Link to provider's Web
Link to provider's Web
Web
Web, Totem, Link to provider's Web
Web, Totem
Web, Totem, Link to provider's Web
Web, Totem, Link to provider's Web
Totem
Web
Link to provider
Web
Web, Link to provider
Web, Link to provider
Link to provider
Web, Totem, Link to provider
Web, Link to provider


I 6.2 Car parks - which services would you like to be enabled in the E-CHAIN platform and how? [Booking and ticketing"]
Link to provider's Web
Web, Link to provider's Web
Link to provider's Web
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web, Link to provider's Web
Link to provider's Web
Link to provider's Web
Link to provider's Web
Web, Link to provider's Web
Web, Link to provider's Web
Web, Totem, Link to provider's Web
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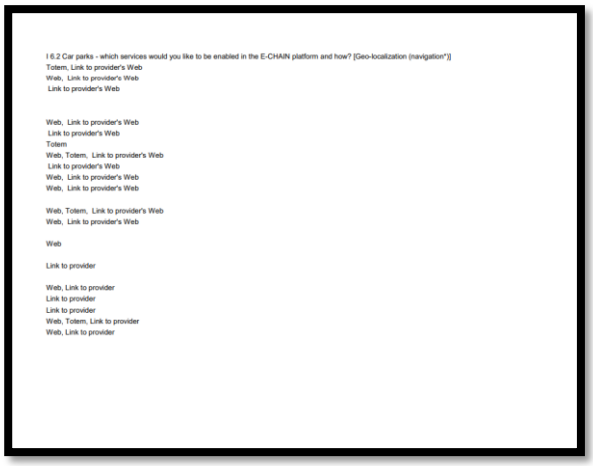
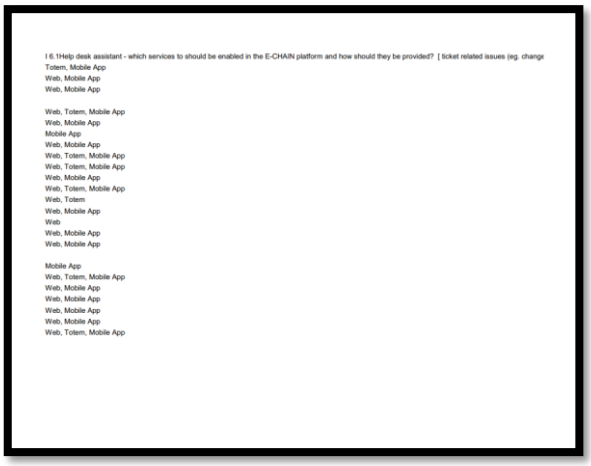
Web, Link to provider


I 6.2 Car parks - which services would you like to be enabled in the E-CHAIN platform and how? [Geo-localization (navigation*)]
Totem, Link to provider's Web
Web, Link to provider's Web
Link to provider's Web
Web, Link to provider's Web
Link to provider's Web
Totem
Web, Totem, Link to provider's Web
Link to provider's Web
Web, Link to provider's Web
Web, Link to provider's Web
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web
Link to provider
Web, Link to provider
Link to provider
Link to provider
Web, Totem, Link to provider
Web, Link to provider


I 6.1Help desk assistant - which services to should be enabled in the E-CHAIN platform and how should they be provided? [ ticket related issues (eg. change
Totem, Mobile App
Web, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App
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Web, Mobile App
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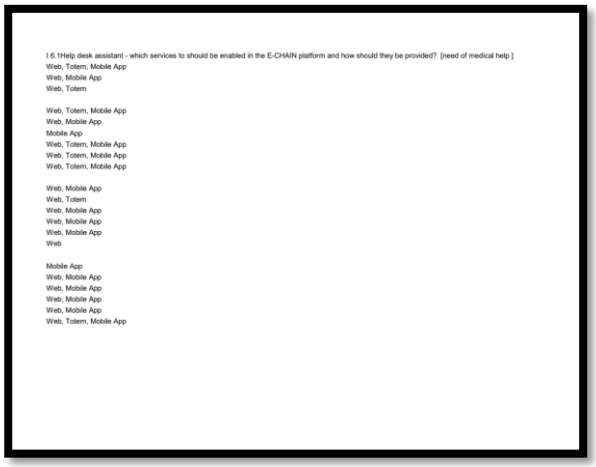
Web, Mobile App
Web, Totem, Mobile App


I 6.1Help desk assistant - which services to should be enabled in the E-CHAIN platform and how should they be provided? [need of medical help ]
Web, Totem, Mobile App
Web, Mobile App
Web, Totem
Web, Totem, Mobile App
Web, Mobile App
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem
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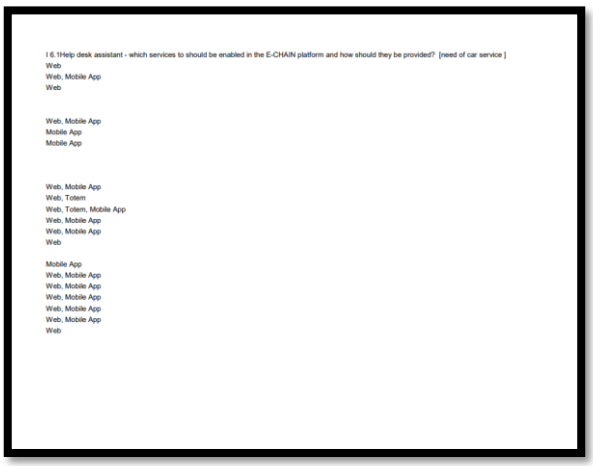
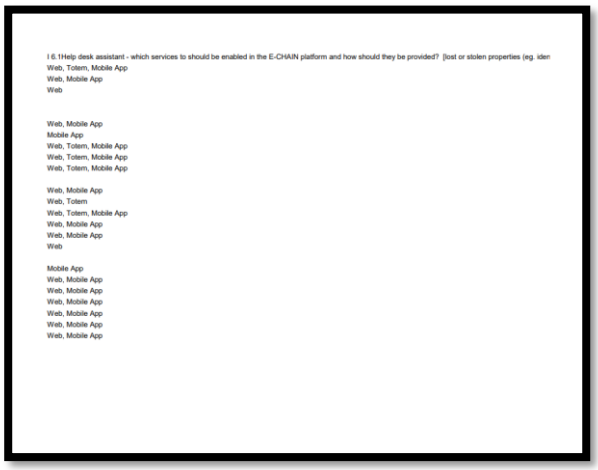
Web, Mobile App
Web, Totem, Mobile App


I 6.1Help desk assistant - which services to should be enabled in the E-CHAIN platform and how should they be provided? [need of car service ]
Web
Web, Mobile App
Web
Web, Mobile App
Mobile App
Mobile App
Web, Mobile App
Web, Totem
Web, Totem, Mobile App
Web, Mobile App
Web, Mobile App
Web
Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web


I 6.1Help desk assistant - which services to should be enabled in the E-CHAIN platform and how should they be provided? [lost or stolen properties (eg. iden
Web, Totem, Mobile App
Web, Mobile App
Web
Web, Mobile App
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem
Web, Totem, Mobile App
Web, Mobile App
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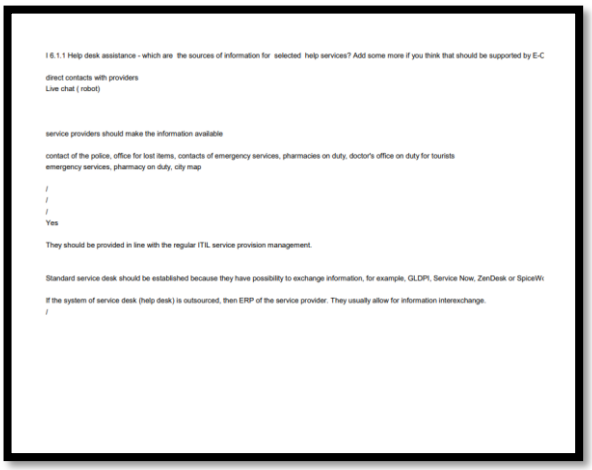
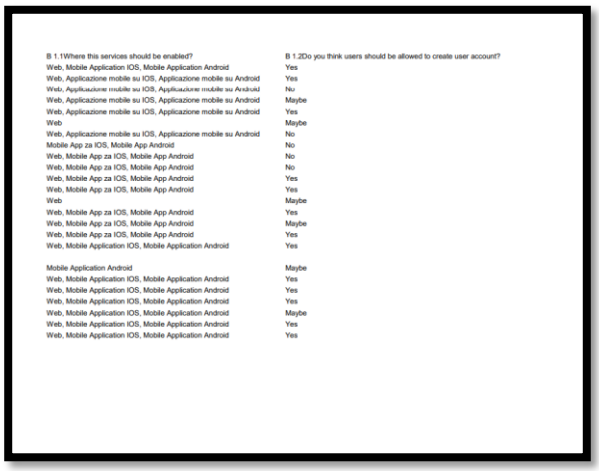
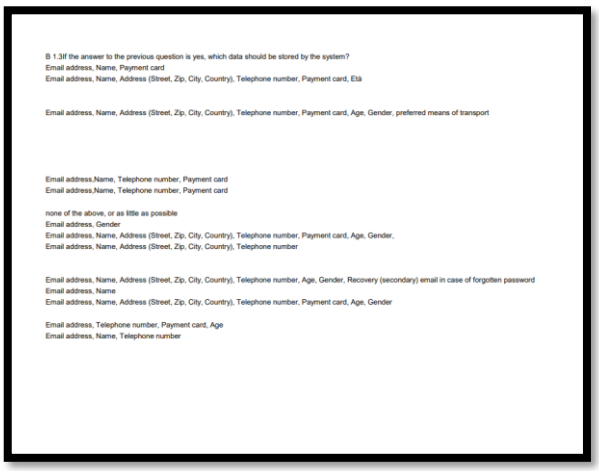
Web, Mobile App


I 6.1.1 Help desk assistance - which are the sources of information for selected help services? Add some more if you think that should be supported by E-C
direct contacts with providers
Live chat ( robot)
service providers should make the information available
contact of the police, office for lost items, contacts of emergency services, pharmacies on duty, doctor's office on duty for tourists
emergency services, pharmacy on duty, city map
/
/
/
Yes
They should be provided in line with the regular ITIL service provision management.
Standard service desk should be established because they have possibility to exchange information, for example, GLDPI, Service Now, ZenDesk or SpiceW
If the system of service desk (help desk) is outsourced, then ERP of the service provider. They usually allow for information interexchange.
/

## 4.1.3. BOOKING AND TICKETING



| B 1.1Where this services should be enabled? | B 1.2Do you think users should be allowed to create user account? |
|---|---|
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | Yes |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | No |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | Maybe |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | Yes |
| Web | Maybe |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | No |
| Mobile App za IOS, Mobile App Android | No |
| Web, Mobile App za IOS, Mobile App Android | No |
| Web, Mobile App za IOS, Mobile App Android | No |
| Web, Mobile App za IOS, Mobile App Android | Yes |
| Web, Mobile App za IOS, Mobile App Android | Yes |
| Web | Maybe |
| Web, Mobile App za IOS, Mobile App Android | Yes |
| Web, Mobile App za IOS, Mobile App Android | Maybe |
| Web, Mobile App za IOS, Mobile App Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Mobile Application Android | Maybe |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Maybe |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Yes |



B 1.3If the answer to the previous question is yes, which data should be stored by the system?
Email address, Name, Payment card
Email address, Name, Address (Street, Zip, City, Country), Telephone number, Payment card, Età

Email address, Name, Address (Street, Zip, City, Country), Telephone number, Payment card, Age, Gender, preferred means of transport

Email address,Name, Telephone number, Payment card
Email address,Name, Telephone number, Payment card

none of the above, or as little as possible
Email address, Gender
Email address, Name, Address (Street, Zip, City, Country), Telephone number, Payment card, Age, Gender,
Email address, Name, Address (Street, Zip, City, Country), Telephone number

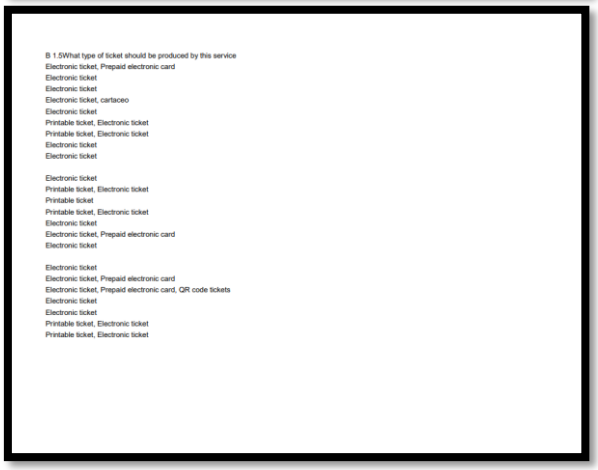
Email address, Name, Address (Street, Zip, City, Country), Telephone number, Age, Gender, Recovery (secondary) email in case of forgotten password
Email address, Name
Email address, Name, Address (Street, Zip, City, Country), Telephone number, Payment card, Age, Gender

Email address, Telephone number, Payment card, Age
Email address, Name, Telephone number

B 1.4Which payment options should be supported by the system?
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Credit card
Debit card, Credit card, Applicazione mobile di pagamento rapido (mobile payment system)
Debit card, Credit card, Addebito sul credito telefonico, Applicazione mobile di pagamento rapido (mobile payment system)
Debit card, Credit card, Applicazione mobile di pagamento rapido (mobile payment system)
Credit card
Debit card, Credit card
Credit card, Debit user's telecom account

Debit card, Credit card
Debit card, Credit card, Quick payment mobile application
Debit card, Credit card
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card

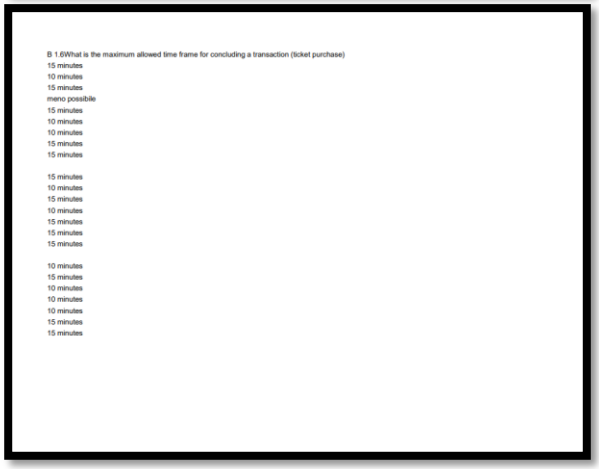
Debit card
Debit card, Credit card
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card
Credit card, Quick payment mobile application
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application



B 1.5What type of ticket should be produced by this service
Electronic ticket, Prepaid electronic card
Electronic ticket
Electronic ticket
Electronic ticket, cartaceo
Electronic ticket
Printable ticket, Electronic ticket
Printable ticket, Electronic ticket
Electronic ticket
Electronic ticket

Electronic ticket
Printable ticket, Electronic ticket
Printable ticket
Printable ticket, Electronic ticket
Electronic ticket
Electronic ticket, Prepaid electronic card
Electronic ticket

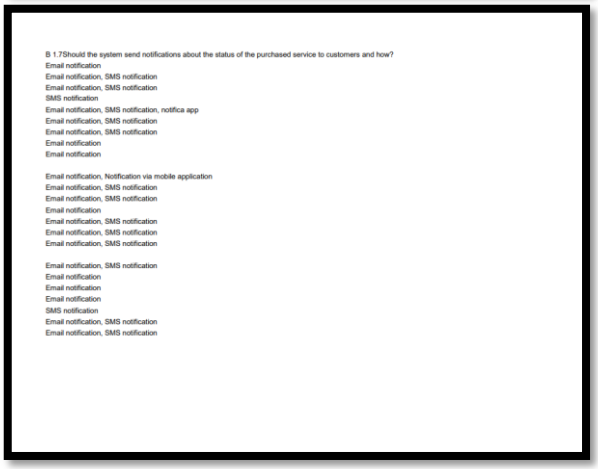
Electronic ticket
Electronic ticket, Prepaid electronic card
Electronic ticket, Prepaid electronic card, QR code tickets
Electronic ticket
Electronic ticket
Printable ticket, Electronic ticket
Printable ticket, Electronic ticket



B 1.6What is the maximum allowed time frame for concluding a transaction (ticket purchase)
15 minutes
10 minutes
15 minutes
meno possibile
15 minutes
10 minutes
10 minutes
15 minutes
15 minutes

15 minutes
10 minutes
15 minutes
10 minutes
15 minutes
15 minutes
15 minutes

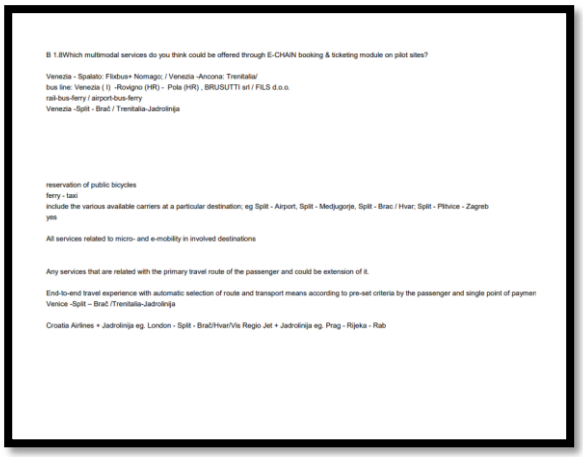
10 minutes
15 minutes
10 minutes
10 minutes
10 minutes
15 minutes
15 minutes



B 1.7Should the system send notifications about the status of the purchased service to customers and how?
Email notification
Email notification, SMS notification
Email notification, SMS notification
SMS notification
Email notification, SMS notification, notifica app
Email notification, SMS notification
Email notification, SMS notification
Email notification
Email notification

Email notification, Notification via mobile application
Email notification, SMS notification
Email notification, SMS notification
Email notification
Email notification, SMS notification
Email notification, SMS notification
Email notification, SMS notification

Email notification, SMS notification
Email notification
Email notification
Email notification
SMS notification
Email notification, SMS notification
Email notification, SMS notification



B 1.8Which multimodal services do you think could be offered through E-CHAIN booking & ticketing module on pilot sites?

Venezia - Spalato: Flixbus+ Nomago; / Venezia -Ancona: Trenitalia/
bus line: Venezia ( I) -Rovigno (HR) - Pola (HR) , BRIJUTTI srl / FILS d.o.o.
rail-bus-ferry / airport-bus-ferry
Venezia -Split - Brač / Trenitalia-Jadrolinija

reservation of public bicycles
ferry - taxi
include the various available carriers at a particular destination; eg Split - Airport, Split - Medjugorje, Split - Brac / Hvar; Split - Plitvice - Zagreb
yes

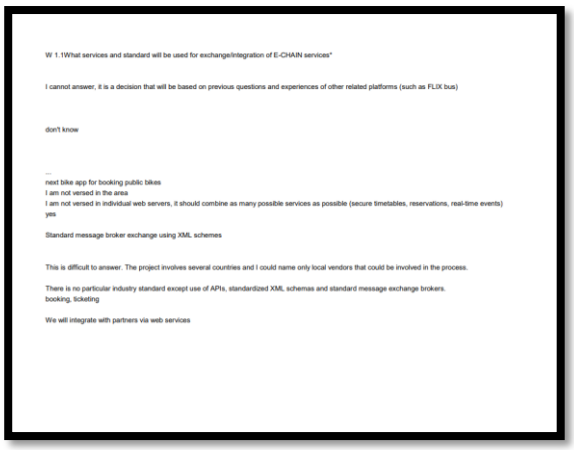
All services related to micro- and e-mobility in involved destinations

Any services that are related with the primary travel route of the passenger and could be extension of it.

End-to-end travel experience with automatic selection of route and transport means according to pre-set criteria by the passenger and single point of paymen
Venice -Split – Brač /Trenitalia-Jadrolinija

Croatia Airlines + Jadrolinija eg. London - Split - Brač/Hvar/Vis Regio Jet + Jadrolinija eg. Prag - Rijeka - Rab

## 4.1.4. WEB SERVICES



W 1.1What services and standard will be used for exchange/integration of E-CHAIN services"

I cannot answer, it is a decision that will be based on previous questions and experiences of other related platforms (such as FLIX bus)

don't know

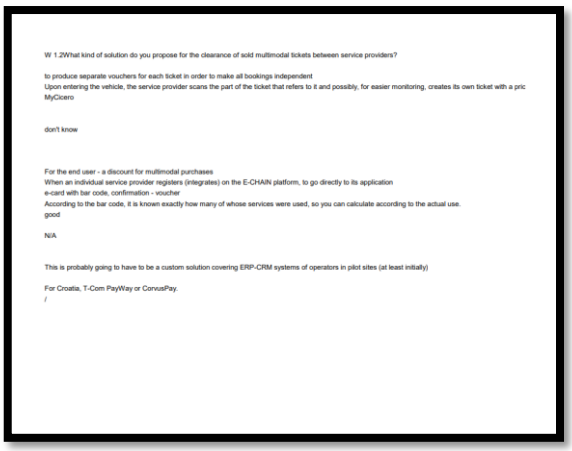
...
next bike app for booking public bikes
I am not versed in the area
I am not versed in individual web servers, it should combine as many possible services as possible (secure timetables, reservations, real-time events)
yes

Standard message broker exchange using XML schemes

This is difficult to answer. The project involves several countries and I could name only local vendors that could be involved in the process.

There is no particular industry standard except use of APIs, standardized XML schemas and standard message exchange brokers.
booking, ticketing

We will integrate with partners via web services



W 1.2What kind of solution do you propose for the clearance of sold multimodal tickets beteeen service providers?

to produce separate vouchers for each ticket in order to make all bookings independent
Upon entering the vehicle, the service provider scans the part of the ticket that refers to it and possibly, for easier monitoring, creates its own ticket with a pric
MyCicero

don't know

For the end user - a discount for multimodal purchases
When an individual service provider registers (integrates) on the E-CHAIN platform, to go directly to its application
e-card with bar code, confirmation - voucher
According to the bar code, it is known exactly how many of whose services were used, so you can calculate according to the actual use.
good

N/A

This is probably going to have to be a custom solution covering ERP-CRM systems of operators in pilot sites (at least initially)

For Croatia, T-Com PayWay or CorvusPay.
/

W 1.3What kind of solution do you propose for charging and allocating E-CHAIN service costs for e.g. multimodal tickets, parking tickets, event ticket?

Then for each provider receive monthly payment on the basis of the account statement of the sales net of fees
Percentage sales service (proposal 15%)

don't know

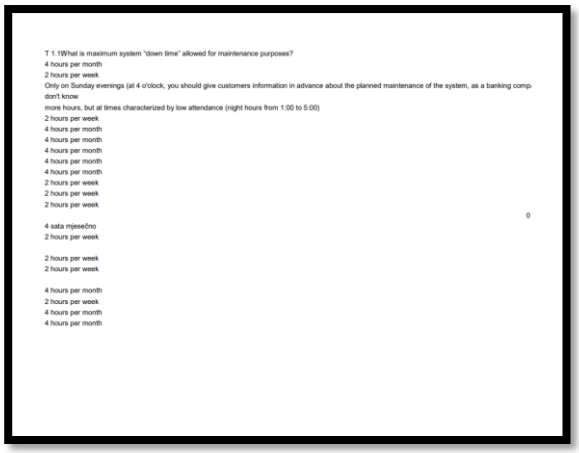
2% of the selling price
Price list / tariff integration, monthly share payment
each provider has its own price list of services, the solution should be developed by agreement between all participants (bidders within the platform)
There should be a possibility that each server can charge for multimodal tickets, and the billing goes according to actual usage. A calculation is proposed eve
As cheap as possible

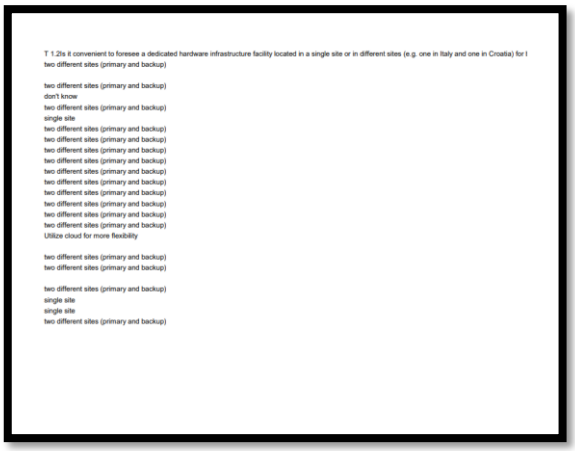
For the reasons of economical efficiency, it would be best that such a solution is operated by one stakeholder in the pilot sites, and a multiparty agreement i s

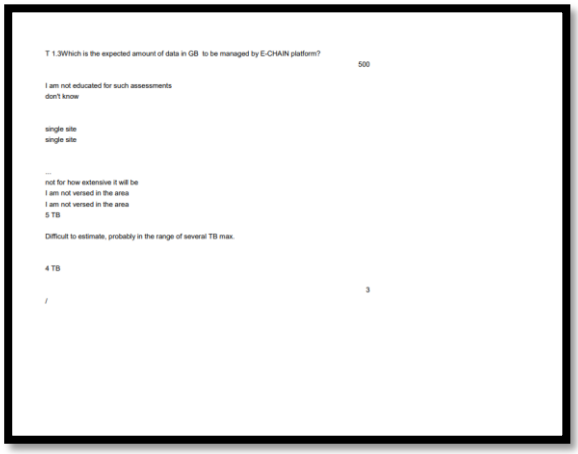
The same answer as in w1.2

Don't know of such a solution, never heard of it. Maybe it has to be developed according to custom functional specification.
/

## 4.2 TECHNICAL REQUIREMENTS



# 5. REQUIREMENT RESULTS

## 5.1 FUNCTIONAL REQUIREMENTS

### 5.1.1 E-CHAIN GENERAL FUNCTIONAL REQUIREMENTS

General functional requirements are the part of the interview which requires participants (stakeholders) to give their personal inputs on the regarding the most suitable modules for their own personal use, in which part of the process they would want to be included, what are the language requirements for the usage of E-CHAIN platform and its user and administrative interface.

First question required stakeholders to express their level of interest in the use of E-CHAIN platform modules. Main categories consist of:

1. Multimodal travel solutions (searching and booking)
2. Port multimodal infomobility
3. Data management
4. Touristic marketing

Graph representing this and the following answers accurately depicts even a multitude of chosen answers to give a clear overview of the stakeholder's needs.

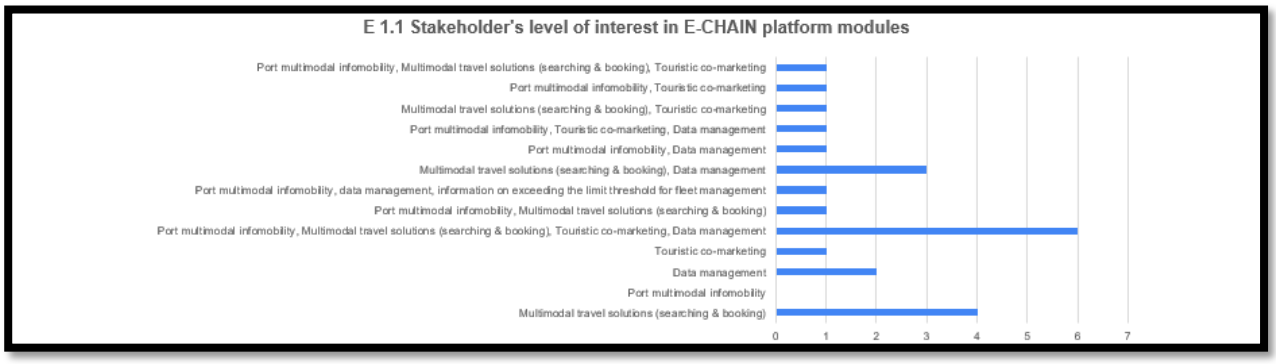



**Figure 4. Stakeholder's level of interest in E-CHAIN platform modules**

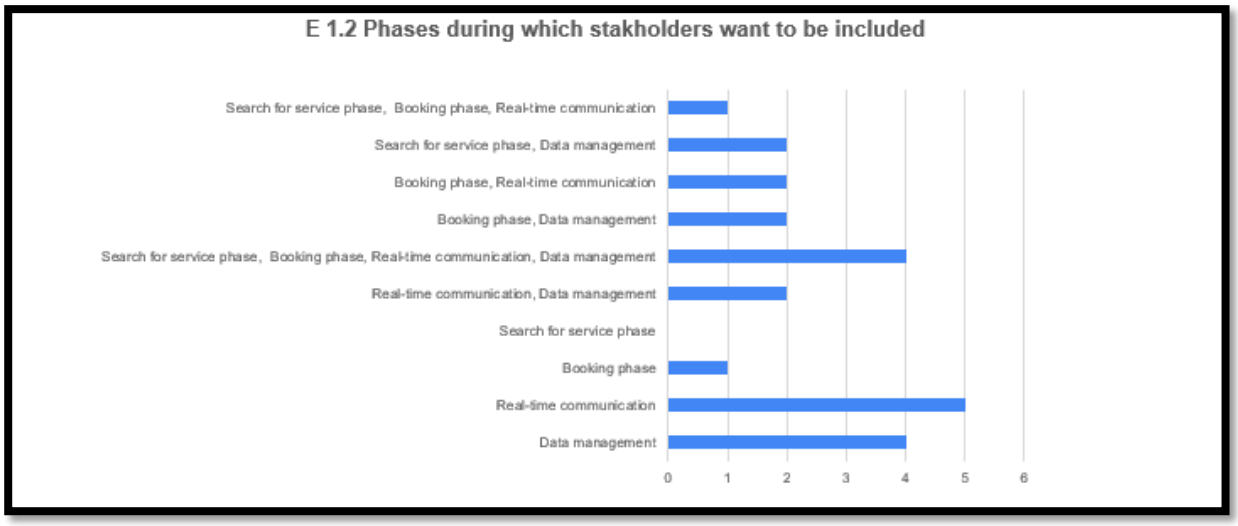



**Figure 5. Phases during which stakeholders want to be included**

Second question referred to the stakeholder's statement regarding the first question and whether they gave an affirmative answer to one (or more) of the modules, follow-up question requires stakeholder's input in which phase would they like to be included in on the E-CHAIN platform.

Following question requested feedback whether the English, Italian and Croatian language on E-CHAIN user interface will suffice. Stakeholders were pretty unanimous regarding the eventual need to incorporate German as a fourth language as the German tourists present roughly 30% of overall tourists that stayed overnight in Croatia (2020.) and about 23.7% in 2019. Next language that would have the potential to be implemented in the platform would have to be Spanish which is in second place.

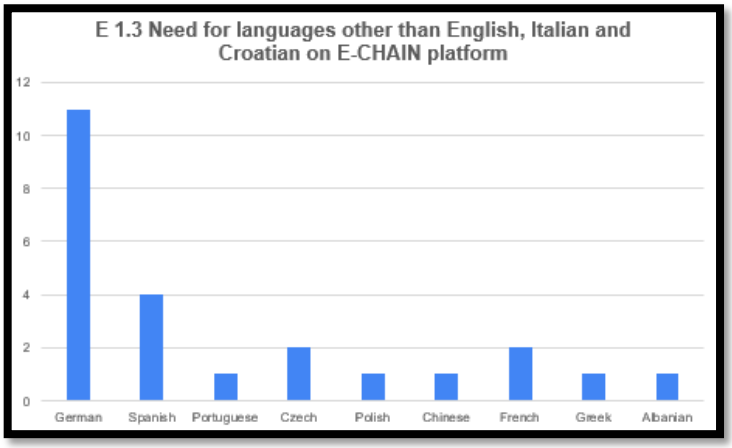



**Figure 6. User interface languages other than English, Italian and Croatian**

Final E-CHAIN general functional requirements question referred to the preferred language/languages for the administrative interface of the E-CHAIN platform. Results came out quite straightforward, either all three languages would be used, which potentially complicates things as everything done on the platform has to be tri-lateral or probably the simpler solution would have to be use of the most internationally accepted language.

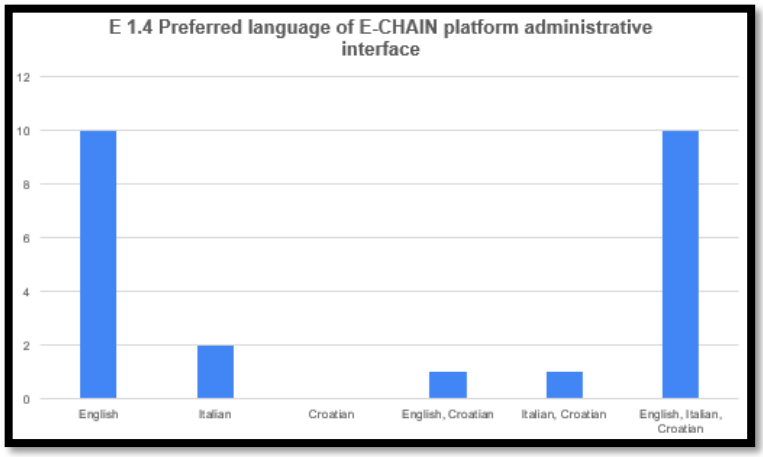



**Figure 7. Preferred language/s for the administrative interface of the E-CHAIN platform**

### 5.1.2 FUNCTIONAL REQUIREMENTS FOR INFO-MOBILITY

Second subchapter of the functional requirements is referring to the part about info-mobility, or to be more precise, information regarding any kind of mobility related services. Info-mobility subchapter consists of stakeholder's inputs regarding the contents (timetables, travel solutions, real-time events, points of interest and tourism services, car parking spaces availability and help desk assistant) that should be supported by the port multimodal info-mobility module and on which platform. Platforms that were suggested in the questionnaires encompass Web, Totem and Mobile App as a potential use case.

First part of the question referred to the displaying of the timetable content which represents a pretty significant part of passengers travelling activities as he often has to harmonize few events to make the most out of the trip. Answers were quite straightforward as the most stakeholders agreed that this kind of information has to be made available on all three platforms.

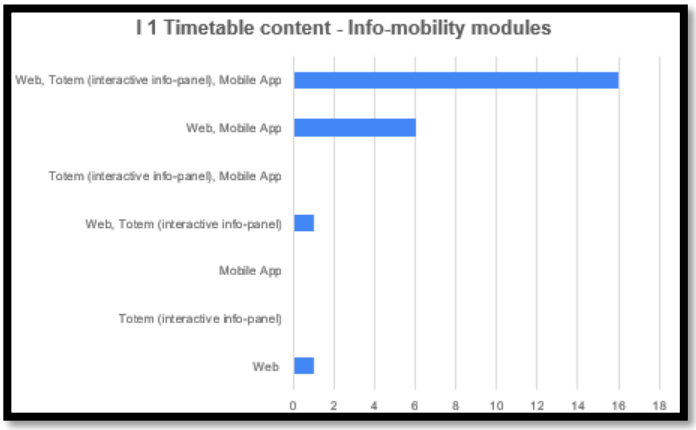



**Figure 8. Timetable content – Info-mobility modules**

While providing travel solutions content, answers remain pretty logical as the multitude of sources have to be enabled so the information reaches the maximum of targeted audience

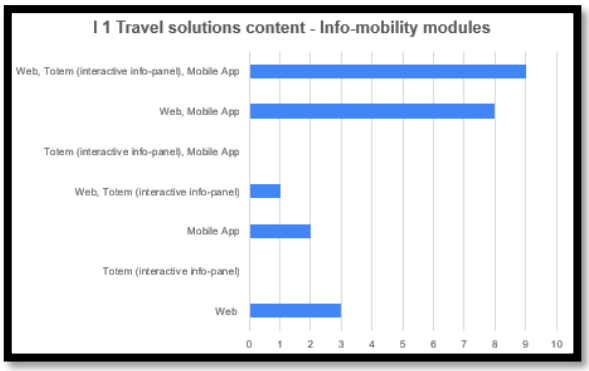



**Figure 9. Travel solutions content – Info-mobility modules**

Real-time events present time sensitive information which in some cases present deal making/breaking decisions, therefore any possible displaying platform should be enabled. As the most business today is done via online sources, big number of stakeholders think that enabling this kind of information on Mobile App could be beneficial.

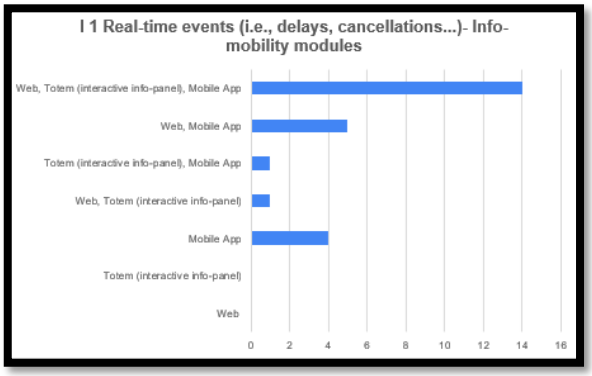



**Figure 10. Real-time events – Info-mobility modules**

Points of interest and similar sightseeing locations definitely would have to prevail on “to-go” devices. as the totems are fixed structures. On the other hand, they could present a modernized way of displaying information directly on the sites. Interactive aspect brings the new level of information providing to visitors.

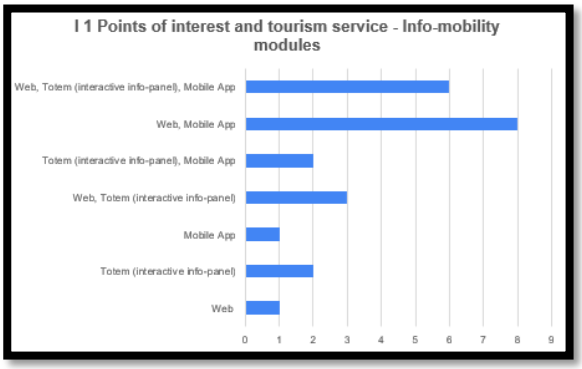



**Figure 11. Points of interest and tourism service – Info-mobility modules**

When talking about car parking spaces and their (un)availability, especially during the peak of the tourist season, according to stakeholders and their views on it, mobile app would come in most handy. Mobile devices and the availability of car parking spaces can definitely facilitate the tourist's accommodation period.

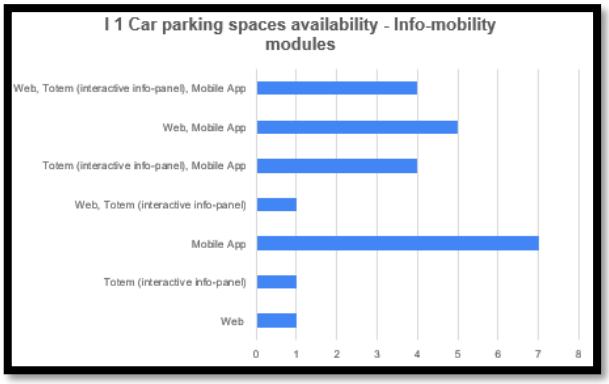



**Figure 12. Car parking spaces availability – Info-mobility modules**

Help desk assistant would definitely show its usefulness on web and mobile apps as the help usually is needed somewhere on the go and where decisions have to be made quicker.

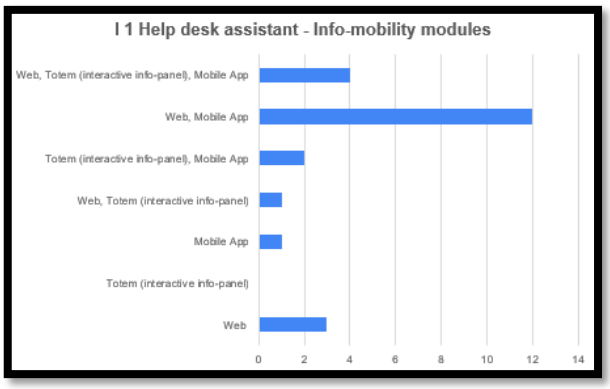



**Figure 13. Help desk assistant – Info-mobility modules**

**Recommendations**

Apart from the predefined answers, stakeholders were given an option to suggest their own ideas regarding the content that should potentially be a part of E-CHAIN platform:

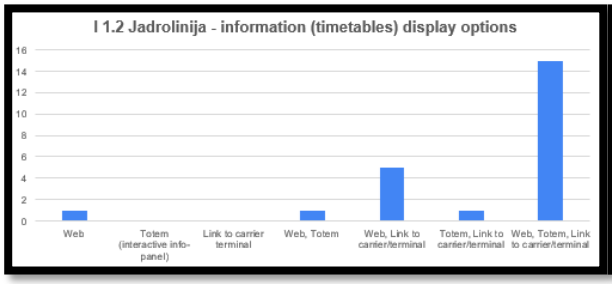
- quantity of emissions produced for one shift
- information about changes to the service that often occurs e.g., extended service until ... etc.
- transport on request, electric chargers for vehicles
- cultural and sporting events and gastronomy
- basic information about each city, the nearest next city
- air traffic
- links to traffic situation on roads / national auto club
- nautical maritime situation in the vicinity of the passenger port
- continuations of travel that are possible by rail (partial timetable)

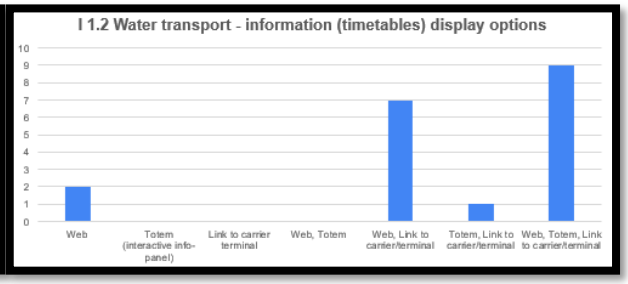
Following question required stakeholders to check the boxes which apply regarding the timetables and their means of displaying that information. The “check” table looked like the table below.

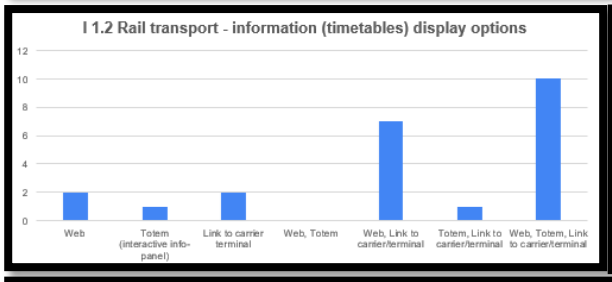
| | Web | Totem | Link to carrier/terminal |
|---|---|---|---|
| Jadrolinija | ☐ | ☐ | ☐ |
| Water transport | ☐ | ☐ | ☐ |
| Rail transport | ☐ | ☐ | ☐ |
| Bus transport | ☐ | ☐ | ☐ |
| Air transport | ☐ | ☐ | ☐ |

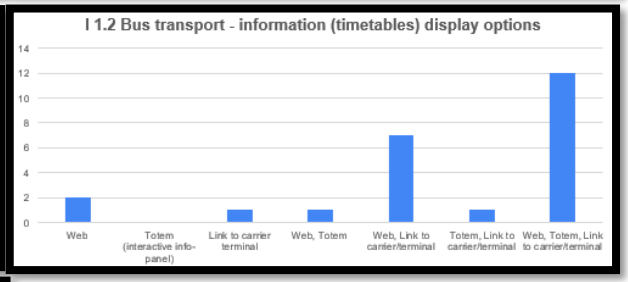
**Table 1. Screenshot of the table from the questionnaire**

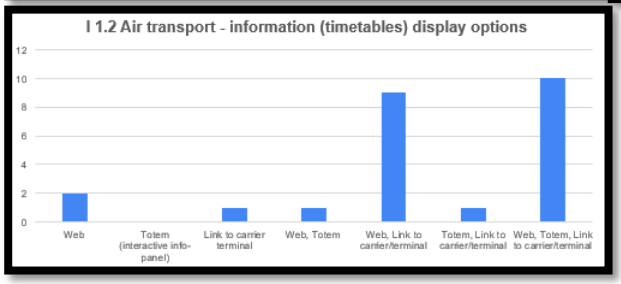
Results coming from the table displayed above were pretty much expected. In all the categories the most represented answer was all three mediums of display together. Second place went in all categories to the pair Web, Link to carrier and terminal just in different ratios. The answers according to the categories are listed below.



**I 1.2.1 Please provide additional information on selected timetables (e.g., Train terminal – Ancona), source of information and add more timetables if appropriate:**

- Krk Airport - Jadrolinija, Rijeka bus station, Rijeka rail station
- Venice train terminal - connections via IT with Venice Bus Station, Venice Airport, Taxi and shared Travel, …
- links to third destinations (e.g., Split - Medjugorje, Split - Plitvice Lakes)
- air traffic - Rijeka
- relevant timetable for the first "hop" of the travel involving E-CHAIN pilot sites
- most traffic operators including rail, water, road and air can share their timetable using standard API and message exchange through message broker (XML data schema exchange

**I.3.1 Travel solutions – Expectations from the Travel Solutions Module affecting resource optimization?**

- mobility, CO2 reduction, timetables optimisation
- better programming can be made on the means used on the basis of the most requested times
- resource optimization is expected to connect carriers and capacities through partnership agreements, better solutions for filling capacities will bring more money for investments in better (electric) vehicles, etc.
- give greater travel flexibility and the possibility for the traveller to choose alternative means and routes
- better use of information
- faster arrival to the destination and selection of the optimal route
- better recognition of when to need to strengthen timetables, introduce other new solutions to reduce congestion
- less crowds, more mobility, passengers will make decisions based on better information, will ask for less information by other routes
- travel time reduction, cost optimization and thus the price of services, increasing the reliability and quality of travel
- they should decrease time spent to organize travel. Also, additional discount could be offered if a bundle of tickets for various forms of transport is purchased.
- if properly executed it could be mildly attractive for the passenger using multimodal passenger means and could slightly increase use of means of maritime transport

- if the question is related to railway passenger operators, I would say in a negligible way, because the system is not a part of internal IT systems of operators, there is no feedback to the operators' systems.
- to provide more information on one service to the passengers.

**I 1.3.2 Travel solutions - data which is needed to optimize resources and who owns it?**

- Jadrolinija, Arriva timetables, Rail timetables
- traffic analysis of the route, analysis of traffic loads, alternative modes of transport
- loads of traffic and road or service interruptions
- transport service providers and the Harbour Master's Office
- Google and direct input of additional route information
- number of passengers, number of vehicles, number of flights, road loads; data are owned by individual operators / service servers, HAK (Croatian Auto House)
- data on the state of congestion in certain directions; carrier association
- alternative modes of transport on the route, traffic routes, connection hoops (bus - railway)
- prices, shortest route in terms of distance covered, optimal route, cheapest route, scenic route with POI, one or two alternative routes for each selection
- probably a detailed analysis of timetables should be done using operational research tools and implement it as a part of timetable tool on totems, web and mobile application in order to enable usage of different search criteria for the end user and according to different search requirements
- I would say timetables, but also sensitive financial data that most operators probably will not share. For example, some variable prices depend on volume of passengers,
- name of the route
- name of the route - source of information
- every participant in the project has its own source of data.

According to the questionnaire, real-time information module gained some traction among the stakeholder because apart from the checking the part with predefined answers on which kind of information would they want to be informed on, answers were written in a free form stating lots of possible events that should be definitely duly and timely informed on. Stakeholders were also kindly asked to state the sources for their free-form written answers.

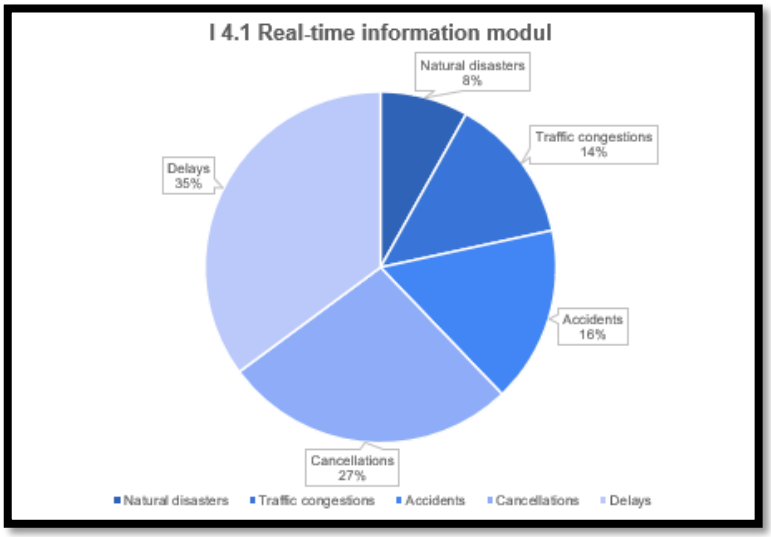



**Figure 14. Information categories inside real-time information module**

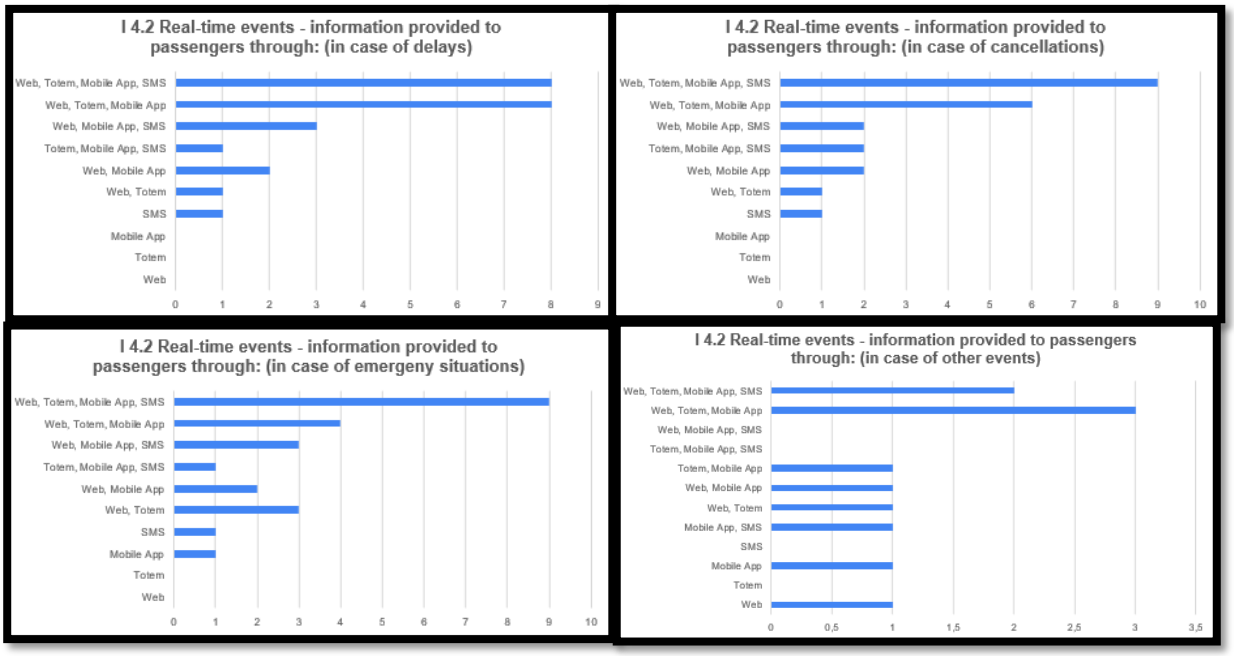
Some of the answers encompassed:

- closing of the snow passes in the lines for the Dolomites provided by the contacts on site;
- delays in embarkation / disembarkation due to fog that does not allow ships to dock, information provided by the port authority.
- delays, cancellations and possible solutions (such as plane that gives in flight situation for connections) - Public sources
- delays, traffic congestion information and offers of alternative routes - data sources are individual carriers
- user logins, information from the system admin - connection to the automatic systems of the transport service provider
- road traffic congestion, airport congestion, delays, cancellations, unforeseen events, other
- emergency data, cancellations and delays but only those that are relevant for the travel itinerary of the particular passenger
- natural disaster and accidents, if covid situation will persist, fresh information about covid requirements, situation and testing in areas where the passengers is travelling to (or through).

Provided with the table below, stakeholders were questioned to state their opinions regarding the information providing in the real-time events that are possibly occurring. Stakeholders needed to state their opinions regarding the categories of delays, cancellations, emergency situations and other events that are fairly time sensitive and the ways they would like for passengers to be informed on them.

| | Web | Totem | Mobile App | SMS |
|---|---|---|---|---|
| Delays | ☐ | ☐ | ☐ | ☐ |
| Cancellations | ☐ | ☐ | ☐ | ☐ |
| Emergency situations (e.g., natural disasters, severe weather conditions, accidents…) | ☐ | ☐ | ☐ | ☐ |
| Other | ☐ | ☐ | ☐ | ☐ |

**Table 2. Real-time events – ways of information providing towards passengers**




Answers provided on the “check all that apply” table were more than obvious representing the will of stakeholders that the information regarding any type of real-time events needed to be displayed across the multitude of information providing platforms. In reality, when sudden events occur, quantity beats quality by miles purely because of the reach towards general public and whom it may concern the most.

**I 4.3 Real time events - What type of additional information should the system provide to passengers in the case of an event (e.g., a delay – nearby points of interest) and which are sources of information?**

- estimate of the delay in reaching the chosen location through integration with *waze* or google maps; the widest possible geolocation of experiences that start near the user's localization point
- it is interesting to have options (especially for tourists who do not know the destination)
- replacement services, possible overnight refreshment points
- alternative transport solutions
- tourist board offices and info points
- nearby places of interest as information to have at the Tourist Board of Split, but categorized data is needed, e.g., sports, theatres, gastronomy - Split Tourist Board, Tourist Board, Croatian Tourist Board
- Tourist board - information on attractions in the area where the traveller is located, on restaurants
- information on how to make good use of waiting time - for example, to be able to log in to the platform and watch a film about the city in which they are located, about nearby places, about the destination in general, current events in culture, sports
- only information that is relevant for the passenger, or could be relevant in a general scenario (for example, pandemic). Sources of information should be services like emergency 112, and other relevant national sources.
- only those POI for whose it is realistic that they could be visited in such a limited time. Also, possibility of overnight lodging in case that delay is overnight; links to local restaurants and events.
- information about next departure, costs, stops and all relevat info. Sources: web, Mobile App
- especially delay in those transport means that lead to the pilot port (or other port of interest).
- points of interest
- cancellation policy, alternative transportation

**"I 4.4 What kind of real-time information from customers you need and how do you get it?"**

- estimated delay
- this can be solved as a package with IT solutions (ability to modify and monitor service situations)
- as much data as possible
- no information needed except maybe for basic statistics purpose
- for us by users are not relevant real-time dana
- communication by email (pre-ordering) or telephone and mobile application; delay information
- our service only allows you to book a ticket per day, and not according to the exact time frame so that the passenger does not have to worry in case of flight delay because another bus is available to him later
- if the passenger is late for the next "leg" of the travel, in that case, information could be forwarded (passed on) to the next stakeholders in line
- geolocation information, in case that the customer allows it. Advantages of surrendering geographical coordinates should be communicated in front to the passengers and data processed in line with the GDPR.
- position could be beneficial, if the passenger would allow it.
- e-mail

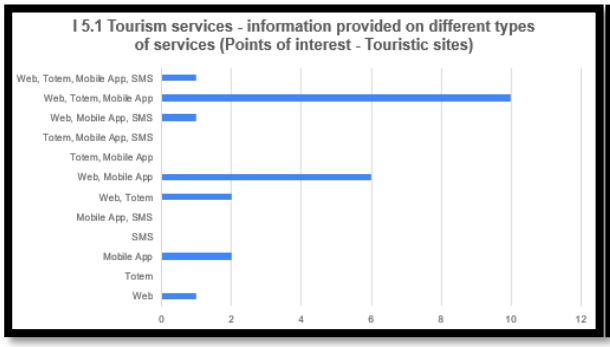
Tourism plays an important role for nearly all WTO members, especially in terms of its contribution to employment, GDP, and the generation of foreign exchange. Tourism-related services are typically labour-intensive, with numerous links to other major segments of the economy, such as transport, cultural and creative services, or financial and insurance services. Tourism and travel-related services include services provided by hotels and restaurants (including catering), travel agencies and tour operator services, tourist guide services and other related services.

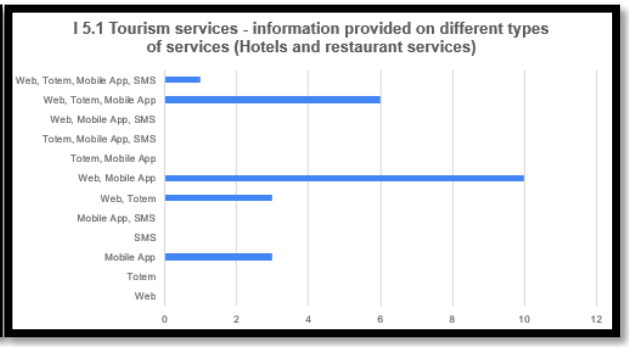
A crucial aspect of trade in tourism services is the cross-border movement of consumers. This permits a variety of workers, including those in remote areas, to become services exporters — for instance, by guiding tourists, performing in local events, or working in tourist accommodation. While digitalisation offers great potential for many aspects of tourism services, the sector continues to depend highly on the cross-border movement of both customers and employees, and remains strongly linked to transport services.

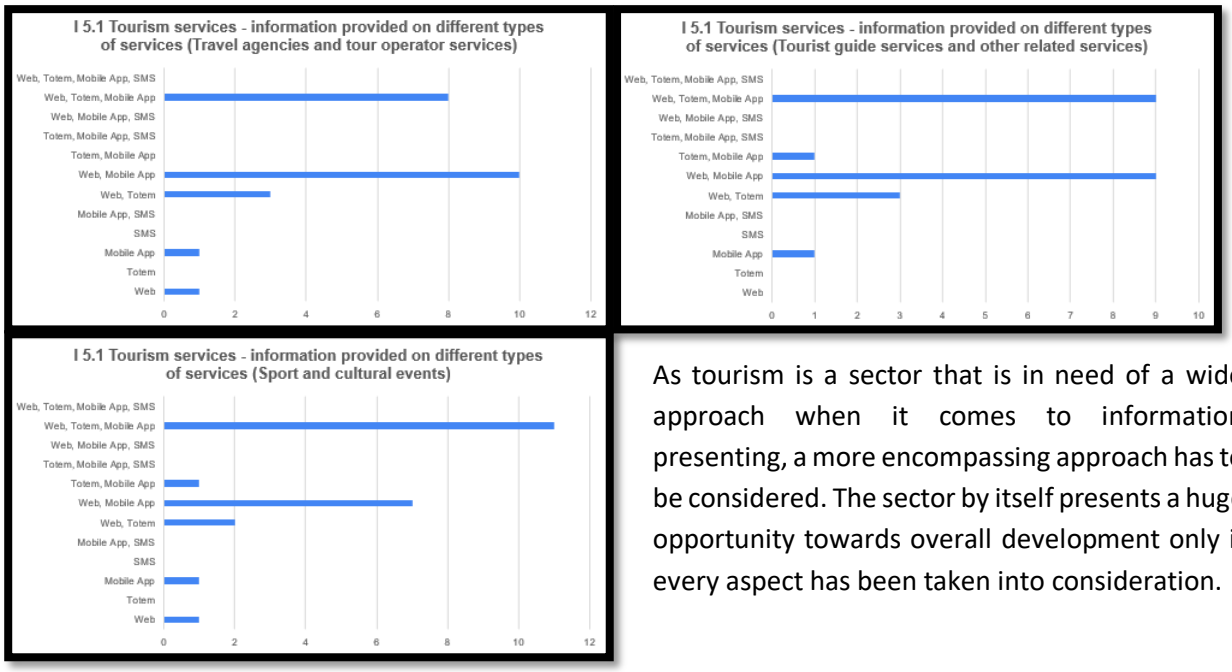
Attached table below was presented to stakeholders during the filling out of the questionnaire. Table consists of tourism related categories (POI, HoReCa services, Travel agencies and tour operators, touristic guiding services, sport and cultural events) and ways information should be provided towards end users

| | Web | Totem | Mobile App | SMS notification |
|---|---|---|---|---|
| POI – Touristic sites | ☐ | ☐ | ☐ | ☐ |
| Hotels and restaurant services | ☐ | ☐ | ☐ | ☐ |
| Travel agencies and tour operator services | ☐ | ☐ | ☐ | ☐ |
| Tourist guide services and other related services | ☐ | ☐ | ☐ | ☐ |
| Sport and cultural events | ☐ | ☐ | ☐ | ☐ |

**Table 3. Tourism services – information providing mediums**






As tourism is a sector that is in need of a wide approach when it comes to information presenting, a more encompassing approach has to be considered. The sector by itself presents a huge opportunity towards overall development only if every aspect has been taken into consideration.

**I 1.5.1 Tourism services - please specify the sources of information for type of services selected in previous question and add more types that you think should be supported by the E-CHAIN platform.**

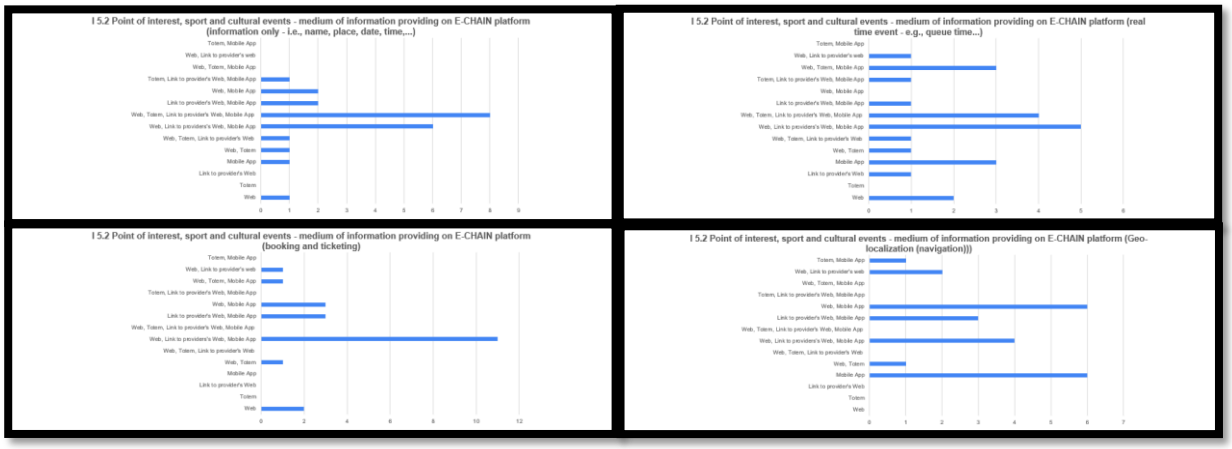
- integration with portals such as Get Your Guide, Musement, Tiqets could contain a greater tourist offer
- integrating google maps or other car navigation systems and through them offer the specification of points of interest based on user needs
- links with other platforms dedicated to the tourism activities of the Region or the territory
- the suppliers of the different services (e.g., event organizers, municipality, etc.)
- transport on request, e bottling plants, e-scooters
- Split Tourist Bord
- the Tourist Board of the City of Split, various associations of hoteliers, caterers, other service providers, HGK
- Split Tourist Board, associations of craftsmen (e.g., carriers, caterers)
- not so much by the Tourist Board, more by various local specialized providers and associations (associations in tourism, catering, culture, carriers, etc.)
- primarily national tourist associations, if they are not available, then API exchange with CRM of the major regional tourist agencies.

- such data should be obtained by real time exchange with the local tourist association or using standardized exchange with the interested tourist agencies of larger influence in the area.
- Croatian Board, Croatian Chamber of Economy, Ministry web pages, other
- only through exchange via APIs from tourist agencies and operators. This is the only way to ensure up to date information. For sports and cultural events, probably, it would have to be manually entered as automatic exchange would not be possible, there is no centralized repository of such events.
- tourist boards
- Croatian National Board

A point of interest or simply as POI represents a common expression used for pinpointing or indicating a specific location or an attraction that might be of interest to visitors. Coupled with sport and cultural events, this category was intended for stakeholders to express their opinions or maybe concerns regarding the information providing towards end users (passengers) on what would their preferred medium of accessing information be. Categories encompassed general information, real-time events, booking and ticketing as well as the geo-localization aspect of the events. Underneath this text, table from the questionnaire is attached as a way of representing how was this aspect presented to stakeholders.

| | Web | Totem | Link to provider's Web | Mobile application |
|---|---|---|---|---|
| Information only (e.g., name, place, date, time…) | ☐ | ☐ | ☐ | ☐ |
| Real-time events (e.g., queue time) | ☐ | ☐ | ☐ | ☐ |
| Booking and ticketing | ☐ | ☐ | ☐ | ☐ |
| Geo-localization (navigation) | ☐ | ☐ | ☐ | ☐ |

**Table 4. POI, sport and cultural events and mediums of information sharing**




Similar to previous answers, the most represented answer consisted of applying information sharing across all the platforms available as it is the easiest way to reach the biggest number of passengers and visitors in general. Distinct pattern was noticed, when some kind of navigation or geo-localization is needed, mobile apps are far ahead as they are a platform which everyone can access in any point of time, and if it is coupled with real time updates and regular maintenance of the systems, can serve as an overall most practical medium for accessing information. Totem, as a most visible and noticeable platform serves its purpose greatly, but its static nature presents its biggest deficiency.

A parking lot or car park, also known as a car lot, is a cleared area that is intended for parking vehicles. Usually, the term refers to a dedicated area that has been provided with a durable or semi-durable surface. It represents a dedicated area, where passenger can leave their vehicles in according to country's regulations without worrying that they left them on someone else's property. A certain fee is always charged as the commodity of having your vehicle in the vicinity present a certain luxury.

**"I 6.1 Car parks - specify parking services and what are the sources of information "**

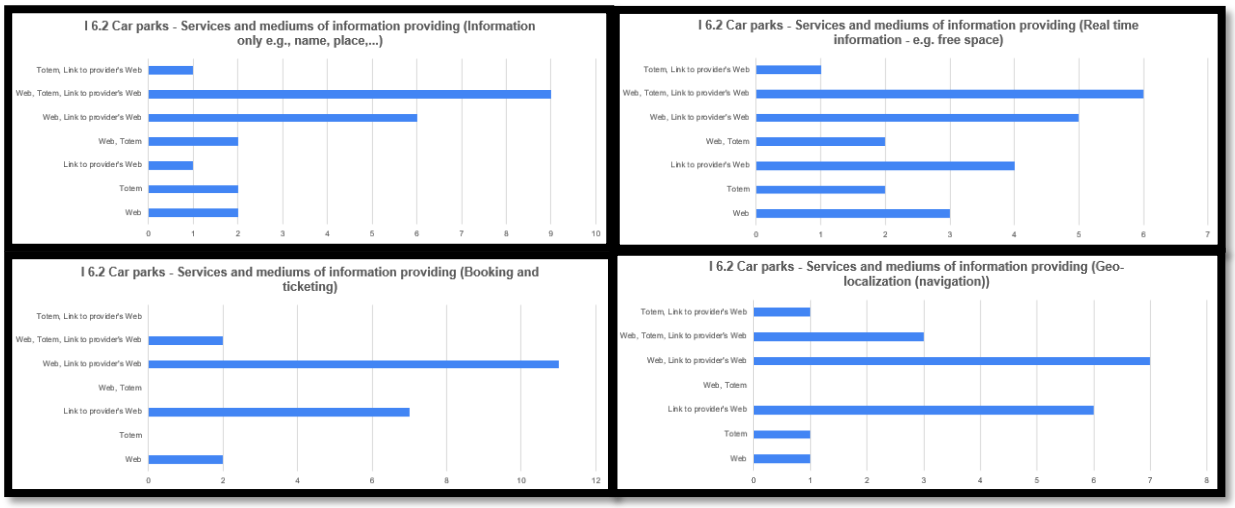
- Rijeka - Rijeka traffic, Rijeka plus
- parking space reservation with possible integration to public transport if not equipped with a shuttle service included. It is necessary to communicate the date of entry and exit
- number of free spaces, price, maximum parking duration, options for other parking spaces, etc.
- places, availability of stalls, distance from the port area
- distance - availability - cost
- Split car parks
- free spaces, all parking lots
- parking lots - open, street, public garages; source of information: website, mobile platform
- information on the number of free parking spaces at certain locations - on billboards
- all information about parking options is very important and should be easily accessible
- free spaces, all parking lots
- parking location, availability, pricing and type of parking (garage, open space behind the ramp, street parking). Guarded or not. API exchange with the parking service provider.
- automatic exchange with the billing parking system, they usually allow such exchange. It would be important to share data about type of parking and availability of free places. Also, working hours if they are not 0-24h.
- parking type (behind the ramp, garage parking, parking in the street), free parking and paid parking, payment possibilities (m-parking, ticket, credit card virtual and physical), parking availability (free places), parking prices. Sources should be API exchange with parking providers if possible, or manual entering of the price list, if not.

Parking lots present a certain relief as they almost completely assure passengers that their vehicle is safely stored and is awaiting them to finish a certain part of their journey. Services and mediums across which information should be accessible were a topic of following question inside the questionnaire presented to stakeholders. Table below illustrates what were stakeholders presented with to state their opinions.

| | Web | Totem | Link to provider's Web |
|---|---|---|---|
| Information only (e.g., name, place…) | ☐ | ☐ | ☐ |
| Real-time events (e.g., queue time) | ☐ | ☐ | ☐ |
| Booking and ticketing | ☐ | ☐ | ☐ |
| Geo-localization (navigation) | ☐ | ☐ | ☐ |

**Table 5. Car parks – services and mediums of information providing**

Web was the least favoured medium as it is not a practical way of coping with such a time-sensitive information which is being altered almost every minute. Link to parking provider's web page and a totem present viable options as they can assure and secure many concerns to whom it may matter the most. Official page from the parking provider signifies that information is presumably and most likely up-to-date and can be taken into consideration when planning occurs. Totems are an info-display that can easily project current alterations that are happening inside of the parking lot which can in turn significantly facilitate the whole process to the passengers. In the last paragraph, totem's statical nature presented itself as a disadvantage, but as the parking lot is also a static facility, totem's abilities come in handy. Categories inside this question encompassed basic information regarding parking facility, availability of parking spaces, booking and ticketing services as well as the localization properties.

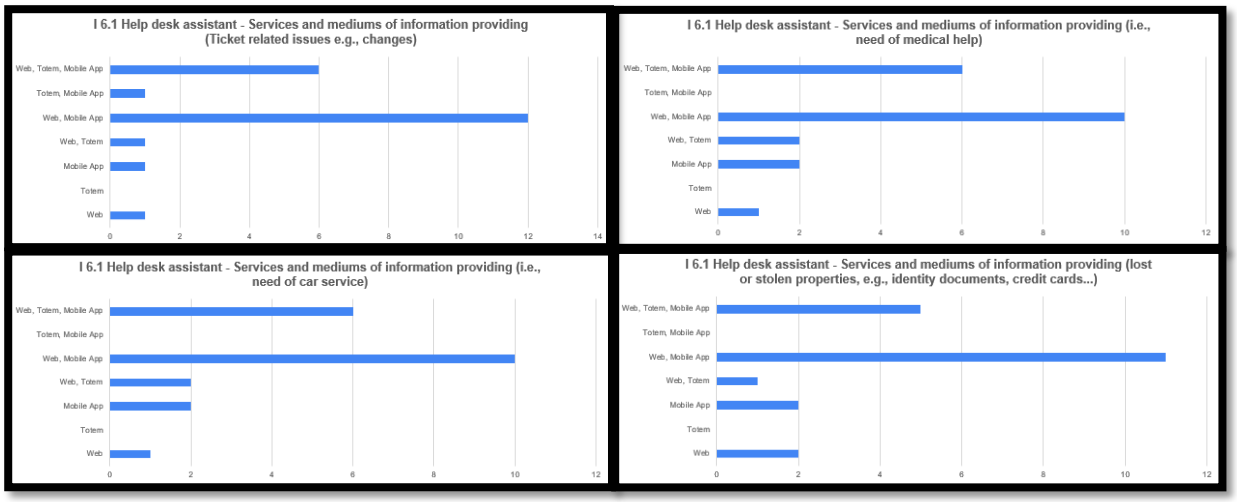


A help desk is a resource intended to provide the customer or end user with information and support related to a company's or institution's products and services. The purpose of a help desk is usually to troubleshoot problems or provide guidance about products such as computers, electronic equipment, food, apparel, or software. Corporations usually provide help desk support to their customers through various channels such as toll-free numbers, websites, instant messaging, or email.

| | Web | Totem | Mobile App |
|---|---|---|---|
| **Ticket related issues (e.g., changes)** | ☐ | ☐ | ☐ |
| **Need of medical help** | ☐ | ☐ | ☐ |
| **Need of car service** | ☐ | ☐ | ☐ |
| **Lost or stolen properties (e.g., identity documents, credit cards…)** | ☐ | ☐ | ☐ |

**Table 6. Help desk assistant – examples of services and mediums of information providing**

A good help desk improves customer satisfaction if it is actively responsive, consistently assists users, and goes the extra mile in service delivery of technical support. This provides support to the company's or platforms objectives and facilitates the growth of its business by increasing the number of returning customers. Above this text, a table from the questionnaire is inserted in order to provide an overview of what would help desk most likely refer to and what would be the preferrable mediums of displaying information. Results clearly indicate that most useful way of providing help desk assistance would be through web medium as well as through dedicated mobile application. Below the aggregated and listed responses from stakeholders, there are suggestions from the stakeholders on use cases other than prelisted/offered answers.



**I 6.1.1 Help desk assistance - which are the sources of information for selected help services? Add some more if you think that should be supported by E-CHAIN platform.**

- direct contacts with providers
- live chat (robot)
- service providers should make the information available
- contact of the police, office for lost items, contacts of emergency services, pharmacies on duty, doctor's office on duty for tourists
- emergency services, pharmacy on duty, city map
- they should be provided in line with the regular ITIL service provision management.
- standard service desk should be established because they have possibility to exchange information, for example, GLDPI, Service Now, ZenDesk or SpiceWorks
- if the system of service desk (help desk) is outsourced, then ERP of the service provider. They usually allow for information interexchange.

### 5.1.3. BOOKING & TICKETING

A booking is the arrangement that you make when you book something such as a hotel room, a table at a restaurant, a theatre seat, or a place on public transport, while the ticketing is the production or selling of tickets. When encountering these two terms, it is likely that the matter is about reserving something in circumstances where arrangeability is of a crucial meaning. Listed below are aggregated display of figures which are direct results from the questionnaire regarding the functionality requirements of E-CHAIN platform.

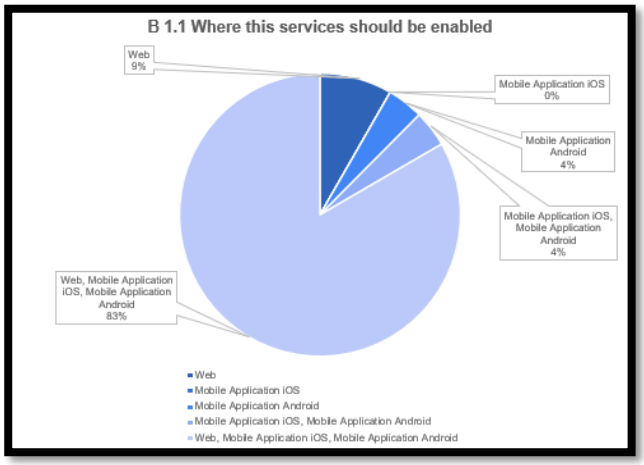



**Figure 15. Enabling of services**

The most represented answer fetched all of the offered answers as the best way to ensure functionality is to enable a wide spectrum as accessibility across the all-accessible platforms.

In regards to account creation on the platform, half of the stakeholders declared that they are in line with the option that users can create their own accounts, while the other half of the stakeholders were fairly equally divided between “no” and “maybe” options.

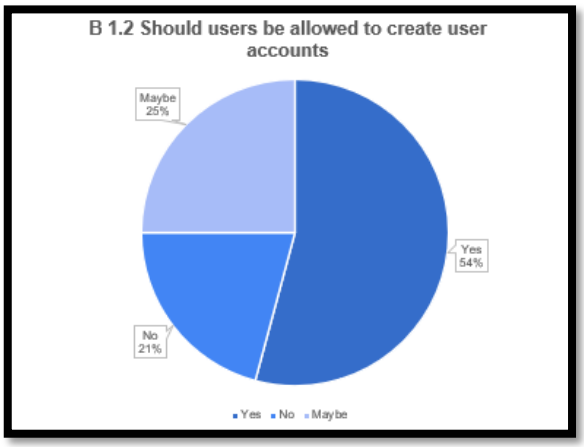



**Figure 16. User account creation**

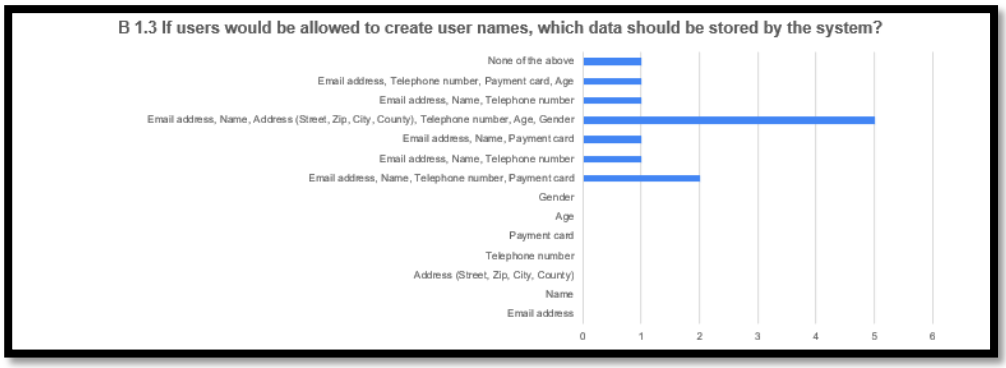



**Figure 17. Data storage options**

Data storage refers to the use of recording media to retain data using computers or other devices. The most prevalent forms of data storage are file storage, block storage, and object storage, with each being ideal for different purposes.

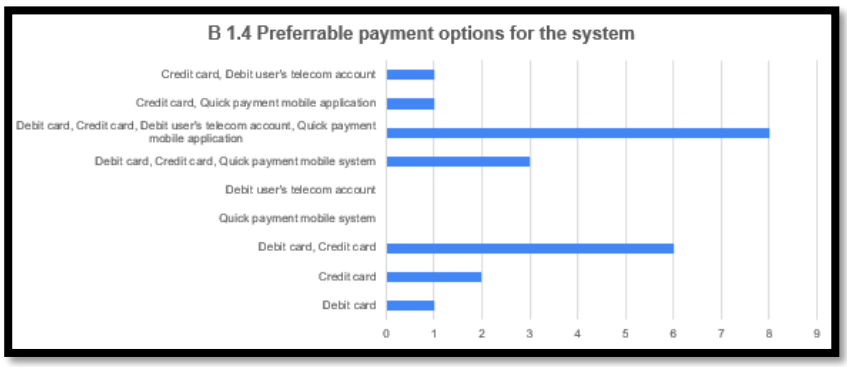



**Figure 18. Preferrable payment options for the system**

Once again, the option of having a multitude of accessible options showed that it beats individual options when it comes to paying for any kind of services.

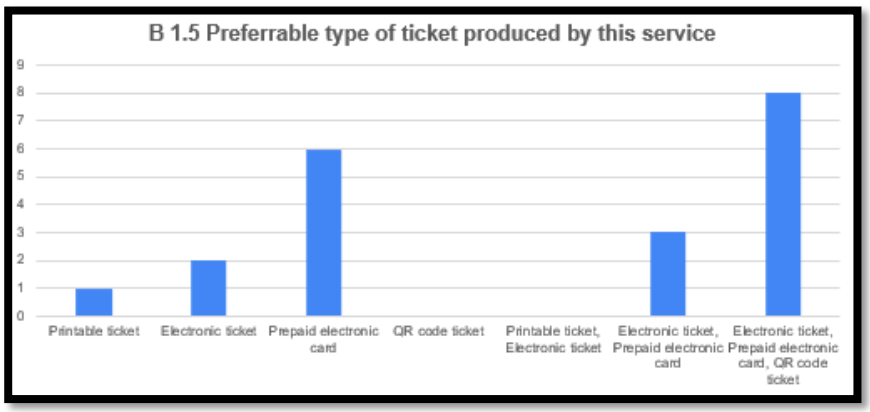



**Figure 19. Types of ticket preferred by this service**

Coming to the option of choosing preferred types of ticket, stakeholders represented their opinion through almost equal division of two of the most desirable solutions, one being the simple prepaid electronic card, and other the aggregate of all viable options.

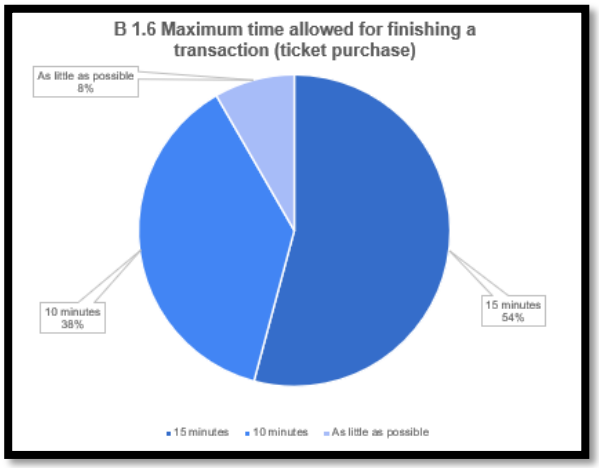



**Figure 20. Time allowed to secure a transaction**

When regarding the maximum time frame in which the transaction, mainly the ticket purchase should be finished, 92% of the answers could be summarized that 10-15 minutes is sufficient.

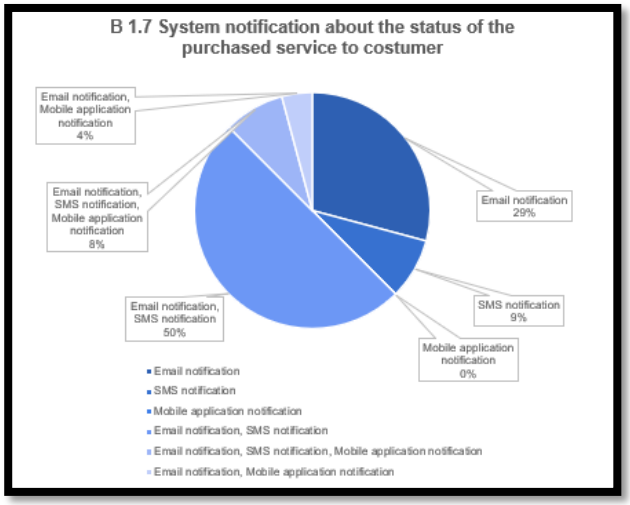



**Figure 21. System notification about the status of the purchased service**

Half of the stakeholders stated that the best way of notifying the customer about the status of the purchased service should occur via Email notification and SMS notification. Second viable option goes to the only e-mail notification as it is the preferred type of business communication and an aggregator of important notes, messages and evidently, attachments.

**"B 1.8 Which multimodal services do you think could be offered through E-CHAIN booking & ticketing module on pilot sites? "**

- Venezia - Spalato: Flixbus+ Nomago; / Venezia -Ancona: Trenitalia/
- bus line: Venezia (I) - Rovigno (HR) - Pola (HR), BRUSUTTI srl / FILS d.o.o.
- rail-bus-ferry / airport-bus-ferry
- Venezia -Split - Brač / Trenitalia-Jadrolinija
- reservation of public bicycles
- ferry - taxi
- include the various available carriers at a particular destination; e.g., Split - Airport, Split - Medjugorje, Split - Brač / Hvar; Split - Plitvice - Zagreb
- all services related to micro- and e-mobility in involved destinations
- any services that are related with the primary travel route of the passenger and could be extension of it.
- end-to-end travel experience with automatic selection of route and transport means according to pre-set criteria by the passenger and single point of payment for all transport means along the finally selected route. It should be transparent for the passenger.
- Venice -Split – Brač /Trenitalia-Jadrolinija
- Croatia Airlines + Jadrolinija e.g., London - Split - Brač/Hvar/Vis Regio Jet + Jadrolinija e.g., Prag - Rijeka – Rab

### 5.1.4. WEB SERVICES

As the purpose of the next few questions refer to the web services and their potential use cases, answers given by the stakeholders were not given in a form of offered and prelisted answers, rather reflect stakeholder's visions and personal opinions regarding the topic:

**"W 1.1 What services and standard will be used for exchange/integration of E-CHAIN services*"**

- I cannot answer, it is a decision that will be based on previous questions and experiences of other related platforms (such as FLIX bus)
- next bike app for booking public bikes
- I am not versed in the area
- I am not versed in individual web servers, it should combine as many possible services as possible (secure timetables, reservations, real-time events)
- standard message broker exchange using XML schemes
- This is difficult to answer. The project involves several countries and I could name only local vendors that could be involved in the process.
- There is no particular industry standard except use of APIs, standardized XML schemas and standard message exchange brokers.
- booking, ticketing
- we will integrate with partners via web services

**"W 1.2 What kind of solution do you propose for the clearance of sold multimodal tickets between service providers?"**

- to produce separate vouchers for each ticket in order to make all bookings independent
- Upon entering the vehicle, the service provider scans the part of the ticket that refers to it and possibly, for easier monitoring, creates its own ticket with a price of 0.00 euros.
- MyCicero
- for the end user - a discount for multimodal purchases
- when an individual service provider registers (integrates) on the E-CHAIN platform, to go directly to its application
- e-card with bar code, confirmation - voucher
- according to the bar code, it is known exactly how many of whose services were used, so you can calculate according to the actual use.

- this is probably going to have to be a custom solution covering ERP-CRM systems of operators in pilot sites (at least initially)
- for Croatia, T-Com PayWay or CorvusPay.

- **"W 1.3 What kind of solution do you propose for charging and allocating E-CHAIN service costs for e.g., multimodal tickets, parking tickets, event ticket?"**
- Include the costs for maintaining and operating the platform within the fee that is granted by each provider, then for each provider receive monthly payment on the basis of the account statement of the sales net of fees
- percentage sales service (proposal 15%)
- 2% of the selling price
- price list / tariff integration, monthly share payment
- each provider has its own price list of services, the solution should be developed by agreement between all participants (bidders within the platform)
- there should be a possibility that each server can charge for multimodal tickets, and the billing goes according to actual usage. A calculation is proposed every 7 days in the season and every 14 or a month out of season.
- as cheap as possible
- for the reasons of economic efficiency, it would be best that such a solution is operated by one stakeholder in the pilot sites, and a multiparty agreement i stipulated for provision of such services.
- don't know of such a solution, never heard of it. Maybe it has to be developed according to custom functional specification.

### 5.1.5. TECHNICAL REQUIREMENT ANALYSIS

Technical requirements, in the context of software development and systems engineering, are the factors required to deliver a desired function or behaviour from a system to satisfy a user's standards and needs. Technical requirements can refer to systems like software, electronic hardware devices or software-driven electronic devices.

Technical requirements are a part of requirements analysis (also known as requirements engineering), an interdisciplinary field in engineering that involves the design and maintenance of complex systems.

The factors considered in technical requirements are often referred to as "itties" as this is the same suffix on many of the factor types. Factors include types include accessibility, adaptability, usability, auditability, maintainability and performance. The combination of factors and the individual emphasis of each to most effectively meet the needs of users are determined through a consultation process.

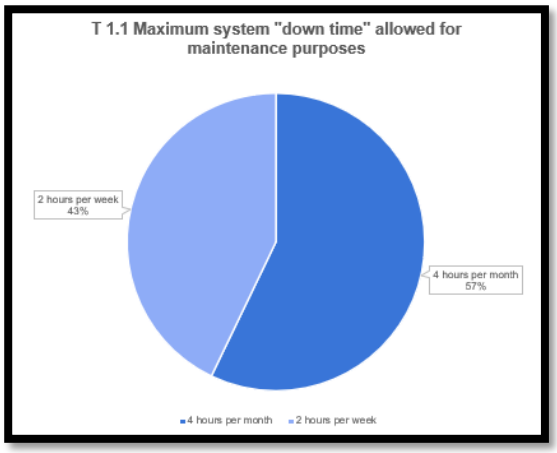
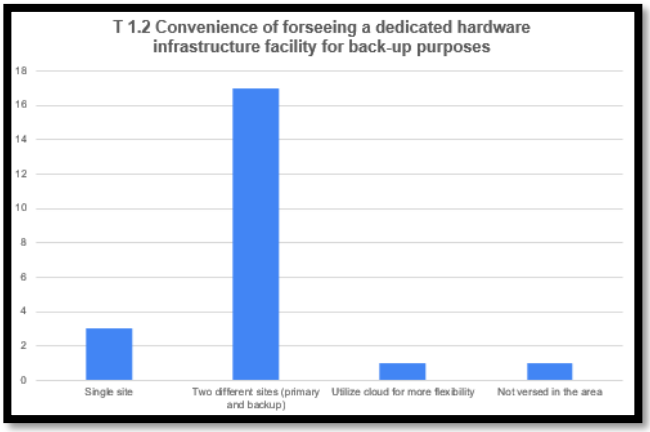



**Figure 23. Hardware infrastructure facility for back-up purposes**

The data center is the backbone and nerve center of an organization, the place where its most critical assets, the data it depends on are stored and processed. Loss or compromise of that data can do serious damage or be fatal to a business. Needless to say, having a consistent backup and data recovery plan in place is essential for survival.

**Figure 22. Allowed system "down time" for maintenance purposes**

The term downtime is used to refer to periods when a system is unavailable. The unavailability is the proportion of a time-span that a system is unavailable or offline. This is usually a result of the system failing to function because of an unplanned event, or because of routine maintenance (a planned event). Stakeholder's responses were almost equally divided between 4 hours/month and 2 hours/week.



# 6. CONCLUSIONS

Guided by the previously presented and briefly explained results acquired from the stakeholder's answers during their interview with the interviewers from E-CHAIN project resulted with the following conclusion:

During the first phase of any type of voyage planning, timely reservation and booking has to be made to ensure an arrangement which is based on desired time and place parameters. Whilst living in the modern, technology driven everyday world, online reservation and booking of intermodal transportation services must be enabled. At the point and time of reservation, timely arrival, which the questionnaire shows to be around 10 – 15 minutes post finishing the transaction of an online ticket, notification has to be sent preferably via email and/or mobile application services. Preferrable language of the platform, according to the stakeholder's responses should be of trilateral nature, that being English, Italian and Croatian. Recommended would be possessing an extensively developed help desk service, preferably in the form of having FAQ section on the website which has the ability of guiding users through different layers of the most frequently asked questions and the easiest way of solving that issues. By having a well-developed help desk service, possible reductions in cost could be made by not having the physical individual designated solely for that purpose. Chat-bot could also be a viable solution. Mandatory functionalities have to include display of information that are time sensitive and that could potentially disrupt passenger's next leg of travel activities. Having the option of timely notifications would greatly benefit the overall accordance within the whole ecosystem. Information about any kind of real-time events such as cancellations, delays or even natural disasters should have to be timely updated and possibly sent to ones to whom it may concern, i.e., someone whose travel itinerary could potentially be disrupted. As the information technology is in the full swing, any kind of notifications on the mobile application or even regular text messages definitely have to find its place within the platform. Unnecessary functionalities refer to everyday situations such as finding a free parking spot or having a dedicated info display totem with real time indicator of available spaces. While it is definitely convenient, it is not necessary. Unnecessary would also have to be geo-localization aspects of the transportation vehicles/vessels. Regularly updated display (on portable devices or on totem pole inside the terminal) of time of Arrivals and departures should suffice as that information is what counts for the end users. This questionnaire gave a lot of valuable insights and inputs regarding the physical and psychological level implementation of E-CHAIN project could bring. From purely technical and technological point of view, the platform has been extensively thought through.

Recommendations regarding the further development would focus on maintaining the core functionalities project could bring. Project has to further develop the concept and what added value could it bring on a broader level. Focusing on little details which in this phase do not represent a major obstacle could deter from the core vision which is facilitation of connectivity and harmonization of data for the

Adriatic Intermodal Network. After the core has been implemented, lot of room has to be left for future development, further upgrades and for tweaking the possible bugs and glitches.

# D 3.3.2 – TECHNICAL AND NON-TECHNICAL REQUIREMENTS

## Activity 3.3 – Technical and functional requirements

December, 2020 - Version draft

Partner: LP – Municipality of Ancona
Authors: Marco Cocciarinni
Email: <admin@globeinside.com>

| | |
|---|---|
| **Project Acronym** | E-CHAIN |
| **Project ID Number** | 10048282 |
| **Project Title** | Enhanced Connectivity and Harmonization of data for the Adriatic Intermodal Network |
| **Priority Axis** | 4 - Maritime Transport |
| **Specific objective** | 4.1 - Improve the quality, safety and environmental sustainability of marine and coastal transport services and nodes by promoting multimodality in the programme area |
| **Work Package Number** | 3 |
| **Work Package Title** | Mobility Maritime Design |
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| **Activity Title** | Technical and functional requirements |
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## ACRONYMS / ABBREVIATIONS

| ACRONYM | DEFINITION |
|---|---|
| SoA | State of the Art |
| PP | Project partners |
| PT | Project Team |
| TC | Technical task coordinator |
| WP | Work package |
| IT | Information Technologies |
| | |
| | |

## REFERENCE DOCUMENTATION

| No | TITLE | REPORT No. | PUBLISHED BY |
|---|---|---|---|
| 1 | **Application Form – E-CHAIN - Enhanced Connectivity and Harmonization of data for the Adriatic Intermodal Network**<br><br>2014 - 2020 Interreg V-A Italy - Croatia CBC Programme<br>Call for proposal 2017 Standard - E-CHAIN | Application ID: 10048282 | Lead Applicant: Municipality of Ancona |

# 1. INTRODUCTION

## 1.1 PURPOSE OF THE DOCUMENT

This document is relevant to the activity 3.3 Technical and functional requirements of E-CHAIN project - Enhanced Connectivity and Harmonization of data for the Adriatic Intermodal Network.

The purpose of this document is to collect non-technical and technical requirements for design and development of the services realized and integrated in E-CHAIN platform for the deployment in the pilot sites. The information provided in this report, together with information supplied in "Use case scenarios selection and preliminary requirements definition" (D 3.3.1), serve for drawing design of all pilot sites implementation and specifications preparation for all equipment and systems involved.

It is the operational document for the execution of the project being used:

- by the Task Manager (TM) and Project Team (PT) to provide detailed information E-CHAIN platform functional and technical requirements
- by the Activity 3.4 Platform and service design information needed for D 3.4.1 –E--CHAIN platform design and high-level architecture.
- by the Activities of WP 4 Platform and Service Implementation to provide data needed for D 3.3.1 – Use case scenarios selection and preliminary requirements definition for defining starting level of mobility services for scenarios and D 3.3.2 – Technical and non-technical requirements for information on current operational systems capabilities.

## 1.2 WORKING PRINCIPLE

The main source of data on the functional and technical requirements of the E-CHAIN platform are project partners and other major stakeholders as potential users of the platform on the side of service providers whose services will be provided by the platform.

In order to get a realistic picture of requirements that the E-CHAIN platform needs to meet, questionnaires have been prepared for the project partners and main stakeholders identified through previous activities.

The questionnaire is designed as a stakeholder interview conducted by the project partner and is relevant to the activities of WP3. It consists of several series of questions related to:

- identification data of the partner and of the person conducting the interview
- stakeholder data
- E-CHAIN functional requirements
    - E-CHAIN general functional requirements
    - Functional requirements for info-mobility
    - Booking & Ticketing
    - Web Services
- Technical requirements

This document contains the answers collected by the questionnaire, their analysis and conclusions related to the functional and technical requirements.

# 2. BACKGROUND INFORMATION

E-CHAIN (Enhanced Connectivity and Harmonization of data for the Adriatic Intermodal Network) main objective is to enhance connectivity and harmonization of data for the Adriatic Intermodal Network, through the realization of a modular integrated software (E-CHAIN platform) for the management of intermodal transport services in port areas for passenger transport. To enhance the current situation, E-CHAIN will focus on providing new services such as an improved Port multimodal info mobility system for the passengers, a ticketing system integrated with other transport modes, an advanced touristic co-marketing tool for the operators. These services will be designed and deployed in the selected pilot sites (Ancona, Split and Venice). A Business model suited to adapt the technology developed in the three applicative contexts will be created and specific needs will be taken into account.

The aim of WP3 is to design platform and services and to prepare the E-CHAIN services for deployment in the pilot sites (Ancona, Split and Venice).

The specific objectives of this WP are to:

- Establish the requirements and specifications for E-CHAIN services and for integration with existing services/systems
- Create a detailed reference architecture that complies with relevant standards and best practices
- Verify adapted services against the requirements and specifications before developing for pilot sites to WP4

# 3. PRESENTATION OF RESULTS OF CONDUCTED INTERVIEWS

For the purpose of accelerating procedure, gaining insights and valuable inputs regarding the advancement of E-CHAIN project, project partners had to conduct an interview among the relevant stakeholders in order to collect information necessary for the continuation of the project. A total of 25 stakeholders were kindly asked to contribute for the development of E-CHAIN pilot project.

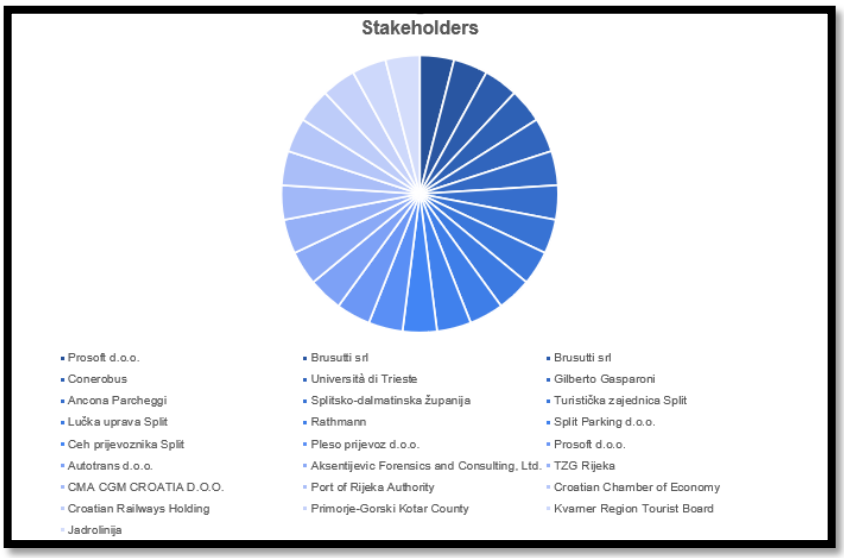



**Figure 1. List of stakeholders relevant to the project**

Regarding the contribution to the relevance of acquired answers, stakeholders were chosen in order to represent different groups covering all the major fields and expertise. Groups were divided in the following categories:

- Enterprises, transport operators
- Education and research
- Transport associations
- Tourist boards
- Local, regional and national authorities
- NGOs
- Professional association of business people in Croatia

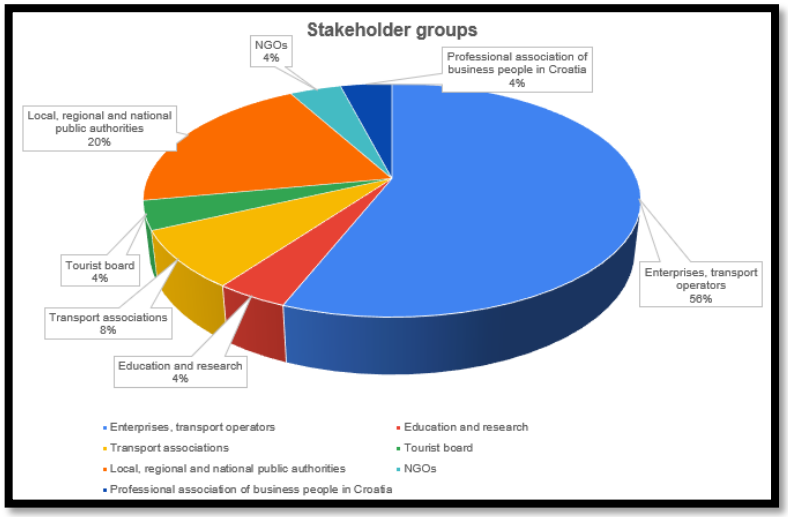



**Figure 2. Groups of stakeholders**

Furthermore, as the complexity of the task required detailed analysis of the stakeholders and their given answers, the questionnaire required stakeholders to give input regarding the type of service they provide and thus contribute to the society and the development of the project.

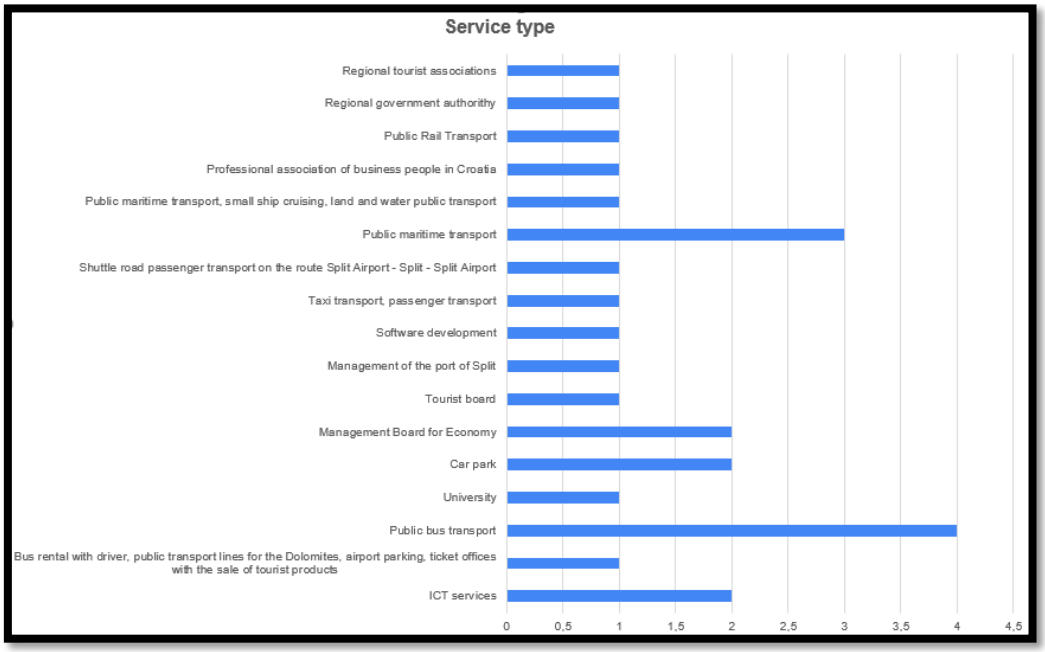
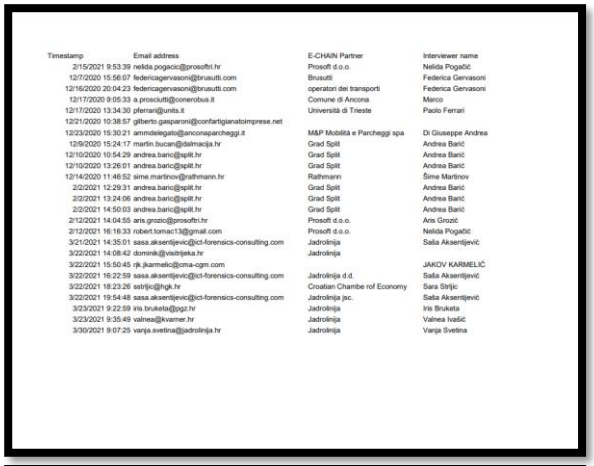
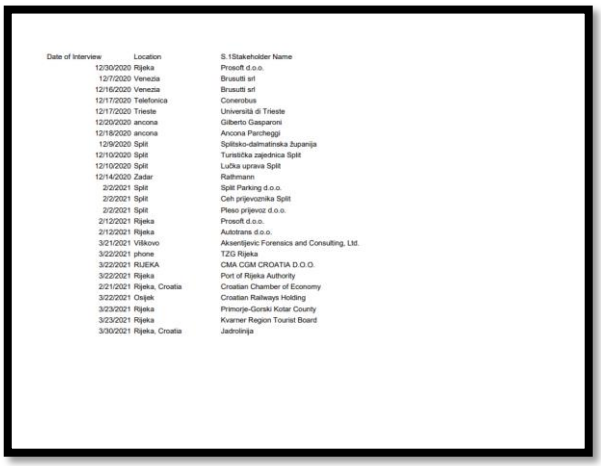



**Figure 3. Stakeholders according to the type of service they provide**

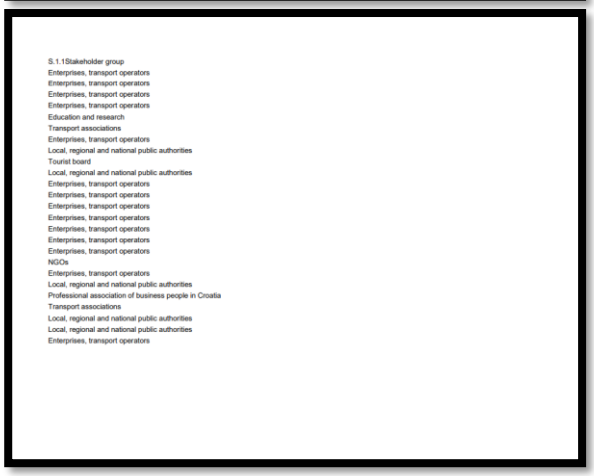
# 4. REQUIREMENT RESULTS



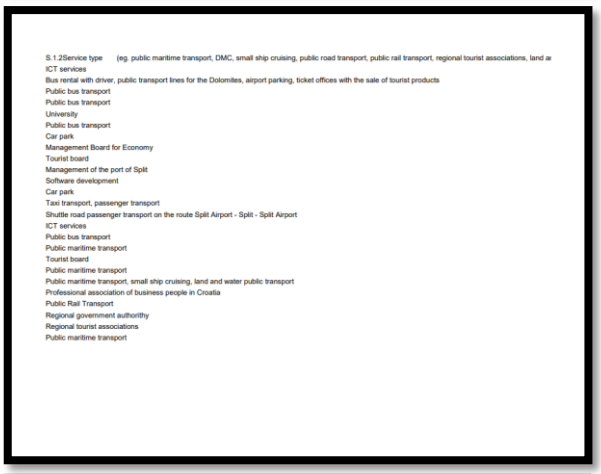
| Timestamp | Email address | E-CHAIN Partner | Interviewer name |
|---|---|---|---|
| 2/15/2021 9:53:39 | nelida.pogacic@prosoftri.hr | Prosoft d.o.o. | Nelida Pogačić |
| 12/7/2020 15:56:07 | federicagervasoni@brusutti.com | Brusutti | Federica Gervasoni |
| 12/16/2020 20:04:23 | federicagervasoni@brusutti.com | operatori dei transporti | Federica Gervasoni |
| 12/17/2020 9:05:33 | a.prosciutti@conerobus.it | Comune di Ancona | Marco |
| 12/17/2020 13:34:30 | pferrari@units.it | Università di Trieste | Paolo Ferrari |
| 12/21/2020 10:38:57 | gilberto.gasparoni@confartigianatoimprese.net | | |
| 12/23/2020 15:30:21 | ammdelegato@anconaparcheggi.it | M&P Mobilità e Parcheggi spa | Di Giuseppe Andrea |
| 12/9/2020 15:24:17 | martin.bucan@dalmacija.hr | Grad Split | Andrea Barić |
| 12/10/2020 10:54:29 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 12/10/2020 13:26:01 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 12/14/2020 11:46:52 | sime.martinov@rathmann.hr | Rathmann | Šime Martinov |
| 2/2/2021 12:29:31 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 2/2/2021 13:24:06 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 2/2/2021 14:50:03 | andrea.baric@split.hr | Grad Split | Andrea Barić |
| 2/12/2021 14:04:55 | aris.grozic@prosoftri.hr | Prosoft d.o.o. | Aris Grozić |
| 2/12/2021 16:16:33 | robert.tomac13@gmail.com | Prosoft d.o.o. | Nelida Pogačić |
| 3/21/2021 14:35:01 | sasa.aksentijevic@ict-forensics-consulting.com | Jadrolinija | Saša Aksentijević |
| 3/22/2021 14:08:42 | dominik@visitrijeka.hr | Jadrolinija | |
| 3/22/2021 15:50:45 | rjk.jkarmelic@cma-cgm.com | | JAKOV KARMELIĆ |
| 3/22/2021 16:22:59 | sasa.aksentijevic@ict-forensics-consulting.com | Jadrolinija d.d. | Saša Aksentijević |
| 3/22/2021 18:23:26 | sstrljic@hgk.hr | Croatian Chambe rof Economy | Sara Strljic |
| 3/22/2021 19:54:48 | sasa.aksentijevic@ict-forensics-consulting.com | Jadrolinija jsc. | Saša Aksentijević |
| 3/23/2021 9:22:59 | iris.bruketa@pgz.hr | Jadrolinija | Iris Bruketa |
| 3/23/2021 9:35:49 | valnea@kvarner.hr | Jadrolinija | Valnea Ivašić |
| 3/30/2021 9:07:25 | vanja.svetina@jadrolinija.hr | Jadrolinija | Vanja Svetina |



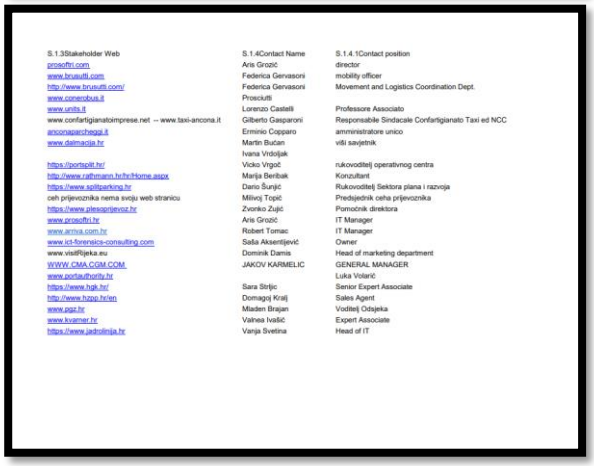
| Date of Interview | Location | S.1Stakeholder Name |
|---|---|---|
| 12/30/2020 | Rijeka | Prosoft d.o.o. |
| 12/7/2020 | Venezia | Brusutti srl |
| 12/16/2020 | Venezia | Brusutti srl |
| 12/17/2020 | Telefonica | Conerobus |
| 12/17/2020 | Trieste | Università di Trieste |
| 12/20/2020 | ancona | Gilberto Gasparoni |
| 12/18/2020 | ancona | Ancona Parcheggi |
| 12/9/2020 | Split | Splitsko-dalmatinska županija |
| 12/10/2020 | Split | Turistička zajednica Split |
| 12/10/2020 | Split | Lučka uprava Split |
| 12/14/2020 | Zadar | Rathmann |
| 2/2/2021 | Split | Split Parking d.o.o. |
| 2/2/2021 | Split | Ceh prijevoznika Split |
| 2/2/2021 | Split | Pleso prijevoz d.o.o. |
| 2/12/2021 | Rijeka | Prosoft d.o.o. |
| 2/12/2021 | Rijeka | Autotrans d.o.o. |
| 3/21/2021 | Vilkovo | Aksentijevic Forensics and Consulting, Ltd. |
| 3/22/2021 | phone | TZG Rijeka |
| 3/22/2021 | RIJEKA | CMA CGM CROATIA D.O.O. |
| 3/22/2021 | Rijeka | Port of Rijeka Authority |
| 2/21/2021 | Rijeka, Croatia | Croatian Chamber of Economy |
| 3/22/2021 | Osijek | Croatian Railways Holding |
| 3/23/2021 | Rijeka | Primorje-Gorski Kotar County |
| 3/23/2021 | Rijeka | Kvarner Region Tourist Board |
| 3/30/2021 | Rijeka, Croatia | Jadrolinija |



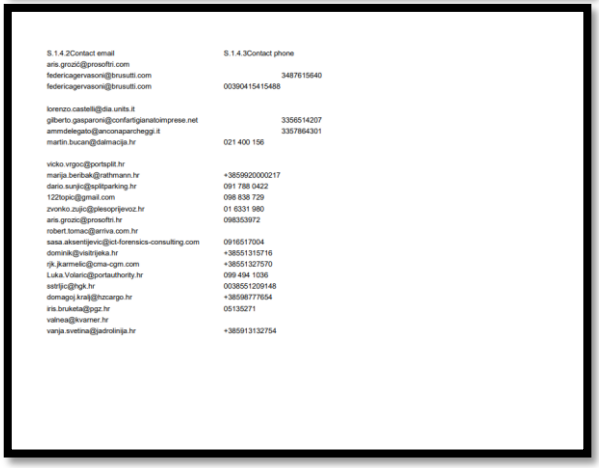
S.1.1Stakeholder group
Enterprises, transport operators
Enterprises, transport operators
Enterprises, transport operators
Enterprises, transport operators
Education and research
Transport associations
Enterprises, transport operators
Local, regional and national public authorities
Tourist board
Local, regional and national public authorities
Enterprises, transport operators
Enterprises, transport operators
Enterprises, transport operators
Enterprises, transport operators
Enterprises, transport operators
Enterprises, transport operators
Enterprises, transport operators
NGOs
Enterprises, transport operators
Local, regional and national public authorities
Professional association of business people in Croatia
Transport associations
Local, regional and national public authorities
Local, regional and national public authorities
Enterprises, transport operators



S.1.2Service type (eg. public maritime transport, DMC, small ship cruising, public road transport, public rail transport, regional tourist associations, land a
ICT services
Bus rental with driver, public transport lines for the Dolomites, airport parking, ticket offices with the sale of tourist products
Public bus transport
Public bus transport
University
Public bus transport
Car park
Management Board for Economy
Tourist board
Management of the port of Split
Software development
Car park
Taxi transport, passenger transport
Shuttle road passenger transport on the route Split Airport - Split - Split Airport
ICT services
Public bus transport
Public maritime transport
Tourist board
Public maritime transport
Public maritime transport, small ship cruising, land and water public transport
Professional association of business people in Croatia
Public Rail Transport
Regional government authorithy
Regional tourist associations
Public maritime transport



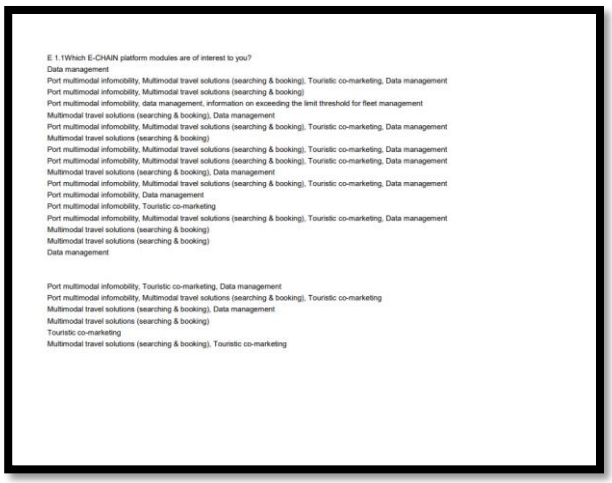
| S.1.3Stakeholder Web | S.1.4Contact Name | S.1.4.1Contact position |
|---|---|---|
| prosoftri.com | Aris Grozić | director |
| www.brusutti.com | Federica Gervasoni | mobility officer |
| http://www.brusutti.com/ | Federica Gervasoni | Movement and Logistics Coordination Dept. |
| www.conerobus.it | Prosciutti | |
| www.units.it | Lorenzo Castelli | Professore Associato |
| www.confartigianatoimprese.net -- www.taxi-ancona.it | Gilberto Gasparoni | Responsabile Sindacale Confartigianato Taxi ed NCC |
| anconaparcheggi.it | Erminio Copparo | amministratore unico |
| www.dalmacija.hr | Martin Bucan | viši savjetnik |
| | Ivana Vidoljak | |
| https://portsplit.hr/ | Vicko Vrgoč | rukovoditelj operativnog centra |
| http://www.rathmann.hr/hr/Home.aspx | Marija Beribak | Konzultant |
| https://www.splitparking.hr | Dario Šunjić | Rukovoditelj Sektora plana i razvoja |
| ceh prijevoznika nema svoju web stranicu | Milivoj Topić | Predsjednik ceha prijevoznika |
| https://www.plesoprijevoz.hr | Zvonko Zujić | Pomoćnik direktora |
| www.prosoftri.hr | Aris Grozić | IT Manager |
| www.arriva.com.hr | Robert Tomac | IT Manager |
| www.ict-forensics-consulting.com | Saša Aksentijević | Owner |
| www.visitRijeka.eu | Dominik Damis | Head of marketing department |
| WWW.CMA-CGM.COM | JAKOV KARMELIĆ | GENERAL MANAGER |
| www.portauthority.hr | | Luka Volarić |
| https://www.hgk.hr/ | Sara Strljic | Senior Expert Associate |
| http://www.hzpp.hr/en | Domagoj Kralj | Sales Agent |
| www.pgz.hr | Mladen Brajan | Voditelj Odjeka |
| www.kvarner.hr | Valnea Ivašić | Expert Associate |
| https://www.jadrolinija.hr | Vanja Svetina | Head of IT |



| S.1.4.2Contact email | S.1.4.3Contact phone |
|---|---|
| aris.grozic@prosoftri.com | |
| federicagervasoni@brusutti.com | 3487615640 |
| federicagervasoni@brusutti.com | 00390415415488 |
| | |
| lorenzo.castelli@dia.units.it | |
| gilberto.gasparoni@confartigianatoimprese.net | 3356514207 |
| ammdelegato@anconaparcheggi.it | 3357864301 |
| martin.bucan@dalmacija.hr | 021 400 156 |
| | |
| vicko.vrgoc@portsplit.hr | |
| marija.beribak@rathmann.hr | +3859920000217 |
| dario.sunjic@splitparking.hr | 091 788 0422 |
| 122topic@gmail.com | 098 836 729 |
| zvonko.zujic@plesoprijevoz.hr | 01 6331 980 |
| aris.grozic@prosoftri.hr | 098353972 |
| robert.tomac@arriva.com.hr | |
| sasa.aksentijevic@ict-forensics-consulting.com | 0916517004 |
| dominik@visitrijeka.hr | +38551315716 |
| rjk.jkarmelic@cma-cgm.com | +38551327570 |
| Luka.Volaric@portauthority.hr | 099 494 1036 |
| sstrljic@hgk.hr | 0038551209148 |
| domagoj.kralj@hzcargo.hr | +38598777654 |
| iris.bruketa@pgz.hr | 05135271 |
| valnea@kvarner.hr | |
| vanja.svetina@jadrolinija.hr | +385913132754 |

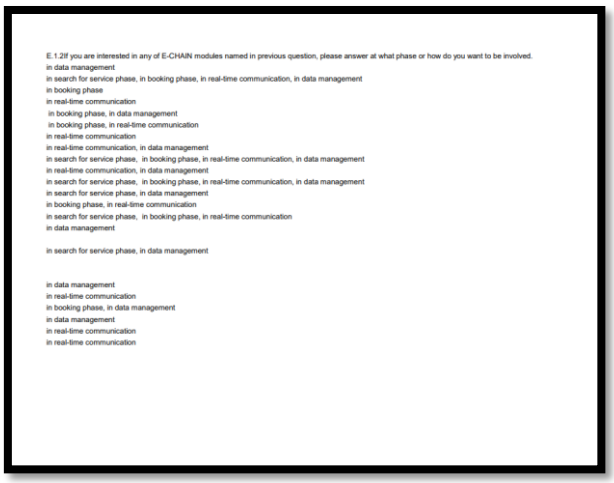
# 4.1. FUNCTIONAL REQUIREMENTS

## 4.1.1. E-CHAIN GENERAL FUNCTIONAL REQUIREMENTS



E 1.1Which E-CHAIN platform modules are of interest to you?
Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking)
Port multimodal infomobility, data management, information on exceeding the limit threshold for fleet management
Multimodal travel solutions (searching & booking), Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Multimodal travel solutions (searching & booking)
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Multimodal travel solutions (searching & booking), Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Port multimodal infomobility, Data management
Port multimodal infomobility, Touristic co-marketing
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing, Data management
Multimodal travel solutions (searching & booking)
Multimodal travel solutions (searching & booking)
Data management

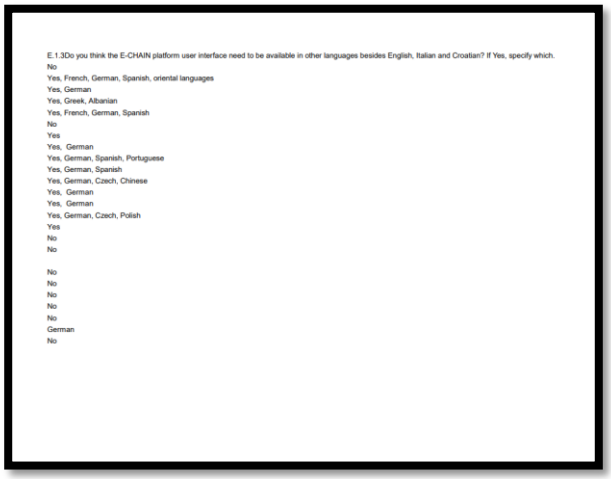
Port multimodal infomobility, Touristic co-marketing, Data management
Port multimodal infomobility, Multimodal travel solutions (searching & booking), Touristic co-marketing
Multimodal travel solutions (searching & booking), Data management
Multimodal travel solutions (searching & booking)
Touristic co-marketing
Multimodal travel solutions (searching & booking), Touristic co-marketing



E.1.2If you are interested in any of E-CHAIN modules named in previous question, please answer at what phase or how do you want to be involved.
in data management
in search for service phase, in booking phase, in real-time communication, in data management
in booking phase
in real-time communication
in booking phase, in data management
in booking phase, in real-time communication
in real-time communication
in real-time communication, in data management
in search for service phase, in booking phase, in real-time communication, in data management
in real-time communication, in data management
in search for service phase, in booking phase, in real-time communication, in data management
in search for service phase, in data management
in booking phase, in real-time communication
in search for service phase, in booking phase, in real-time communication
in data management

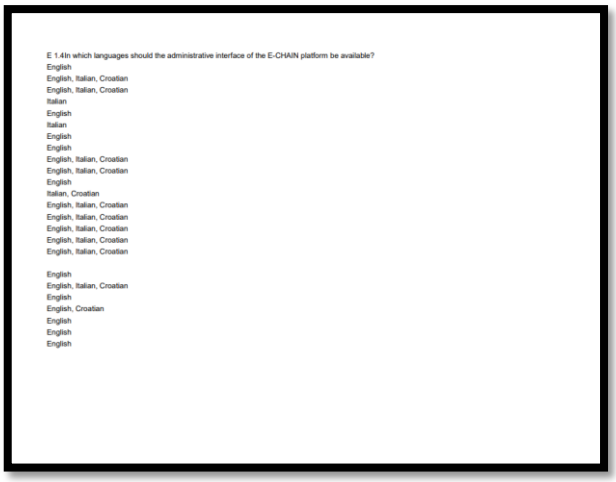
in search for service phase, in data management

in data management
in real-time communication
in booking phase, in data management
in data management
in real-time communication
in real-time communication



E.1.3Do you think the E-CHAIN platform user interface need to be available in other languages besides English, Italian and Croatian? If Yes, specify which.
No
Yes, French, German, Spanish, oriental languages
Yes, German
Yes, Greek, Albanian
Yes, French, German, Spanish
No
Yes
Yes, German
Yes, German, Spanish, Portuguese
Yes, German, Spanish
Yes, German, Czech, Chinese
Yes, German
Yes, German
Yes, German, Czech, Polish
Yes
No
No

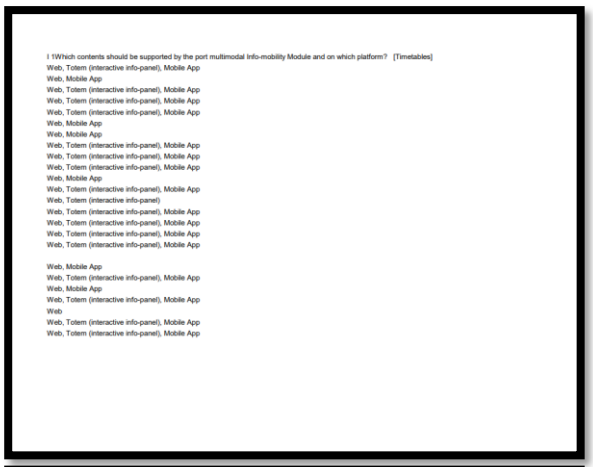
No
No
No
No
No
German
No



E 1.4In which languages should the administrative interface of the E-CHAIN platform be available?
English
English, Italian, Croatian
English, Italian, Croatian
Italian
English
Italian
English
English
English, Italian, Croatian
English, Italian, Croatian
English
Italian, Croatian
English, Italian, Croatian
English, Italian, Croatian
English, Italian, Croatian
English, Italian, Croatian
English, Italian, Croatian

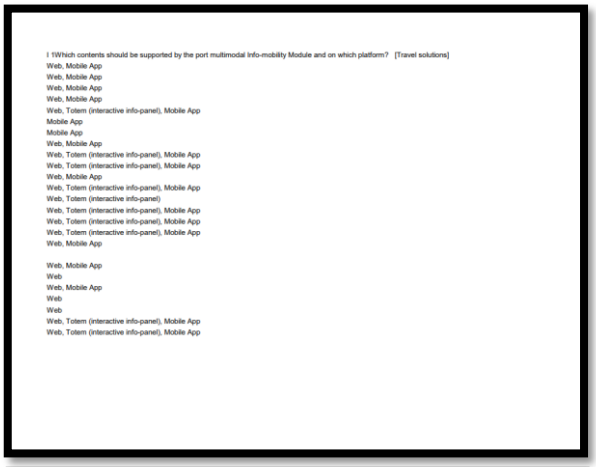
English
English, Italian, Croatian
English
English, Croatian
English
English
English

## 4.1.2. FUNCTIONAL REQUIREMENTS FOR INFO-MOBILITY



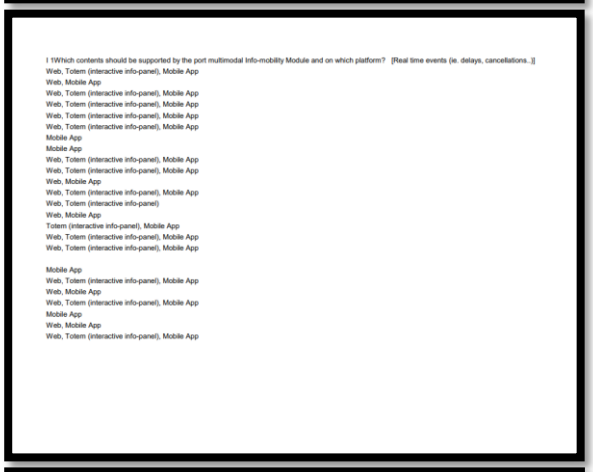
I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Timetables]
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App

Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App



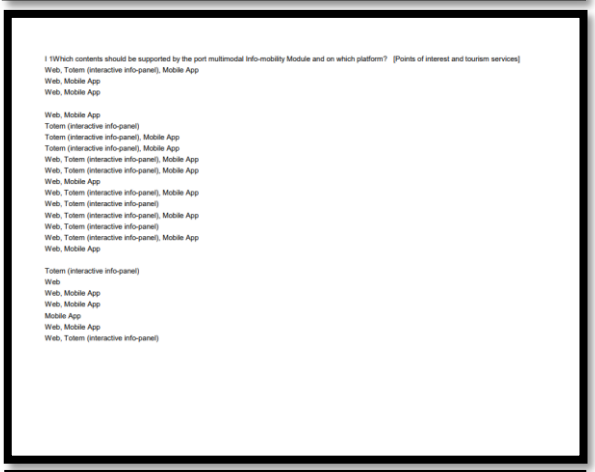
I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Travel solutions]
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Mobile App
Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App

Web, Mobile App
Web
Web, Mobile App
Web
Web
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App



I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Real time events (ie. delays, cancellations..)]
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Mobile App
Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Mobile App
Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App

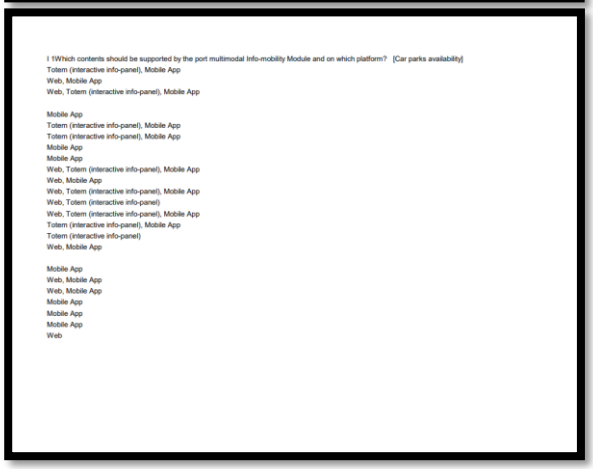
Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App



I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Points of interest and tourism services]
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Mobile App

Web, Mobile App
Totem (interactive info-panel)
Totem (interactive info-panel), Mobile App
Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App

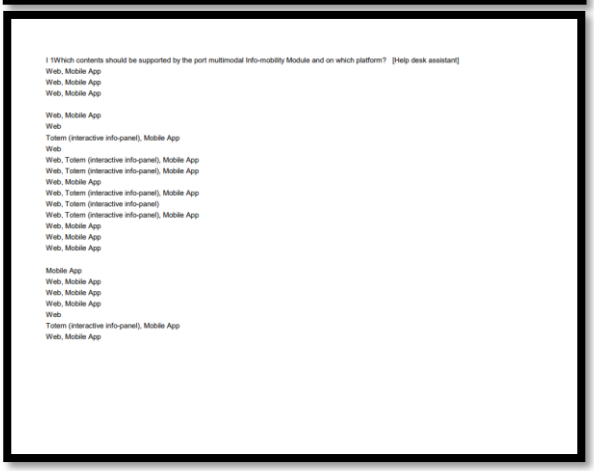
Totem (interactive info-panel)
Web
Web, Mobile App
Web, Mobile App
Mobile App
Web, Mobile App
Web, Totem (interactive info-panel)



I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Car parks availability]
Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App

Mobile App
Totem (interactive info-panel), Mobile App
Totem (interactive info-panel), Mobile App
Mobile App
Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Totem (interactive info-panel), Mobile App
Totem (interactive info-panel)
Web, Mobile App

Mobile App
Web, Mobile App
Web, Mobile App
Mobile App
Mobile App
Mobile App
Web



I 1Which contents should be supported by the port multimodal Info-mobility Module and on which platform? [Help desk assistant]
Web, Mobile App
Web, Mobile App
Web, Mobile App

Web, Mobile App
Web
Totem (interactive info-panel), Mobile App
Web
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Totem (interactive info-panel), Mobile App
Web, Totem (interactive info-panel)
Web, Totem (interactive info-panel), Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App

Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web
Totem (interactive info-panel), Mobile App
Web, Mobile App

I 1.1 List other contents if you think they should be supported in the E-CHAIN info-mobility module?

emissions produced for that shift
no
Information about changes to the service that often occurs eg. extended service until ... etc.

transport on request, electric chargers for vehicles, etc.
cultural and sporting events and gastronomy

/
basic information about each city, the nearest next city
/
Air traffic

Links to traffic situation on roads / national auto club

Nautical maritime situation in the vicinity of the passenger port

Those continuations of travel that are possible by rail (partial timetable)
/

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Jadrolinija]
Web, Totem, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Link to carrier/terminal

Web, Totem, Link to carrier/terminal
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Totem, Link to carrier/terminal
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Web, Totem, Link to carrier/terminal
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Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Water transport]

Web, Link to carrier/terminal
Web, Link to carrier/terminal

Web, Totem, Link to carrier/terminal
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Web

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Web, Link to carrier/terminal

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Rail Transport]
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Web, Link to carrier/terminal

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Totem, Link to carrier/terminal
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Web

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Totem
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Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Bus transport]
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Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
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Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web

Web
Web, Link to carrier/terminal
Web, Totem
Web, Link to carrier/terminal
Link to carrier/terminal
Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal

I 1.2 Timetables - Which timetables would you like to show for your location and in what way? [Airport]
Web, Link to carrier/terminal
Web, Link to carrier/terminal
Web, Link to carrier/terminal

Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
Web, Totem, Link to carrier/terminal
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Web, Totem, Link to carrier/terminal
Web

Web
Web, Link to carrier/terminal
Web, Totem
Web, Link to carrier/terminal
Link to carrier/terminal
Web, Link to carrier/terminal
Web, Totem, Link to carrier/terminal

I 1.2.1 Please provide additional information on selected timetables (eg. Train terminal – Ancona), source of information and add more timetables if appropria
Krk Airport – Jadrolinija, Rijeka bus station, Rijeka rail station

Venice train terminal - connections via IT with Venice Bus Station, Venice Airport, Taxi and Shared Travel, ...

/
/
links to third destinations (eg Split - Medjugorje, Split - Plitvice Lakes)
Air traffic - Rijeka

Relevant timetable for the first "hop" of the travel involving E-CHAIN pilot sites

Most traffic operators including rail, water, road and air can share their timetable using standard API and message exchange through message broker (XML
/

I.3.1 Travel solutions - How you expect the Travel Solutions Module to affect resource optimization?
mobility, CO2 reduction, timetables optimisation
better programming can be made on the means used on the basis of the most requested times
resource optimization is expected to connect carriers and capacities through partnership agreements, better solutions for filling capacities will bring more mor

give greater travel flexibility and the possibility for the traveler to choose alternative means and routes

better use of information

Faster arrival to the destination and selection of the optimal route
better recognition of when to need to strengthen timetables, introduce other new solutions to reduce congestion
less crowds, more mobility, passengers will make decisions based on better information, will ask for less information by other routes
travel time reduction, cost optimization and thus the price of services, increasing the reliability and quality of travel
Good

They should decrease time spent to organize travel. Also, additional discount could be offered if a bundle of tickets for various forms of transport is purchase

If properly executed it could be mildly attractive for the passenger using multimodal passenger means and could slightly increase use of means of maritime t

If the question is related to railway passenger operators, I would say in a negligible way, because the system is not a part of internal IT systems of operators,
/

To provide more information on one service to the passengers.

I 1.3.2 Travel solutions - which data are needed to optimize resources and who owns them?
Jadrolinija, Arriva timetables, Rail timetables

ey for investments in better (electric) vehicles, etc.

traffic analysis of the route, analysis of traffic loads, alternative modes of transport

loads of traffic and road or service interruptions

transport service providers and the Harbour Master's Office
Google and direct input of additional route information
number of passengers, number of vehicles, number of flights, road loads; data are owned by individual operators / service servers, HAK
data on the state of congestion in certain directions; carrier association
alternative modes of transport on the route, traffic routes, connection hoops (bus - railway)

prices, shortest route in terms of distance covered, optimal route, cheapest route, scenic route with POI, one or two alternative routes for each selection

Probably a detailed analysis of timetables should be done using operational research tools and implement it as a part of timetable tool on totems, web and m

I would say timetables, but also sensitive financial data that most operators probably will not share. For example, some variable prices depend on volume of
name of the route
name of the route - source of information
Every participant in the project has its own source of data.

I 4.1 Real time events - specify the types of events for this module and what are the sources of event data
delays, cancellations, accidents
closing of the snow passes in the lines for the Dolomites provided by the contacts on site; delays in embarkation / disembarkation due to fog that does not all
delays, cancellations and possible solutions (such as plane that gives in flight situation for connections)

delays, cancellations, accidents
Public sources
don't know
delays, traffic congestion information and offers of alternative routes
data sources are individual carriers

User logins, information from the system admin - connection to the automatic systems of the transport service provider
delays, cancellations
delays, cancellations, natural disasters, accidents, information on closed roads or some road obstacles, information on road works
delays, cancellations, natural disasters, accidents
delays, cancellations

Road traffic congestion, airport congestion, delays, cancellations, unforeseen events, other

Emergency data, cancellations and delays but only those that are relevant for the travel itinerary of the particular passenger

Natural disaster and accidents. Then, if covid situation will persist, fresh information about covid requirements, situation and testing in areas where the passe
delays
accidents, delays
Cancellations, interrupted lines, delays

I 4.2Real time events - how should the system provide information to passengers in the case of an event ? [delays]
Web, Totem, Mobile App, SMS
Web, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Totem, Mobile App, SMS
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem
Web, Totem, Mobile App
Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App

SMS
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App, SMS

I 4.2Real time events - how should the system provide information to passengers in the case of an event ? [cancelations]
Web, Totem, Mobile App, SMS
Web, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Totem, Mobile App, SMS
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App, SMS
Web, Totem, Mobile App, SMS
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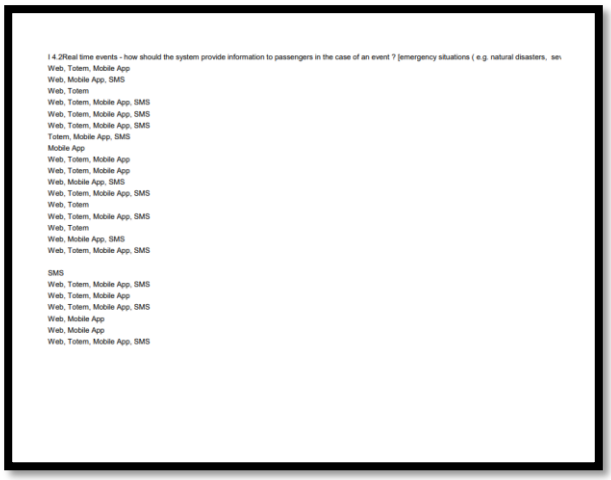
Web, Totem, Mobile App, SMS
Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App

SMS
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App, SMS



I 4.2Real time events - how should the system provide information to passengers in the case of an event ? [emergency situations ( e.g. natural disasters, se
Web, Totem, Mobile App
Web, Mobile App, SMS
Web, Totem
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem, Mobile App, SMS
Totem, Mobile App, SMS
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App, SMS
Web, Totem, Mobile App, SMS
Web, Totem
Web, Totem, Mobile App, SMS
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Web, Mobile App, SMS
Web, Totem, Mobile App, SMS

SMS
Web, Totem, Mobile App, SMS
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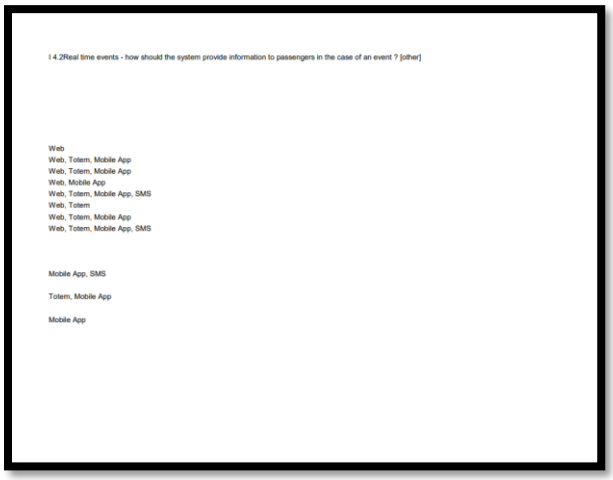
Web, Totem, Mobile App, SMS
Web, Mobile App
Web, Mobile App
Web, Totem, Mobile App, SMS



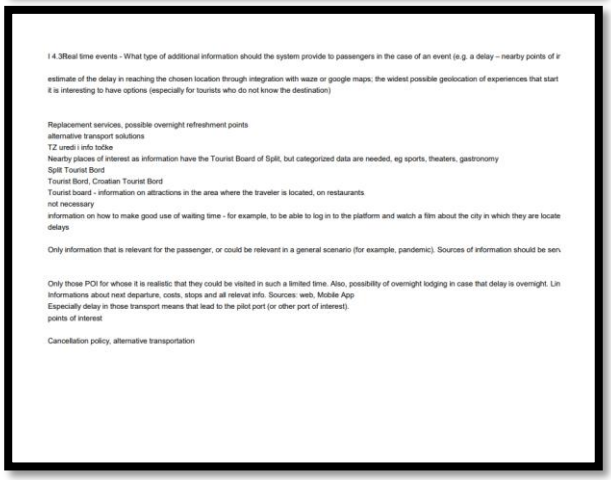
I 4.2Real time events - how should the system provide information to passengers in the case of an event ? [other]

Web
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App, SMS
Web, Totem
Web, Totem, Mobile App
Web, Totem, Mobile App, SMS

Mobile App, SMS

Totem, Mobile App

Mobile App



I 4.3Real time events - What type of additional information should the system provide to passengers in the case of an event (e.g. a delay – nearby points of ir

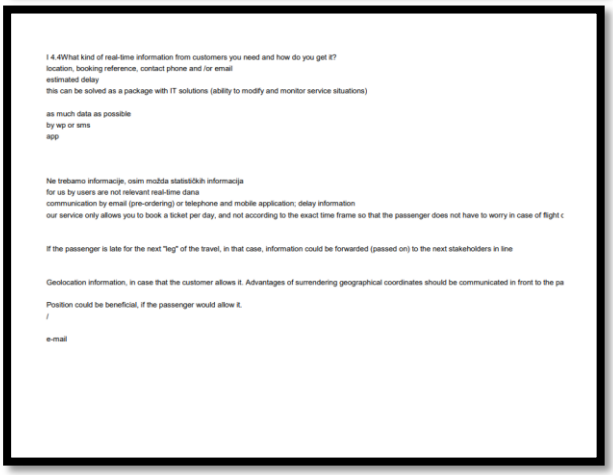
estimate of the delay in reaching the chosen location through integration with waze or google maps; the widest possible geolocation of experiences that start
it is interesting to have options (especially for tourists who do not know the destination)

Replacement services, possible overnight refreshment points
alternative transport solutions
TZ uredi i info točke
Nearby places of interest as information have the Tourist Board of Split, but categorized data are needed, eg sports, theaters, gastronomy
Split Tourist Bord
Tourist Bord, Croatian Tourist Bord
Tourist board - information on attractions in the area where the traveler is located, on restaurants
not necessary
information on how to make good use of waiting time - for example, to be able to log in to the platform and watch a film about the city in which they are locate
delays

Only information that is relevant for the passenger, or could be relevant in a general scenario (for example, pandemic). Sources of information should be ser

Only those POI for whose it is realistic that they could be visited in such a limited time. Also, possibility of overnight lodging in case that delay is overnight. Lin
Informations about next departure, costs, stops and all relevat info. Sources: web, Mobile App
Especially delay in those transport means that lead to the pilot port (or other port of interest).
points of interest

Cancellation policy, alternative transportation



I 4.4What kind of real-time information from customers you need and how do you get it?
location, booking reference, contact phone and /or email
estimated delay
this can be solved as a package with IT solutions (ability to modify and monitor service situations)

as much data as possible
by wp or sms
app

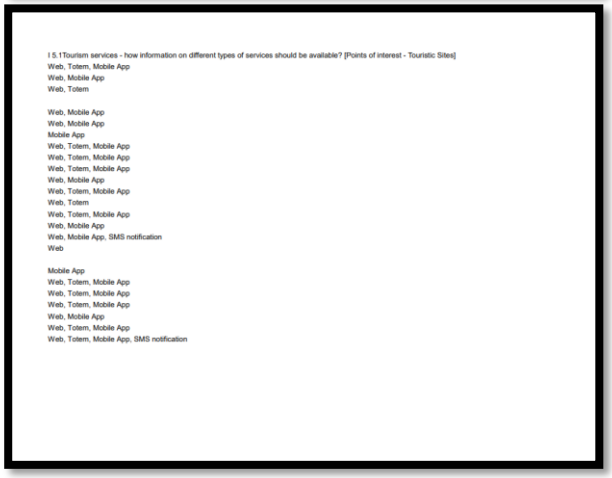
Ne trebamo informacije, osim možda statističkih informacija
for us by users are not relevant real-time dana
communication by email (pre-ordering) or telephone and mobile application; delay information
our service only allows you to book a ticket per day, and not according to the exact time frame so that the passenger does not have to worry in case of flight c

If the passenger is late for the next "leg" of the travel, in that case, information could be forwarded (passed on) to the next stakeholders in line

Geolocation information, in case that the customer allows it. Advantages of surrendering geographical coordinates should be communicated in front to the pa

Position could be beneficial, if the passenger would allow it.
/

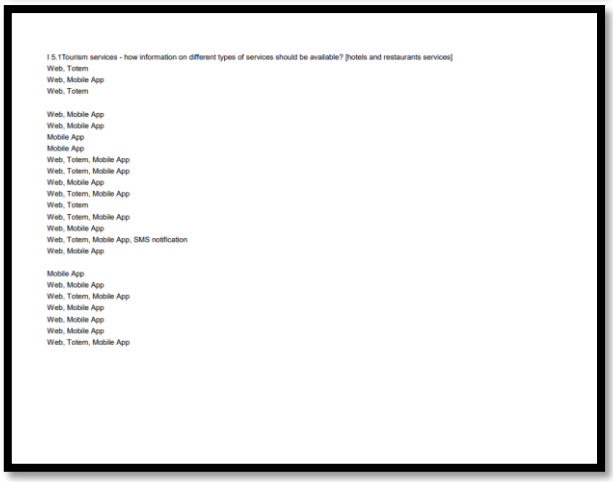
e-mail



I 5.1Tourism services - how information on different types of services should be available? [Points of interest - Touristic Sites]
Web, Totem, Mobile App
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Mobile App
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem
Web, Totem, Mobile App
Web, Mobile App
Web, Mobile App, SMS notification
Web

Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App, SMS notification



I 5.1Tourism services - how information on different types of services should be available? [hotels and restaurants services]
Web, Totem
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Mobile App
Mobile App
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App, SMS notification
Web, Mobile App

Mobile App
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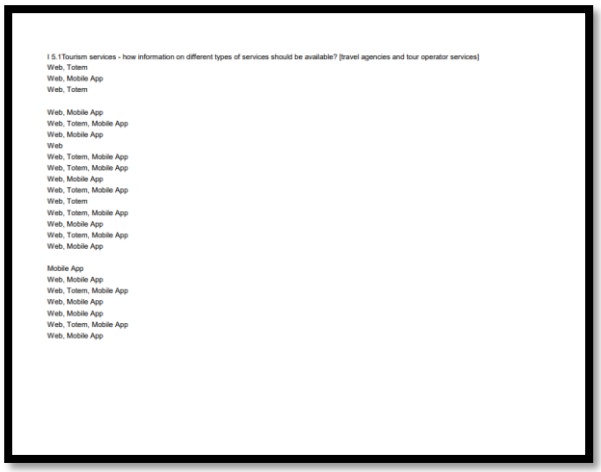
Web, Mobile App
Web, Totem, Mobile App


I 5.1Tourism services - how information on different types of services should be available? [travel agencies and tour operator services]
Web, Totem
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web
Web, Totem, Mobile App
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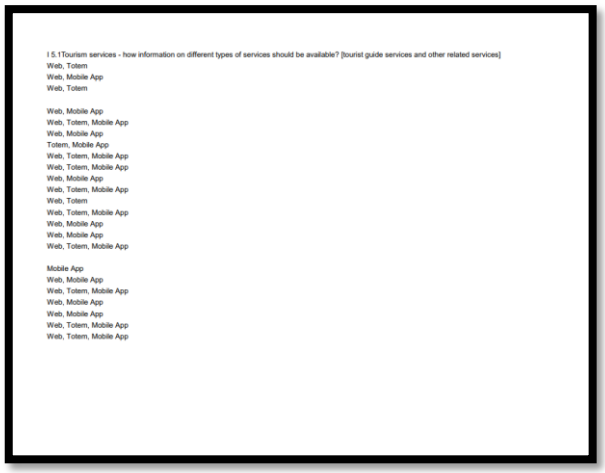
I 5.1Tourism services - how information on different types of services should be available? [tourist guide services and other related services]
Web, Totem
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Totem, Mobile App
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Totem, Mobile App
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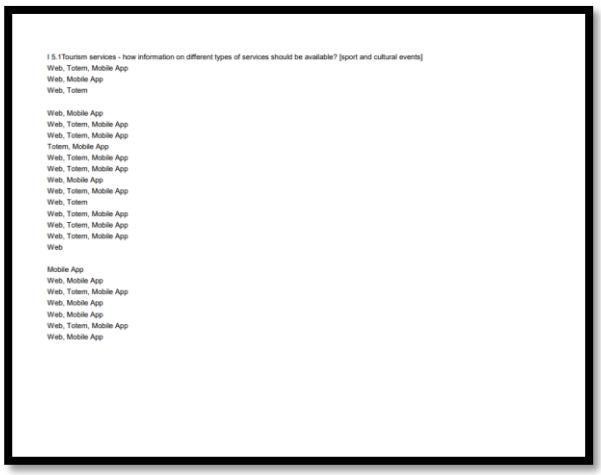
I 5.1Tourism services - how information on different types of services should be available? [sport and cultural events]
Web, Totem, Mobile App
Web, Mobile App
Web, Totem

Web, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Totem, Mobile App
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Web, Totem, Mobile App
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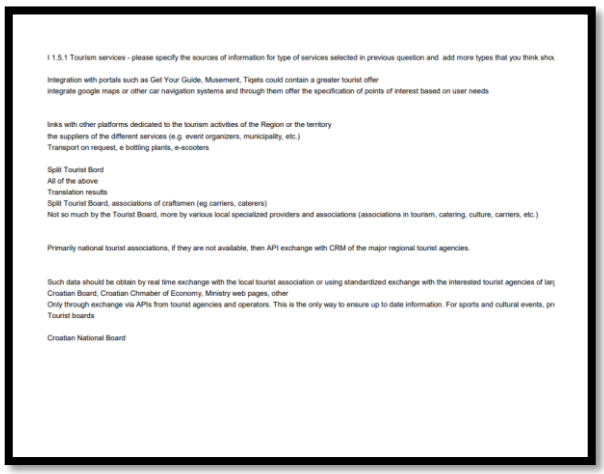
Web, Mobile App


I 1.5.1 Tourism services - please specify the sources of information for type of services selected in previous question and add more types that you think sho

Integration with portals such as Get Your Guide, Musement, Tigets could contain a greater tourist offer
integrate google maps or other car navigation systems and through them offer the specification of points of interest based on user needs

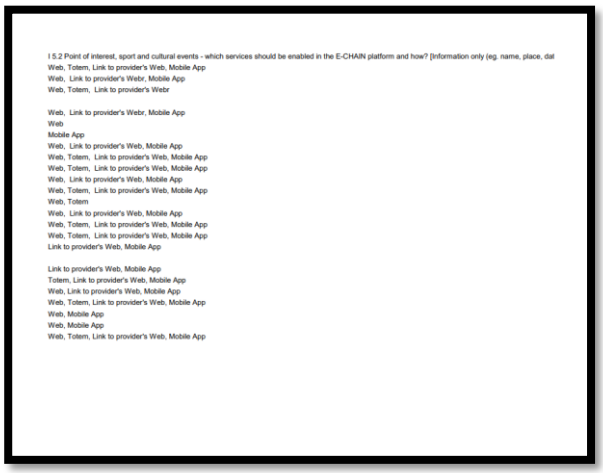
links with other platforms dedicated to the tourism activities of the Region or the territory
the suppliers of the different services (e.g. event organizers, municipality, etc.)
Transport on request, e bottling plants, e-scooters

Split Tourist Bord
All of the above
Translation results
Split Tourist Board, associations of craftsmen (eg carriers, caterers)
Not so much by the Tourist Board, more by various local specialized providers and associations (associations in tourism, catering, culture, carriers, etc.)

Primarily national tourist associations, if they are not available, then API exchange with CRM of the major regional tourist agencies.

Such data should be obtain by real time exchange with the local tourist association or using standardized exchange with the interested tourist agencies of lar
Croatian Board, Croatian Chmaber of Economy, Ministry web pages, other
Only through exchange via APIs from tourist agencies and operators. This is the only way to ensure up to date information. For sports and cultural events, pr
Tourist boards

Croatian National Board


I 5.2 Point of interest, sport and cultural events - which services should be enabled in the E-CHAIN platform and how? [Information only (eg. name, place, dat
Web, Totem, Link to provider's Web, Mobile App
Web, Link to provider's Webr, Mobile App
Web, Totem, Link to provider's Webr

Web, Link to provider's Webr, Mobile App
Web
Mobile App
Web, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Totem
Web, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Link to provider's Web, Mobile App

Link to provider's Web, Mobile App
Totem, Link to provider's Web, Mobile App
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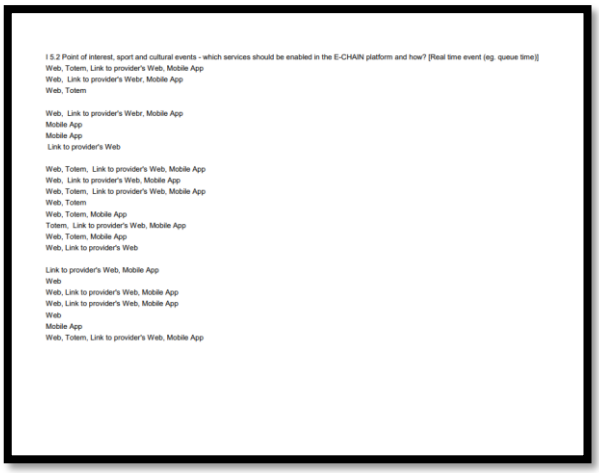
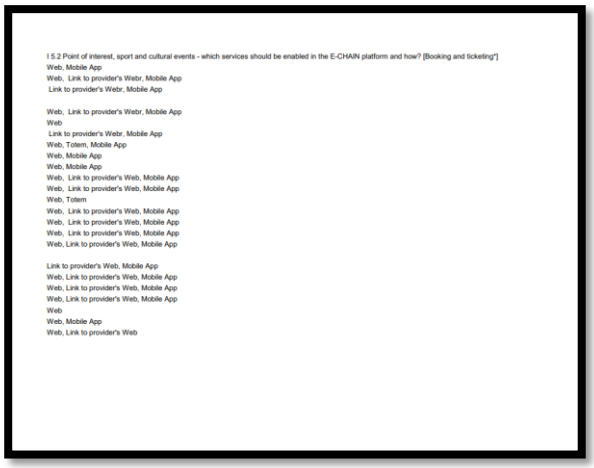
Web, Totem, Link to provider's Web, Mobile App

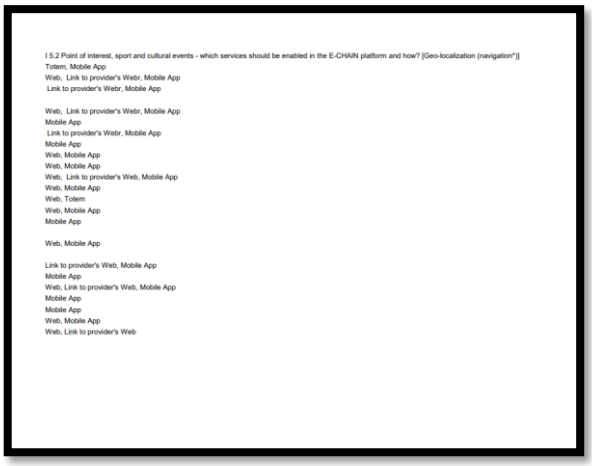

I 5.2 Point of interest, sport and cultural events - which services should be enabled in the E-CHAIN platform and how? [Real time event (eg. queue time)]
Web, Totem, Link to provider's Web, Mobile App
Web, Link to provider's Webr, Mobile App
Web, Totem

Web, Link to provider's Webr, Mobile App
Mobile App
Mobile App
Link to provider's Web

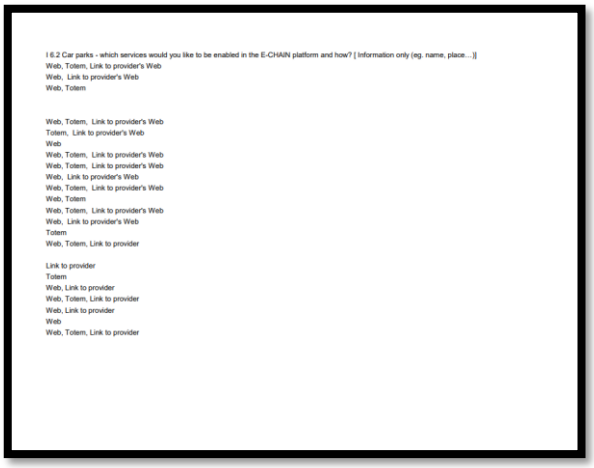
Web, Totem, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Totem, Link to provider's Web, Mobile App
Web, Totem
Web, Totem, Mobile App
Totem, Link to provider's Web, Mobile App
Web, Totem, Mobile App
Web, Link to provider's Web

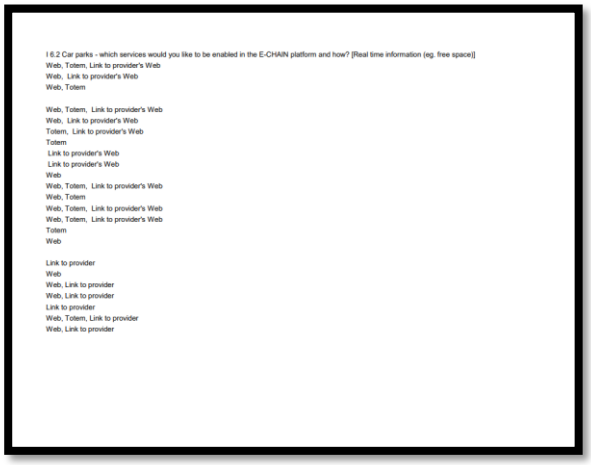
Link to provider's Web, Mobile App
Web
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web
Mobile App
Web, Totem, Link to provider's Web, Mobile App

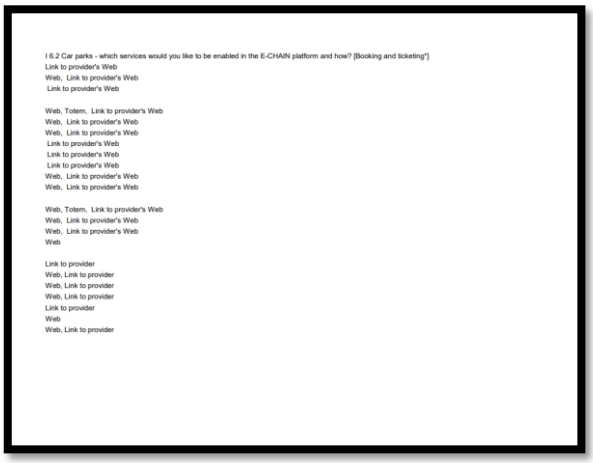

I 5.2 Point of interest, sport and cultural events - which services should be enabled in the E-CHAIN platform and how? [Booking and ticketing"]
Web, Mobile App
Web, Link to provider's Webr, Mobile App
Link to provider's Webr, Mobile App
Web, Link to provider's Webr, Mobile App
Web
Link to provider's Webr, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Totem
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Link to provider's Web, Mobile App
Web
Web, Mobile App
Web, Link to provider's Web


I 5.2 Point of interest, sport and cultural events - which services should be enabled in the E-CHAIN platform and how? [Geo-localization (navigation")]
Totem, Mobile App
Web, Link to provider's Webr, Mobile App
Link to provider's Webr, Mobile App
Web, Link to provider's Webr, Mobile App
Mobile App
Link to provider's Webr, Mobile App
Mobile App
Web, Mobile App
Web, Mobile App
Web, Link to provider's Web, Mobile App
Web, Mobile App
Web, Totem
Web, Mobile App
Mobile App
Web, Mobile App
Link to provider's Web, Mobile App
Mobile App
Web, Link to provider's Web, Mobile App
Mobile App
Mobile App
Web, Mobile App
Web, Link to provider's Web


I 6.1Car parks - specify parking services and what are the sources of information
Rijeka - Rijeka traffic, Rijeka plus
parking space reservation with possible integration to public transport if not equipped with a shuttle service included. It is necessary to communicate the date
number of free spaces, price, maximum parking duration, options for other parking spaces, etc.
places, availability of stalls, distance from the port area
distance - availability - cost
Split car parks
Split car parks
Split car parks
Free spaces, all parking lots
parking lots - open, street, public garages; source of information: website, mobile platform
information on the number of free parking spaces at certain locations - on billboards
all information about parking options is very important and should be easily accessible
Free spaces, all parking lots
Parking location, availability, pricing and type of parking (garage, open space behind the ramp, street parking). Guarded or not. API exchange with the parkin
Automatic exchange with the billing parking system, they usually allow such exchange. It would be important to share data about type of parking and availabil
Parking type (behind the ramp, garage parking, parking in the street), free parking and paid parking, payment possibilities (m-parking, ticket, credit card virtu
/


I 6.2 Car parks - which services would you like to be enabled in the E-CHAIN platform and how? [ Information only (eg. name, place...)]
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web, Totem
Web, Totem, Link to provider's Web
Totem, Link to provider's Web
Web
Web, Totem, Link to provider's Web
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web, Totem, Link to provider's Web
Web, Totem
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Totem
Web, Totem, Link to provider
Link to provider
Totem
Web, Link to provider
Web, Totem, Link to provider
Web, Link to provider
Web
Web, Totem, Link to provider


I 6.2 Car parks - which services would you like to be enabled in the E-CHAIN platform and how? [Real time information (eg. free space)]
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web, Totem
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Totem, Link to provider's Web
Totem
Link to provider's Web
Link to provider's Web
Web
Web, Totem, Link to provider's Web
Web, Totem
Web, Totem, Link to provider's Web
Web, Totem, Link to provider's Web
Totem
Web
Link to provider
Web
Web, Link to provider
Web, Link to provider
Link to provider
Web, Totem, Link to provider
Web, Link to provider


I 6.2 Car parks - which services would you like to be enabled in the E-CHAIN platform and how? [Booking and ticketing"]
Link to provider's Web
Web, Link to provider's Web
Link to provider's Web
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web, Link to provider's Web
Link to provider's Web
Link to provider's Web
Link to provider's Web
Web, Link to provider's Web
Web, Link to provider's Web
Web, Totem, Link to provider's Web
Web, Link to provider's Web
Web, Link to provider's Web
Web
Link to provider
Web, Link to provider
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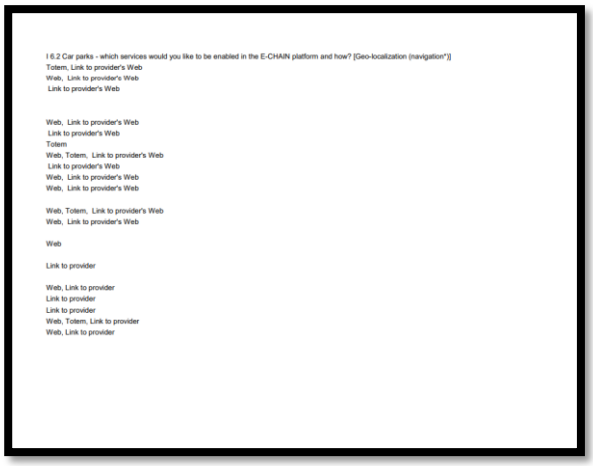
Web
Web, Link to provider


I 6.2 Car parks - which services would you like to be enabled in the E-CHAIN platform and how? [Geo-localization (navigation*)]
Totem, Link to provider's Web
Web, Link to provider's Web
Link to provider's Web
Web, Link to provider's Web
Link to provider's Web
Totem
Web, Totem, Link to provider's Web
Link to provider's Web
Web, Link to provider's Web
Web, Link to provider's Web
Web, Totem, Link to provider's Web
Web, Link to provider's Web
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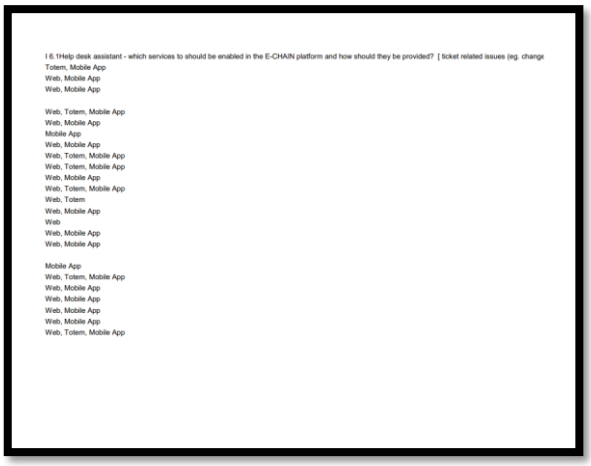
Link to provider
Web, Link to provider
Link to provider
Link to provider
Web, Totem, Link to provider
Web, Link to provider


I 6.1Help desk assistant - which services to should be enabled in the E-CHAIN platform and how should they be provided? [ ticket related issues (eg. change
Totem, Mobile App
Web, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem, Mobile App
Web, Totem
Web, Mobile App
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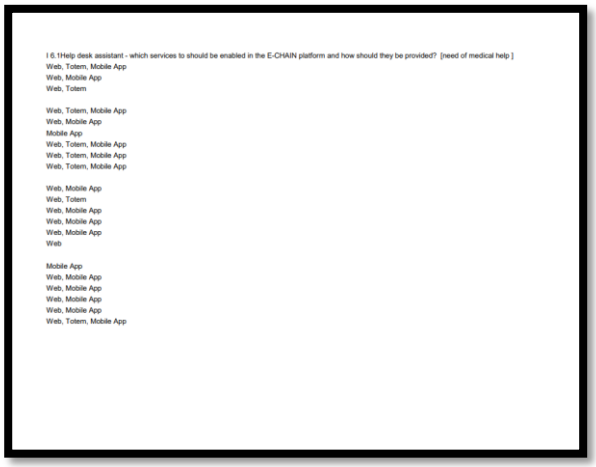
Web, Mobile App
Web, Mobile App
Web, Totem, Mobile App


I 6.1Help desk assistant - which services to should be enabled in the E-CHAIN platform and how should they be provided? [need of medical help ]
Web, Totem, Mobile App
Web, Mobile App
Web, Totem
Web, Totem, Mobile App
Web, Mobile App
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem
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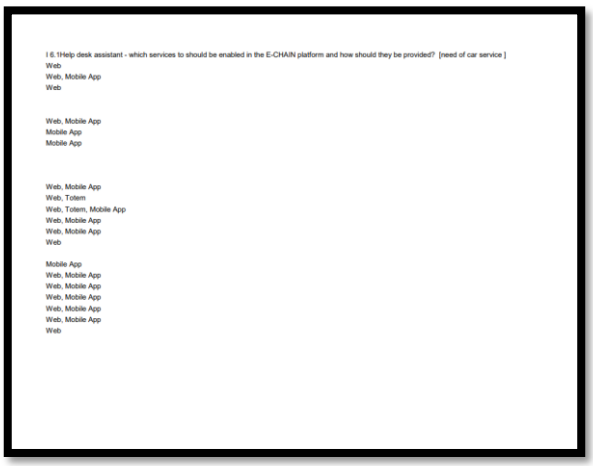
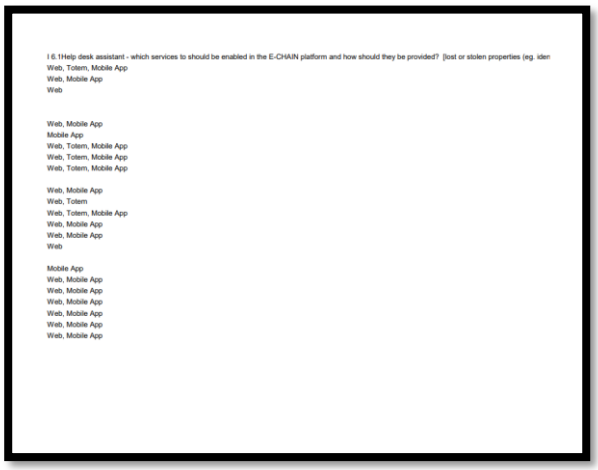
Web, Totem, Mobile App


I 6.1Help desk assistant - which services to should be enabled in the E-CHAIN platform and how should they be provided? [need of car service ]
Web
Web, Mobile App
Web
Web, Mobile App
Mobile App
Mobile App
Web, Mobile App
Web, Totem
Web, Totem, Mobile App
Web, Mobile App
Web, Mobile App
Web
Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web, Mobile App
Web


I 6.1Help desk assistant - which services to should be enabled in the E-CHAIN platform and how should they be provided? [lost or stolen properties (eg. iden
Web, Totem, Mobile App
Web, Mobile App
Web
Web, Mobile App
Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Totem, Mobile App
Web, Mobile App
Web, Totem
Web, Totem, Mobile App
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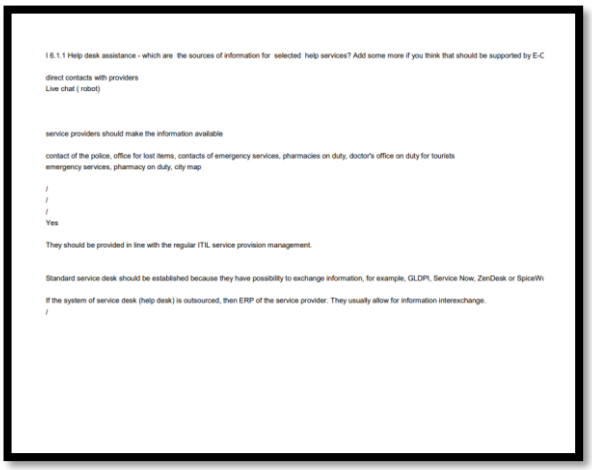
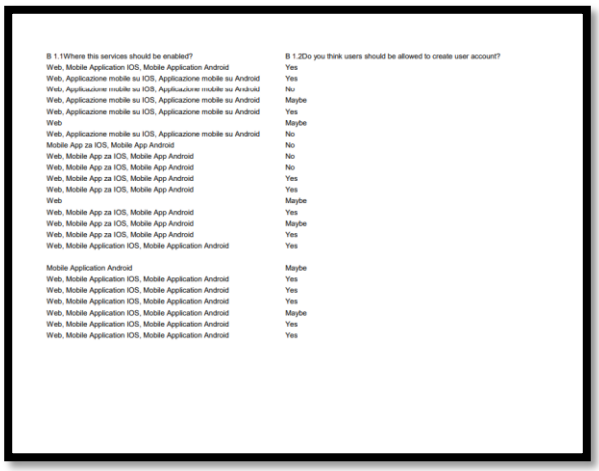
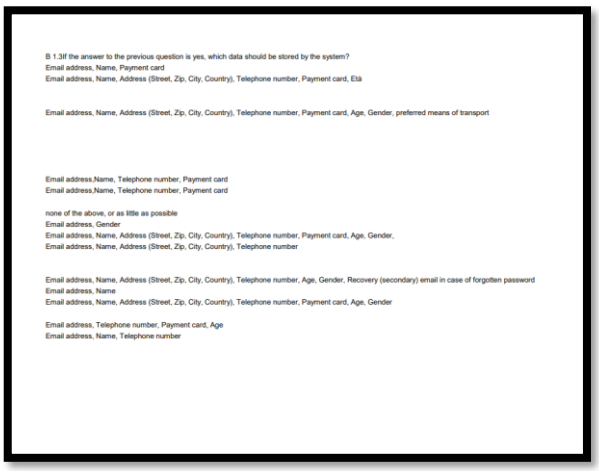

I 6.1.1 Help desk assistance - which are the sources of information for selected help services? Add some more if you think that should be supported by E-C
direct contacts with providers
Live chat ( robot)
service providers should make the information available
contact of the police, office for lost items, contacts of emergency services, pharmacies on duty, doctor's office on duty for tourists
emergency services, pharmacy on duty, city map
/
/
/
Yes
They should be provided in line with the regular ITIL service provision management.
Standard service desk should be established because they have possibility to exchange information, for example, GLDPI, Service Now, ZenDesk or SpiceW
If the system of service desk (help desk) is outsourced, then ERP of the service provider. They usually allow for information interexchange.
/

## 4.1.3. BOOKING AND TICKETING



| B 1.1Where this services should be enabled? | B 1.2Do you think users should be allowed to create user account? |
|---|---|
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | Yes |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | No |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | Maybe |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | Yes |
| Web | Maybe |
| Web, Applicazione mobile su IOS, Applicazione mobile su Android | No |
| Mobile App za IOS, Mobile App Android | No |
| Web, Mobile App za IOS, Mobile App Android | No |
| Web, Mobile App za IOS, Mobile App Android | No |
| Web, Mobile App za IOS, Mobile App Android | Yes |
| Web, Mobile App za IOS, Mobile App Android | Yes |
| Web | Maybe |
| Web, Mobile App za IOS, Mobile App Android | Yes |
| Web, Mobile App za IOS, Mobile App Android | Maybe |
| Web, Mobile App za IOS, Mobile App Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Mobile Application Android | Maybe |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Maybe |
| Web, Mobile Application IOS, Mobile Application Android | Yes |
| Web, Mobile Application IOS, Mobile Application Android | Yes |



B 1.3If the answer to the previous question is yes, which data should be stored by the system?
Email address, Name, Payment card
Email address, Name, Address (Street, Zip, City, Country), Telephone number, Payment card, Età

Email address, Name, Address (Street, Zip, City, Country), Telephone number, Payment card, Age, Gender, preferred means of transport

Email address,Name, Telephone number, Payment card
Email address,Name, Telephone number, Payment card

none of the above, or as little as possible
Email address, Gender
Email address, Name, Address (Street, Zip, City, Country), Telephone number, Payment card, Age, Gender,
Email address, Name, Address (Street, Zip, City, Country), Telephone number

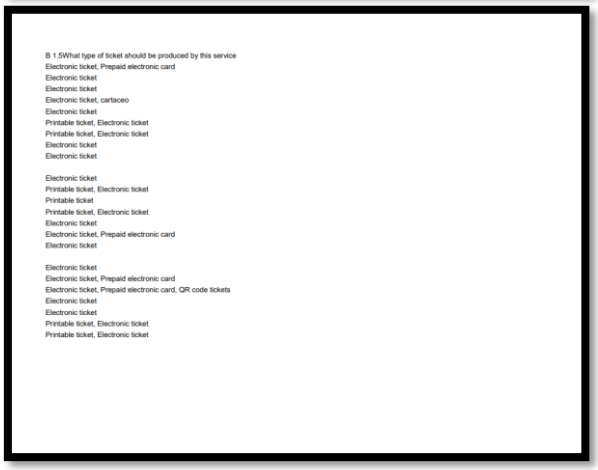
Email address, Name, Address (Street, Zip, City, Country), Telephone number, Age, Gender, Recovery (secondary) email in case of forgotten password
Email address, Name
Email address, Name, Address (Street, Zip, City, Country), Telephone number, Payment card, Age, Gender

Email address, Telephone number, Payment card, Age
Email address, Name, Telephone number

B 1.4Which payment options should be supported by the system?
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Credit card
Debit card, Credit card, Applicazione mobile di pagamento rapido (mobile payment system)
Debit card, Credit card, Addebito sul credito telefonico, Applicazione mobile di pagamento rapido (mobile payment system)
Debit card, Credit card, Applicazione mobile di pagamento rapido (mobile payment system)
Credit card
Debit card, Credit card
Credit card, Debit user's telecom account

Debit card, Credit card
Debit card, Credit card, Quick payment mobile application
Debit card, Credit card
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card

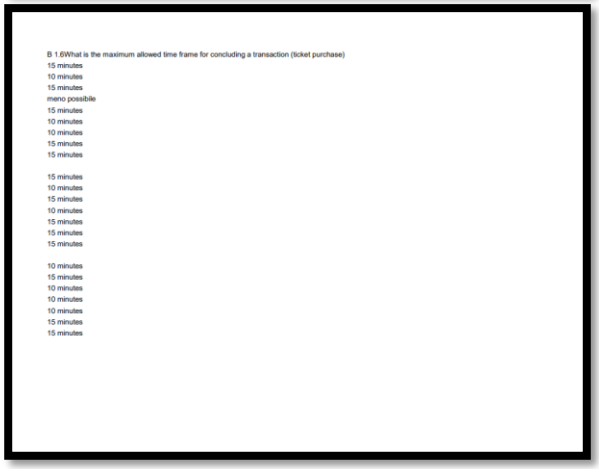
Debit card
Debit card, Credit card
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card
Credit card, Quick payment mobile application
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application
Debit card, Credit card, Debit user's telecom account, Quick payment mobile application



B 1.5What type of ticket should be produced by this service
Electronic ticket, Prepaid electronic card
Electronic ticket
Electronic ticket
Electronic ticket, cartaceo
Electronic ticket
Printable ticket, Electronic ticket
Printable ticket, Electronic ticket
Electronic ticket
Electronic ticket

Electronic ticket
Printable ticket, Electronic ticket
Printable ticket
Printable ticket, Electronic ticket
Electronic ticket
Electronic ticket, Prepaid electronic card
Electronic ticket

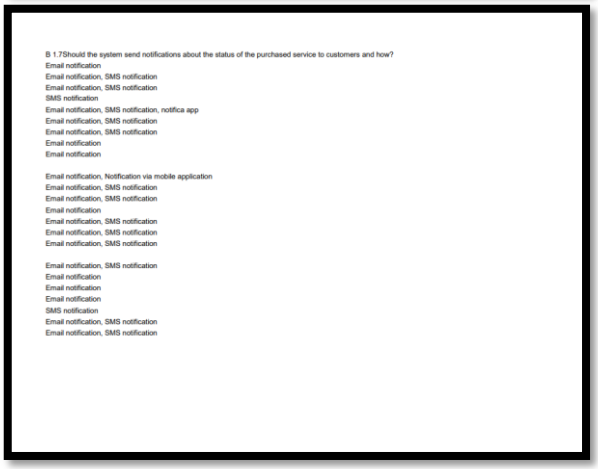
Electronic ticket
Electronic ticket, Prepaid electronic card
Electronic ticket, Prepaid electronic card, QR code tickets
Electronic ticket
Electronic ticket
Printable ticket, Electronic ticket
Printable ticket, Electronic ticket



B 1.6What is the maximum allowed time frame for concluding a transaction (ticket purchase)
15 minutes
10 minutes
15 minutes
meno possibile
15 minutes
10 minutes
10 minutes
15 minutes
15 minutes

15 minutes
10 minutes
15 minutes
10 minutes
15 minutes
15 minutes
15 minutes

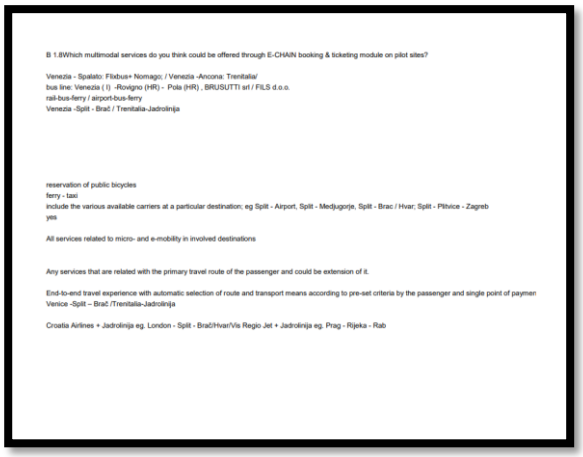
10 minutes
15 minutes
10 minutes
10 minutes
10 minutes
15 minutes
15 minutes



B 1.7Should the system send notifications about the status of the purchased service to customers and how?
Email notification
Email notification, SMS notification
Email notification, SMS notification
SMS notification
Email notification, SMS notification, notifica app
Email notification, SMS notification
Email notification, SMS notification
Email notification
Email notification

Email notification, Notification via mobile application
Email notification, SMS notification
Email notification, SMS notification
Email notification
Email notification, SMS notification
Email notification, SMS notification
Email notification, SMS notification

Email notification, SMS notification
Email notification
Email notification
Email notification
SMS notification
Email notification, SMS notification
Email notification, SMS notification



B 1.8Which multimodal services do you think could be offered through E-CHAIN booking & ticketing module on pilot sites?

Venezia - Spalato: Flixbus+ Nomago; / Venezia -Ancona: Trenitalia/
bus line: Venezia ( I) -Rovigno (HR) - Pola (HR) , BRIJUTTI srl / FILS d.o.o.
rail-bus-ferry / airport-bus-ferry
Venezia -Split - Brač / Trenitalia-Jadrolinija

reservation of public bicycles
ferry - taxi
include the various available carriers at a particular destination; eg Split - Airport, Split - Medjugorje, Split - Brac / Hvar; Split - Plitvice - Zagreb
yes

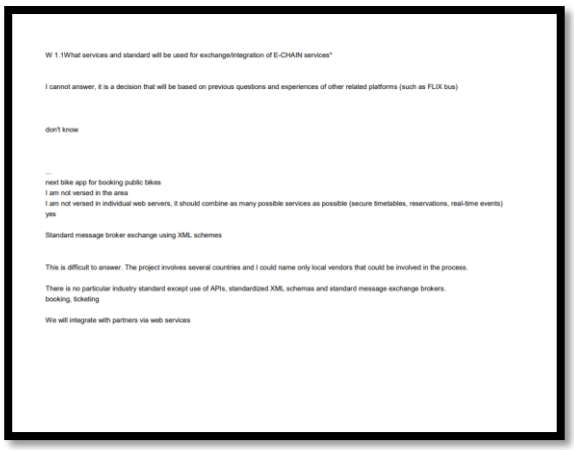
All services related to micro- and e-mobility in involved destinations

Any services that are related with the primary travel route of the passenger and could be extension of it.

End-to-end travel experience with automatic selection of route and transport means according to pre-set criteria by the passenger and single point of paymen
Venice -Split – Brač /Trenitalia-Jadrolinija

Croatia Airlines + Jadrolinija eg. London - Split - Brač/Hvar/Vis Regio Jet + Jadrolinija eg. Prag - Rijeka - Rab

## 4.1.4. WEB SERVICES



W 1.1What services and standard will be used for exchange/integration of E-CHAIN services"

I cannot answer, it is a decision that will be based on previous questions and experiences of other related platforms (such as FLIX bus)

don't know

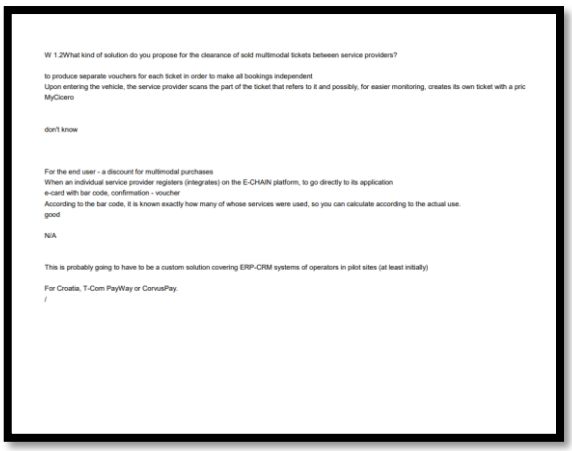
...
next bike app for booking public bikes
I am not versed in the area
I am not versed in individual web servers, it should combine as many possible services as possible (secure timetables, reservations, real-time events)
yes

Standard message broker exchange using XML schemes

This is difficult to answer. The project involves several countries and I could name only local vendors that could be involved in the process.

There is no particular industry standard except use of APIs, standardized XML schemas and standard message exchange brokers.
booking, ticketing

We will integrate with partners via web services



W 1.2What kind of solution do you propose for the clearance of sold multimodal tickets beteeen service providers?

to produce separate vouchers for each ticket in order to make all bookings independent
Upon entering the vehicle, the service provider scans the part of the ticket that refers to it and possibly, for easier monitoring, creates its own ticket with a pric
MyCicero

don't know

For the end user - a discount for multimodal purchases
When an individual service provider registers (integrates) on the E-CHAIN platform, to go directly to its application
e-card with bar code, confirmation - voucher
According to the bar code, it is known exactly how many of whose services were used, so you can calculate according to the actual use.
good

N/A

This is probably going to have to be a custom solution covering ERP-CRM systems of operators in pilot sites (at least initially)

For Croatia, T-Com PayWay or CorvusPay.
/

W 1.3What kind of solution do you propose for charging and allocating E-CHAIN service costs for e.g. multimodal tickets, parking tickets, event ticket?

Then for each provider receive monthly payment on the basis of the account statement of the sales net of fees
Percentage sales service (proposal 15%)

don't know

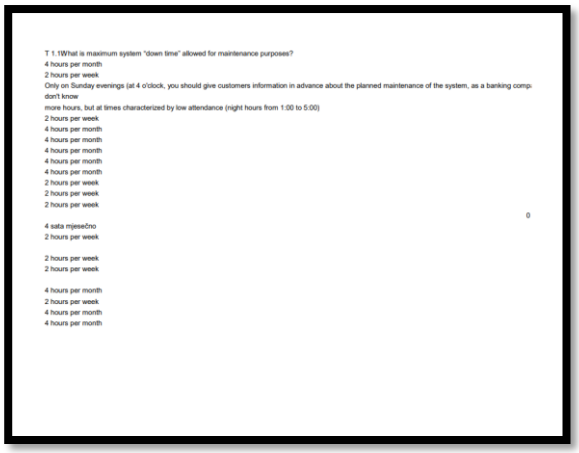
2% of the selling price
Price list / tariff integration, monthly share payment
each provider has its own price list of services, the solution should be developed by agreement between all participants (bidders within the platform)
There should be a possibility that each server can charge for multimodal tickets, and the billing goes according to actual usage. A calculation is proposed eve
As cheap as possible

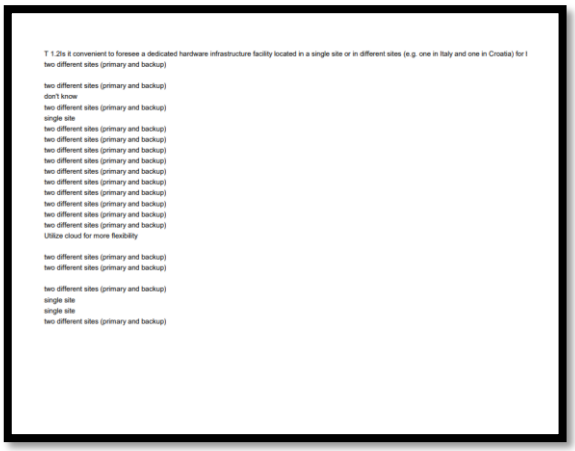
For the reasons of economical efficiency, it would be best that such a solution is operated by one stakeholder in the pilot sites, and a multiparty agreement i s

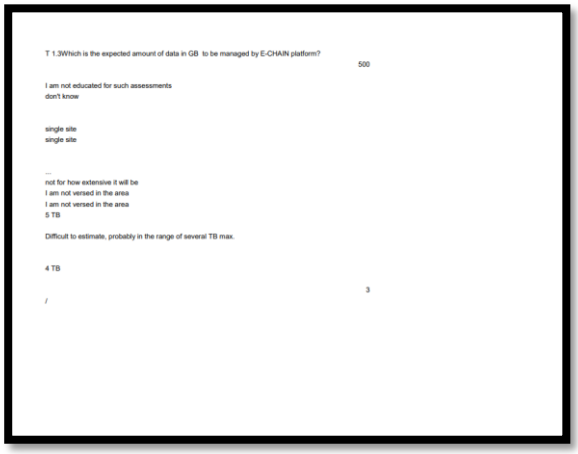
The same answer as in w1.2

Don't know of such a solution, never heard of it. Maybe it has to be developed according to custom functional specification.
/

## 4.2 TECHNICAL REQUIREMENTS



# 5. REQUIREMENT RESULTS

## 5.1 FUNCTIONAL REQUIREMENTS

### 5.1.1 E-CHAIN GENERAL FUNCTIONAL REQUIREMENTS

General functional requirements are the part of the interview which requires participants (stakeholders) to give their personal inputs on the regarding the most suitable modules for their own personal use, in which part of the process they would want to be included, what are the language requirements for the usage of E-CHAIN platform and its user and administrative interface.

First question required stakeholders to express their level of interest in the use of E-CHAIN platform modules. Main categories consist of:

1. Multimodal travel solutions (searching and booking)
2. Port multimodal infomobility
3. Data management
4. Touristic marketing

Graph representing this and the following answers accurately depicts even a multitude of chosen answers to give a clear overview of the stakeholder's needs.

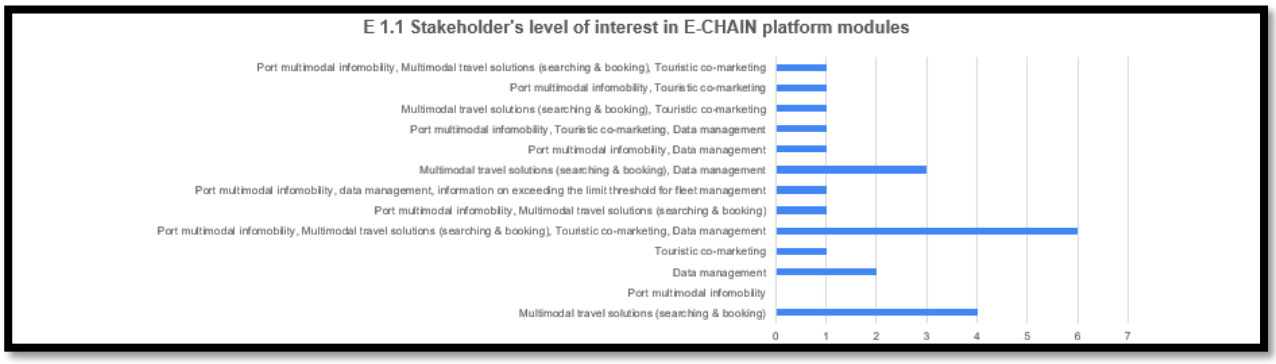



**Figure 4. Stakeholder's level of interest in E-CHAIN platform modules**

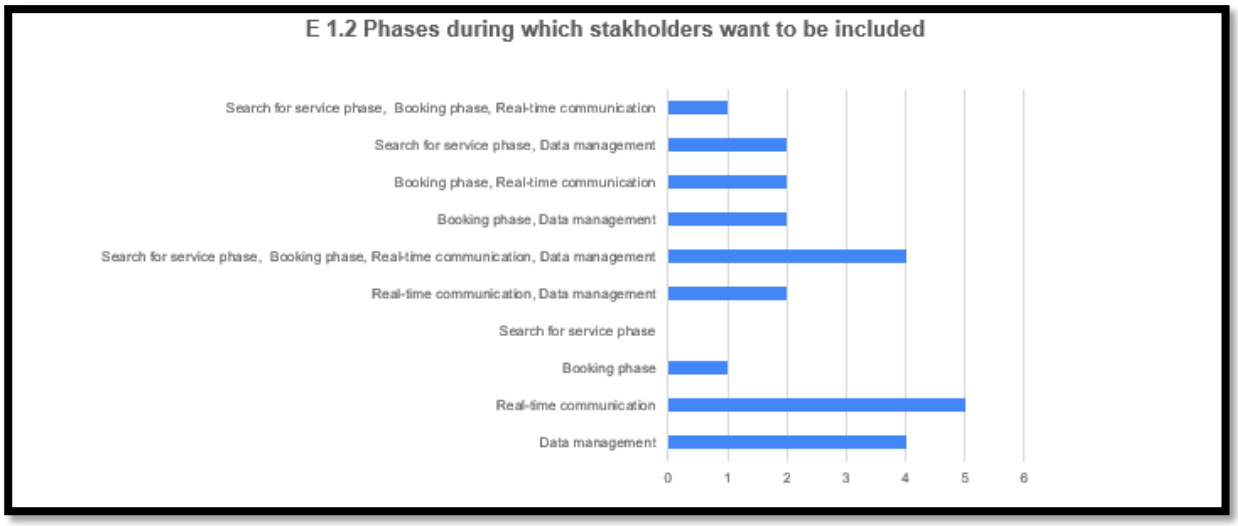



**Figure 5. Phases during which stakeholders want to be included**

Second question referred to the stakeholder's statement regarding the first question and whether they gave an affirmative answer to one (or more) of the modules, follow-up question requires stakeholder's input in which phase would they like to be included in on the E-CHAIN platform.

Following question requested feedback whether the English, Italian and Croatian language on E-CHAIN user interface will suffice. Stakeholders were pretty unanimous regarding the eventual need to incorporate German as a fourth language as the German tourists present roughly 30% of overall tourists that stayed overnight in Croatia (2020.) and about 23.7% in 2019. Next language that would have the potential to be implemented in the platform would have to be Spanish which is in second place.

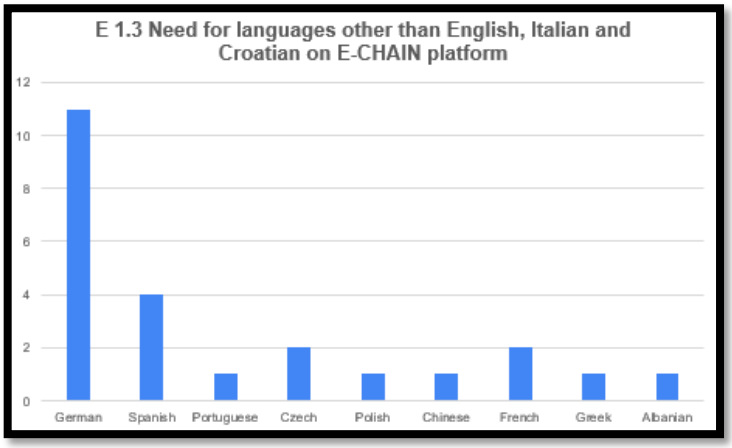



**Figure 6. User interface languages other than English, Italian and Croatian**

Final E-CHAIN general functional requirements question referred to the preferred language/languages for the administrative interface of the E-CHAIN platform. Results came out quite straightforward, either all three languages would be used, which potentially complicates things as everything done on the platform has to be tri-lateral or probably the simpler solution would have to be use of the most internationally accepted language.

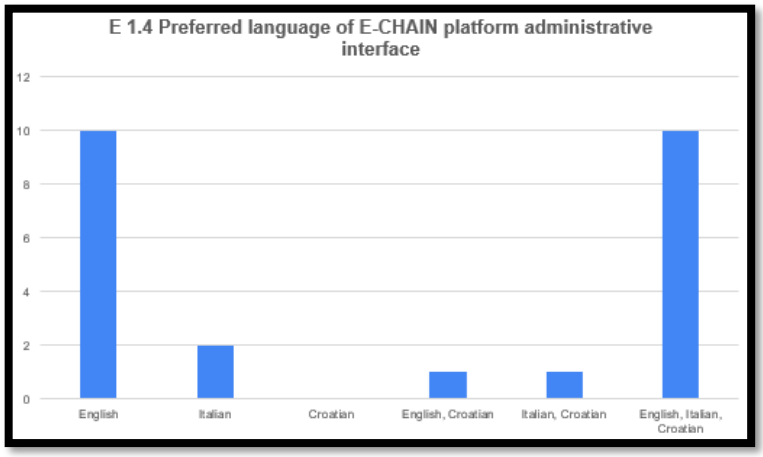



**Figure 7. Preferred language/s for the administrative interface of the E-CHAIN platform**

### 5.1.2 FUNCTIONAL REQUIREMENTS FOR INFO-MOBILITY

Second subchapter of the functional requirements is referring to the part about info-mobility, or to be more precise, information regarding any kind of mobility related services. Info-mobility subchapter consists of stakeholder's inputs regarding the contents (timetables, travel solutions, real-time events, points of interest and tourism services, car parking spaces availability and help desk assistant) that should be supported by the port multimodal info-mobility module and on which platform. Platforms that were suggested in the questionnaires encompass Web, Totem and Mobile App as a potential use case.

First part of the question referred to the displaying of the timetable content which represents a pretty significant part of passengers travelling activities as he often has to harmonize few events to make the most out of the trip. Answers were quite straightforward as the most stakeholders agreed that this kind of information has to be made available on all three platforms.

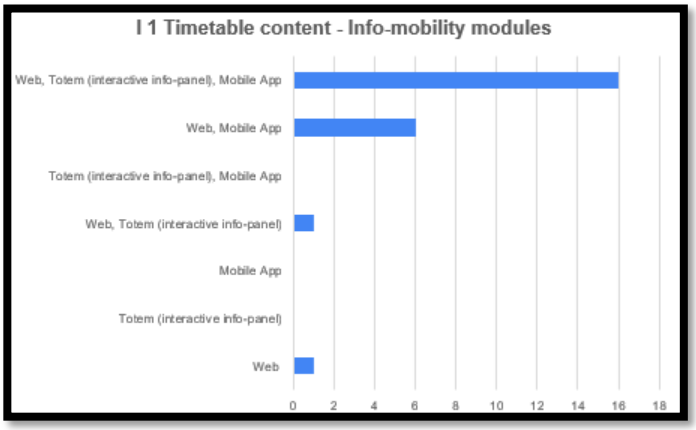



**Figure 8. Timetable content – Info-mobility modules**

While providing travel solutions content, answers remain pretty logical as the multitude of sources have to be enabled so the information reaches the maximum of targeted audience

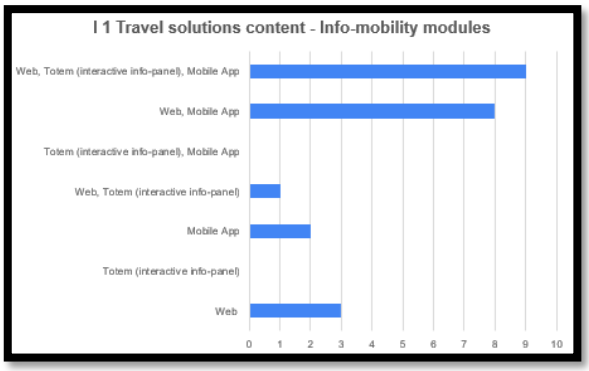



**Figure 9. Travel solutions content – Info-mobility modules**

Real-time events present time sensitive information which in some cases present deal making/breaking decisions, therefore any possible displaying platform should be enabled. As the most business today is done via online sources, big number of stakeholders think that enabling this kind of information on Mobile App could be beneficial.

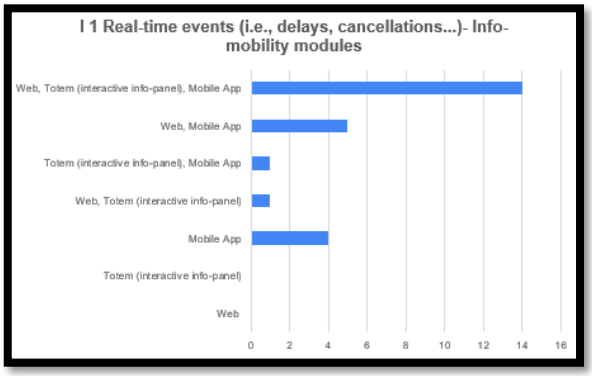



**Figure 10. Real-time events – Info-mobility modules**

Points of interest and similar sightseeing locations definitely would have to prevail on “to-go” devices. as the totems are fixed structures. On the other hand, they could present a modernized way of displaying information directly on the sites. Interactive aspect brings the new level of information providing to visitors.

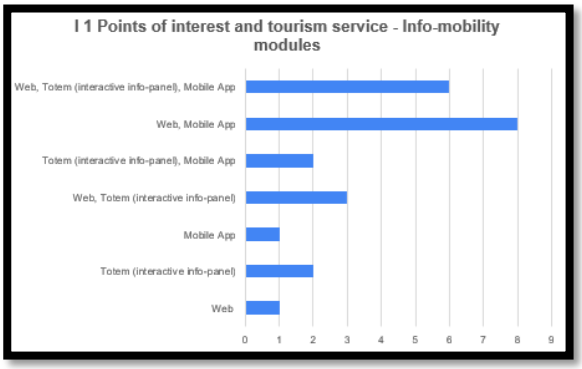



**Figure 11. Points of interest and tourism service – Info-mobility modules**

When talking about car parking spaces and their (un)availability, especially during the peak of the tourist season, according to stakeholders and their views on it, mobile app would come in most handy. Mobile devices and the availability of car parking spaces can definitely facilitate the tourist's accommodation period.

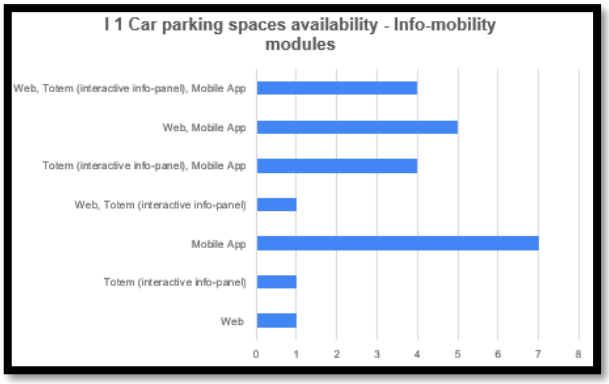



**Figure 12. Car parking spaces availability – Info-mobility modules**

Help desk assistant would definitely show its usefulness on web and mobile apps as the help usually is needed somewhere on the go and where decisions have to be made quicker.

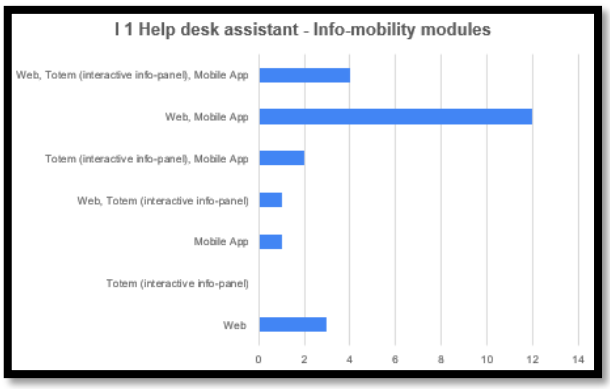



**Figure 13. Help desk assistant – Info-mobility modules**

**Recommendations**

Apart from the predefined answers, stakeholders were given an option to suggest their own ideas regarding the content that should potentially be a part of E-CHAIN platform:

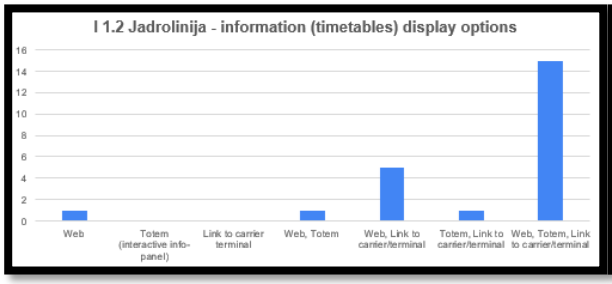
- quantity of emissions produced for one shift
- information about changes to the service that often occurs e.g., extended service until ... etc.
- transport on request, electric chargers for vehicles
- cultural and sporting events and gastronomy
- basic information about each city, the nearest next city
- air traffic
- links to traffic situation on roads / national auto club
- nautical maritime situation in the vicinity of the passenger port
- continuations of travel that are possible by rail (partial timetable)

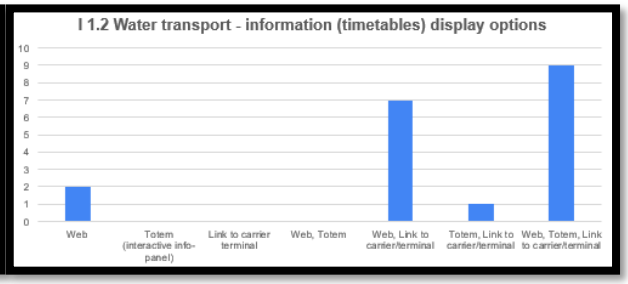
Following question required stakeholders to check the boxes which apply regarding the timetables and their means of displaying that information. The “check” table looked like the table below.

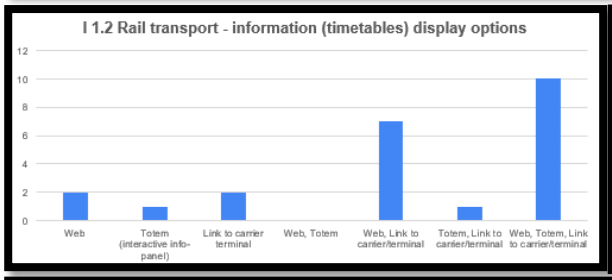
| | Web | Totem | Link to carrier/terminal |
|---|---|---|---|
| Jadrolinija | ☐ | ☐ | ☐ |
| Water transport | ☐ | ☐ | ☐ |
| Rail transport | ☐ | ☐ | ☐ |
| Bus transport | ☐ | ☐ | ☐ |
| Air transport | ☐ | ☐ | ☐ |

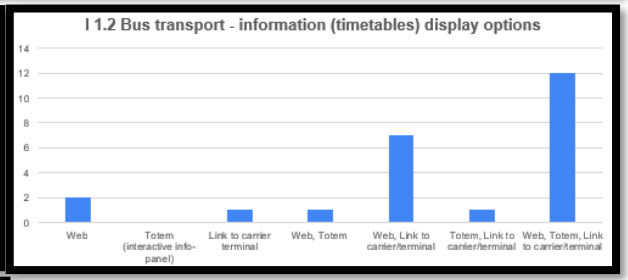
**Table 1. Screenshot of the table from the questionnaire**

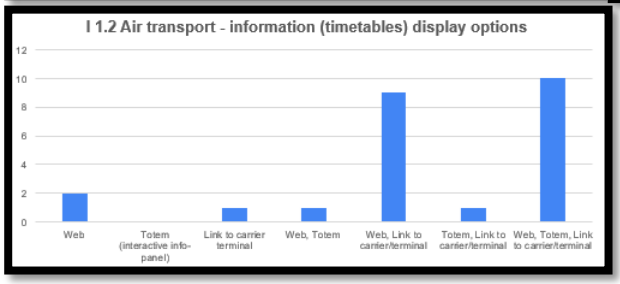
Results coming from the table displayed above were pretty much expected. In all the categories the most represented answer was all three mediums of display together. Second place went in all categories to the pair Web, Link to carrier and terminal just in different ratios. The answers according to the categories are listed below.



**I 1.2.1 Please provide additional information on selected timetables (e.g., Train terminal – Ancona), source of information and add more timetables if appropriate:**

- Krk Airport - Jadrolinija, Rijeka bus station, Rijeka rail station
- Venice train terminal - connections via IT with Venice Bus Station, Venice Airport, Taxi and shared Travel, …
- links to third destinations (e.g., Split - Medjugorje, Split - Plitvice Lakes)
- air traffic - Rijeka
- relevant timetable for the first "hop" of the travel involving E-CHAIN pilot sites
- most traffic operators including rail, water, road and air can share their timetable using standard API and message exchange through message broker (XML data schema exchange

**I.3.1 Travel solutions – Expectations from the Travel Solutions Module affecting resource optimization?**

- mobility, CO2 reduction, timetables optimisation
- better programming can be made on the means used on the basis of the most requested times
- resource optimization is expected to connect carriers and capacities through partnership agreements, better solutions for filling capacities will bring more money for investments in better (electric) vehicles, etc.
- give greater travel flexibility and the possibility for the traveller to choose alternative means and routes
- better use of information
- faster arrival to the destination and selection of the optimal route
- better recognition of when to need to strengthen timetables, introduce other new solutions to reduce congestion
- less crowds, more mobility, passengers will make decisions based on better information, will ask for less information by other routes
- travel time reduction, cost optimization and thus the price of services, increasing the reliability and quality of travel
- they should decrease time spent to organize travel. Also, additional discount could be offered if a bundle of tickets for various forms of transport is purchased.
- if properly executed it could be mildly attractive for the passenger using multimodal passenger means and could slightly increase use of means of maritime transport

- if the question is related to railway passenger operators, I would say in a negligible way, because the system is not a part of internal IT systems of operators, there is no feedback to the operators' systems.
- to provide more information on one service to the passengers.

**I 1.3.2 Travel solutions - data which is needed to optimize resources and who owns it?**

- Jadrolinija, Arriva timetables, Rail timetables
- traffic analysis of the route, analysis of traffic loads, alternative modes of transport
- loads of traffic and road or service interruptions
- transport service providers and the Harbour Master's Office
- Google and direct input of additional route information
- number of passengers, number of vehicles, number of flights, road loads; data are owned by individual operators / service servers, HAK (Croatian Auto House)
- data on the state of congestion in certain directions; carrier association
- alternative modes of transport on the route, traffic routes, connection hoops (bus - railway)
- prices, shortest route in terms of distance covered, optimal route, cheapest route, scenic route with POI, one or two alternative routes for each selection
- probably a detailed analysis of timetables should be done using operational research tools and implement it as a part of timetable tool on totems, web and mobile application in order to enable usage of different search criteria for the end user and according to different search requirements
- I would say timetables, but also sensitive financial data that most operators probably will not share. For example, some variable prices depend on volume of passengers,
- name of the route
- name of the route - source of information
- every participant in the project has its own source of data.

According to the questionnaire, real-time information module gained some traction among the stakeholder because apart from the checking the part with predefined answers on which kind of information would they want to be informed on, answers were written in a free form stating lots of possible events that should be definitely duly and timely informed on. Stakeholders were also kindly asked to state the sources for their free-form written answers.

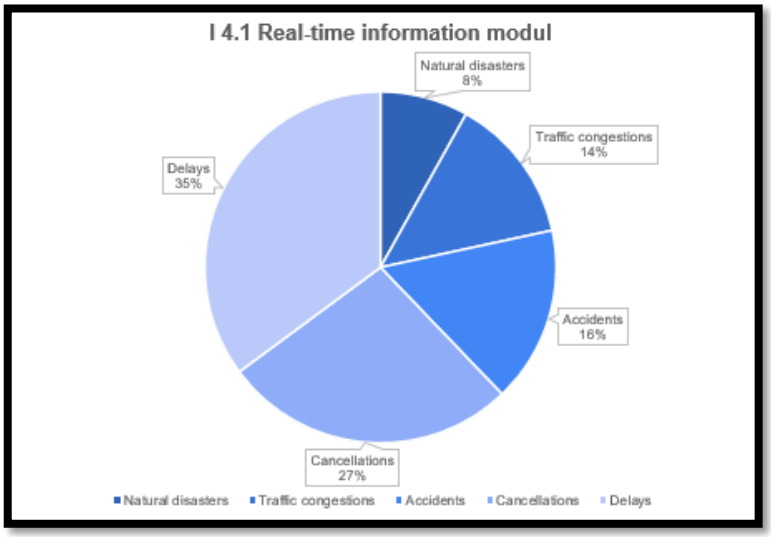



**Figure 14. Information categories inside real-time information module**

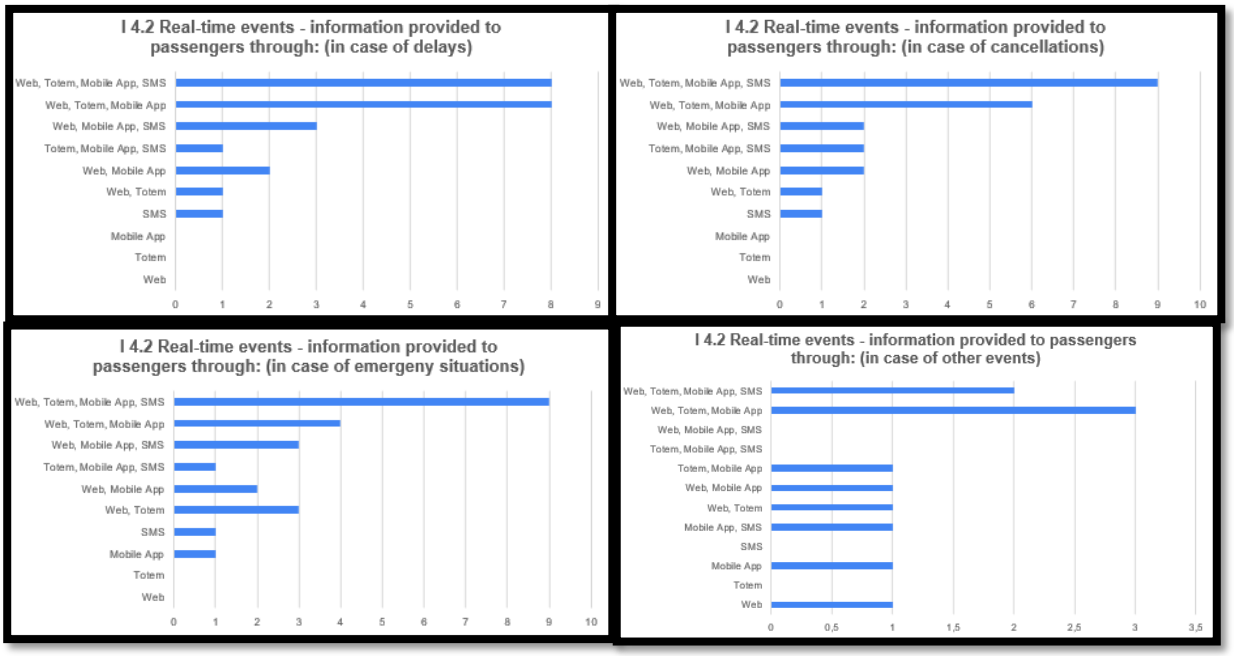
Some of the answers encompassed:

- closing of the snow passes in the lines for the Dolomites provided by the contacts on site;
- delays in embarkation / disembarkation due to fog that does not allow ships to dock, information provided by the port authority.
- delays, cancellations and possible solutions (such as plane that gives in flight situation for connections) - Public sources
- delays, traffic congestion information and offers of alternative routes - data sources are individual carriers
- user logins, information from the system admin - connection to the automatic systems of the transport service provider
- road traffic congestion, airport congestion, delays, cancellations, unforeseen events, other
- emergency data, cancellations and delays but only those that are relevant for the travel itinerary of the particular passenger
- natural disaster and accidents, if covid situation will persist, fresh information about covid requirements, situation and testing in areas where the passengers is travelling to (or through).

Provided with the table below, stakeholders were questioned to state their opinions regarding the information providing in the real-time events that are possibly occurring. Stakeholders needed to state their opinions regarding the categories of delays, cancellations, emergency situations and other events that are fairly time sensitive and the ways they would like for passengers to be informed on them.

| | Web | Totem | Mobile App | SMS |
|---|---|---|---|---|
| Delays | ☐ | ☐ | ☐ | ☐ |
| Cancellations | ☐ | ☐ | ☐ | ☐ |
| Emergency situations (e.g., natural disasters, severe weather conditions, accidents…) | ☐ | ☐ | ☐ | ☐ |
| Other | ☐ | ☐ | ☐ | ☐ |

**Table 2. Real-time events – ways of information providing towards passengers**




Answers provided on the “check all that apply” table were more than obvious representing the will of stakeholders that the information regarding any type of real-time events needed to be displayed across the multitude of information providing platforms. In reality, when sudden events occur, quantity beats quality by miles purely because of the reach towards general public and whom it may concern the most.

**I 4.3 Real time events - What type of additional information should the system provide to passengers in the case of an event (e.g., a delay – nearby points of interest) and which are sources of information?**

- estimate of the delay in reaching the chosen location through integration with *waze* or google maps; the widest possible geolocation of experiences that start near the user's localization point
- it is interesting to have options (especially for tourists who do not know the destination)
- replacement services, possible overnight refreshment points
- alternative transport solutions
- tourist board offices and info points
- nearby places of interest as information to have at the Tourist Board of Split, but categorized data is needed, e.g., sports, theatres, gastronomy - Split Tourist Board, Tourist Board, Croatian Tourist Board
- Tourist board - information on attractions in the area where the traveller is located, on restaurants
- information on how to make good use of waiting time - for example, to be able to log in to the platform and watch a film about the city in which they are located, about nearby places, about the destination in general, current events in culture, sports
- only information that is relevant for the passenger, or could be relevant in a general scenario (for example, pandemic). Sources of information should be services like emergency 112, and other relevant national sources.
- only those POI for whose it is realistic that they could be visited in such a limited time. Also, possibility of overnight lodging in case that delay is overnight; links to local restaurants and events.
- information about next departure, costs, stops and all relevat info. Sources: web, Mobile App
- especially delay in those transport means that lead to the pilot port (or other port of interest).
- points of interest
- cancellation policy, alternative transportation

**"I 4.4 What kind of real-time information from customers you need and how do you get it?"**

- estimated delay
- this can be solved as a package with IT solutions (ability to modify and monitor service situations)
- as much data as possible
- no information needed except maybe for basic statistics purpose
- for us by users are not relevant real-time dana
- communication by email (pre-ordering) or telephone and mobile application; delay information
- our service only allows you to book a ticket per day, and not according to the exact time frame so that the passenger does not have to worry in case of flight delay because another bus is available to him later
- if the passenger is late for the next "leg" of the travel, in that case, information could be forwarded (passed on) to the next stakeholders in line
- geolocation information, in case that the customer allows it. Advantages of surrendering geographical coordinates should be communicated in front to the passengers and data processed in line with the GDPR.
- position could be beneficial, if the passenger would allow it.
- e-mail

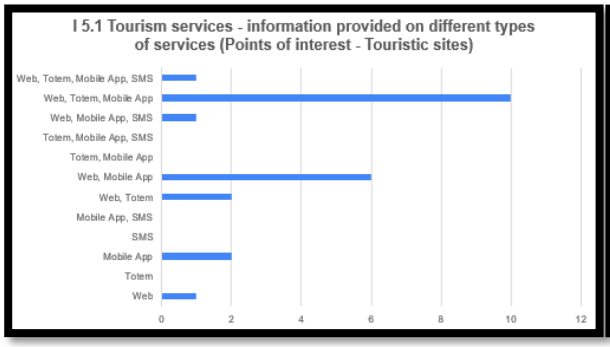
Tourism plays an important role for nearly all WTO members, especially in terms of its contribution to employment, GDP, and the generation of foreign exchange. Tourism-related services are typically labour-intensive, with numerous links to other major segments of the economy, such as transport, cultural and creative services, or financial and insurance services. Tourism and travel-related services include services provided by hotels and restaurants (including catering), travel agencies and tour operator services, tourist guide services and other related services.

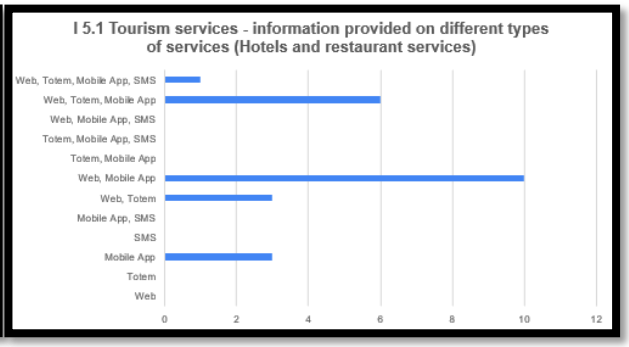
A crucial aspect of trade in tourism services is the cross-border movement of consumers. This permits a variety of workers, including those in remote areas, to become services exporters — for instance, by guiding tourists, performing in local events, or working in tourist accommodation. While digitalisation offers great potential for many aspects of tourism services, the sector continues to depend highly on the cross-border movement of both customers and employees, and remains strongly linked to transport services.

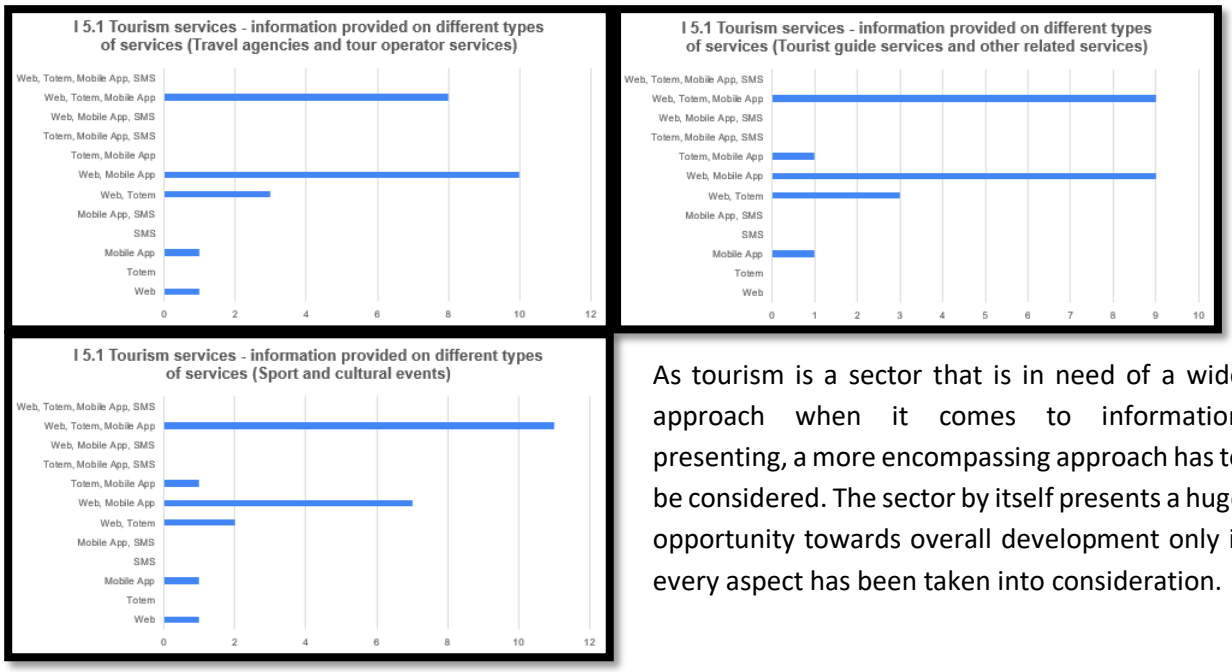
Attached table below was presented to stakeholders during the filling out of the questionnaire. Table consists of tourism related categories (POI, HoReCa services, Travel agencies and tour operators, touristic guiding services, sport and cultural events) and ways information should be provided towards end users

| | Web | Totem | Mobile App | SMS notification |
|---|---|---|---|---|
| POI – Touristic sites | ☐ | ☐ | ☐ | ☐ |
| Hotels and restaurant services | ☐ | ☐ | ☐ | ☐ |
| Travel agencies and tour operator services | ☐ | ☐ | ☐ | ☐ |
| Tourist guide services and other related services | ☐ | ☐ | ☐ | ☐ |
| Sport and cultural events | ☐ | ☐ | ☐ | ☐ |

**Table 3. Tourism services – information providing mediums**






As tourism is a sector that is in need of a wide approach when it comes to information presenting, a more encompassing approach has to be considered. The sector by itself presents a huge opportunity towards overall development only if every aspect has been taken into consideration.

**I 1.5.1 Tourism services - please specify the sources of information for type of services selected in previous question and add more types that you think should be supported by the E-CHAIN platform.**

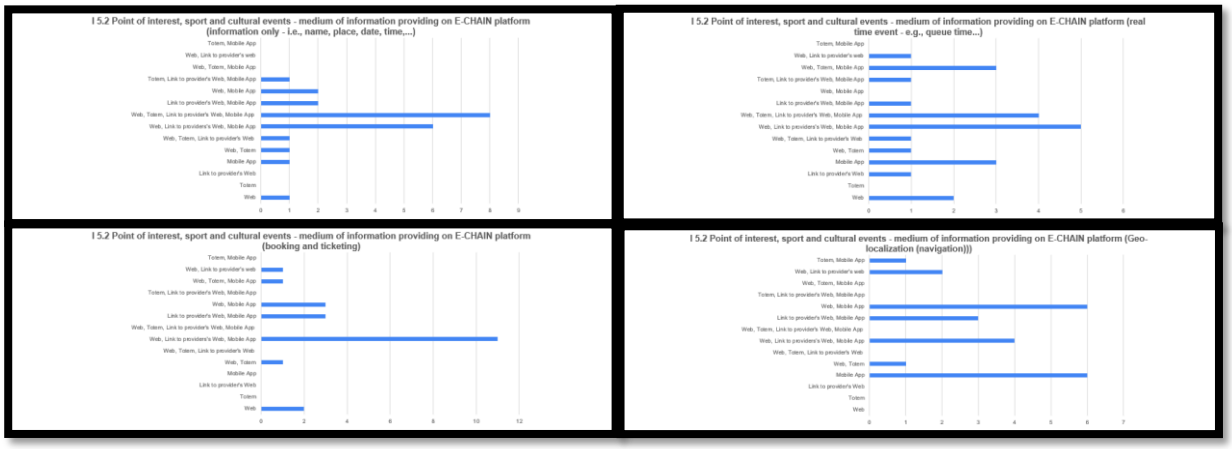
- integration with portals such as Get Your Guide, Musement, Tiqets could contain a greater tourist offer
- integrating google maps or other car navigation systems and through them offer the specification of points of interest based on user needs
- links with other platforms dedicated to the tourism activities of the Region or the territory
- the suppliers of the different services (e.g., event organizers, municipality, etc.)
- transport on request, e bottling plants, e-scooters
- Split Tourist Bord
- the Tourist Board of the City of Split, various associations of hoteliers, caterers, other service providers, HGK
- Split Tourist Board, associations of craftsmen (e.g., carriers, caterers)
- not so much by the Tourist Board, more by various local specialized providers and associations (associations in tourism, catering, culture, carriers, etc.)
- primarily national tourist associations, if they are not available, then API exchange with CRM of the major regional tourist agencies.

- such data should be obtained by real time exchange with the local tourist association or using standardized exchange with the interested tourist agencies of larger influence in the area.
- Croatian Board, Croatian Chamber of Economy, Ministry web pages, other
- only through exchange via APIs from tourist agencies and operators. This is the only way to ensure up to date information. For sports and cultural events, probably, it would have to be manually entered as automatic exchange would not be possible, there is no centralized repository of such events.
- tourist boards
- Croatian National Board

A point of interest or simply as POI represents a common expression used for pinpointing or indicating a specific location or an attraction that might be of interest to visitors. Coupled with sport and cultural events, this category was intended for stakeholders to express their opinions or maybe concerns regarding the information providing towards end users (passengers) on what would their preferred medium of accessing information be. Categories encompassed general information, real-time events, booking and ticketing as well as the geo-localization aspect of the events. Underneath this text, table from the questionnaire is attached as a way of representing how was this aspect presented to stakeholders.

| | Web | Totem | Link to provider's Web | Mobile application |
|---|---|---|---|---|
| Information only (e.g., name, place, date, time…) | ☐ | ☐ | ☐ | ☐ |
| Real-time events (e.g., queue time) | ☐ | ☐ | ☐ | ☐ |
| Booking and ticketing | ☐ | ☐ | ☐ | ☐ |
| Geo-localization (navigation) | ☐ | ☐ | ☐ | ☐ |

**Table 4. POI, sport and cultural events and mediums of information sharing**




Similar to previous answers, the most represented answer consisted of applying information sharing across all the platforms available as it is the easiest way to reach the biggest number of passengers and visitors in general. Distinct pattern was noticed, when some kind of navigation or geo-localization is needed, mobile apps are far ahead as they are a platform which everyone can access in any point of time, and if it is coupled with real time updates and regular maintenance of the systems, can serve as an overall most practical medium for accessing information. Totem, as a most visible and noticeable platform serves its purpose greatly, but its static nature presents its biggest deficiency.

A parking lot or car park, also known as a car lot, is a cleared area that is intended for parking vehicles. Usually, the term refers to a dedicated area that has been provided with a durable or semi-durable surface. It represents a dedicated area, where passenger can leave their vehicles in according to country's regulations without worrying that they left them on someone else's property. A certain fee is always charged as the commodity of having your vehicle in the vicinity present a certain luxury.

**"I 6.1 Car parks - specify parking services and what are the sources of information "**

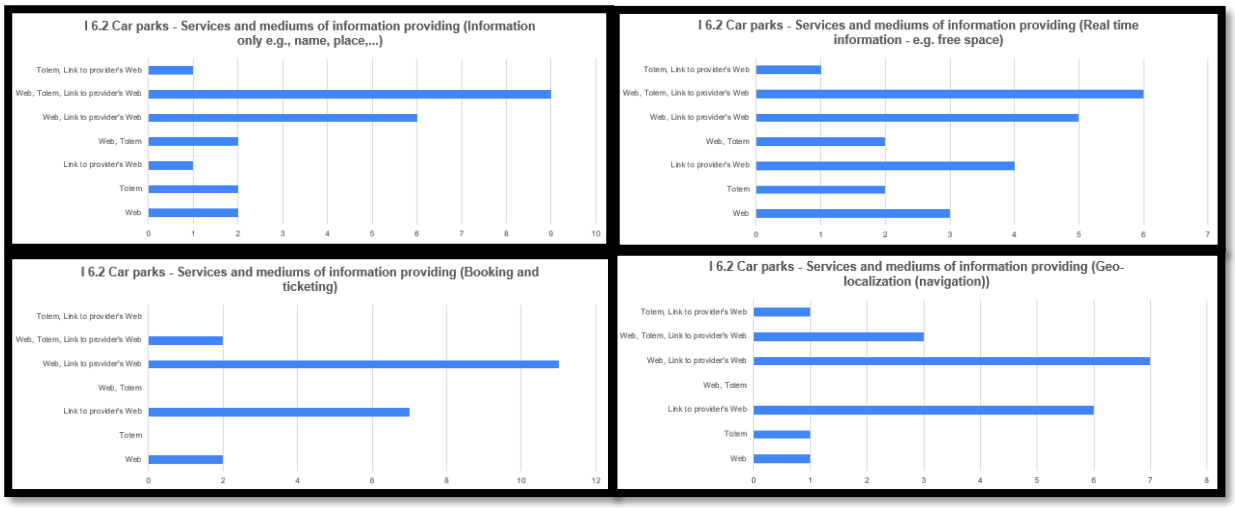
- Rijeka - Rijeka traffic, Rijeka plus
- parking space reservation with possible integration to public transport if not equipped with a shuttle service included. It is necessary to communicate the date of entry and exit
- number of free spaces, price, maximum parking duration, options for other parking spaces, etc.
- places, availability of stalls, distance from the port area
- distance - availability - cost
- Split car parks
- free spaces, all parking lots
- parking lots - open, street, public garages; source of information: website, mobile platform
- information on the number of free parking spaces at certain locations - on billboards
- all information about parking options is very important and should be easily accessible
- free spaces, all parking lots
- parking location, availability, pricing and type of parking (garage, open space behind the ramp, street parking). Guarded or not. API exchange with the parking service provider.
- automatic exchange with the billing parking system, they usually allow such exchange. It would be important to share data about type of parking and availability of free places. Also, working hours if they are not 0-24h.
- parking type (behind the ramp, garage parking, parking in the street), free parking and paid parking, payment possibilities (m-parking, ticket, credit card virtual and physical), parking availability (free places), parking prices. Sources should be API exchange with parking providers if possible, or manual entering of the price list, if not.

Parking lots present a certain relief as they almost completely assure passengers that their vehicle is safely stored and is awaiting them to finish a certain part of their journey. Services and mediums across which information should be accessible were a topic of following question inside the questionnaire presented to stakeholders. Table below illustrates what were stakeholders presented with to state their opinions.

| | Web | Totem | Link to provider's Web |
|---|---|---|---|
| Information only (e.g., name, place…) | ☐ | ☐ | ☐ |
| Real-time events (e.g., queue time) | ☐ | ☐ | ☐ |
| Booking and ticketing | ☐ | ☐ | ☐ |
| Geo-localization (navigation) | ☐ | ☐ | ☐ |

**Table 5. Car parks – services and mediums of information providing**

Web was the least favoured medium as it is not a practical way of coping with such a time-sensitive information which is being altered almost every minute. Link to parking provider's web page and a totem present viable options as they can assure and secure many concerns to whom it may matter the most. Official page from the parking provider signifies that information is presumably and most likely up-to-date and can be taken into consideration when planning occurs. Totems are an info-display that can easily project current alterations that are happening inside of the parking lot which can in turn significantly facilitate the whole process to the passengers. In the last paragraph, totem's statical nature presented itself as a disadvantage, but as the parking lot is also a static facility, totem's abilities come in handy. Categories inside this question encompassed basic information regarding parking facility, availability of parking spaces, booking and ticketing services as well as the localization properties.

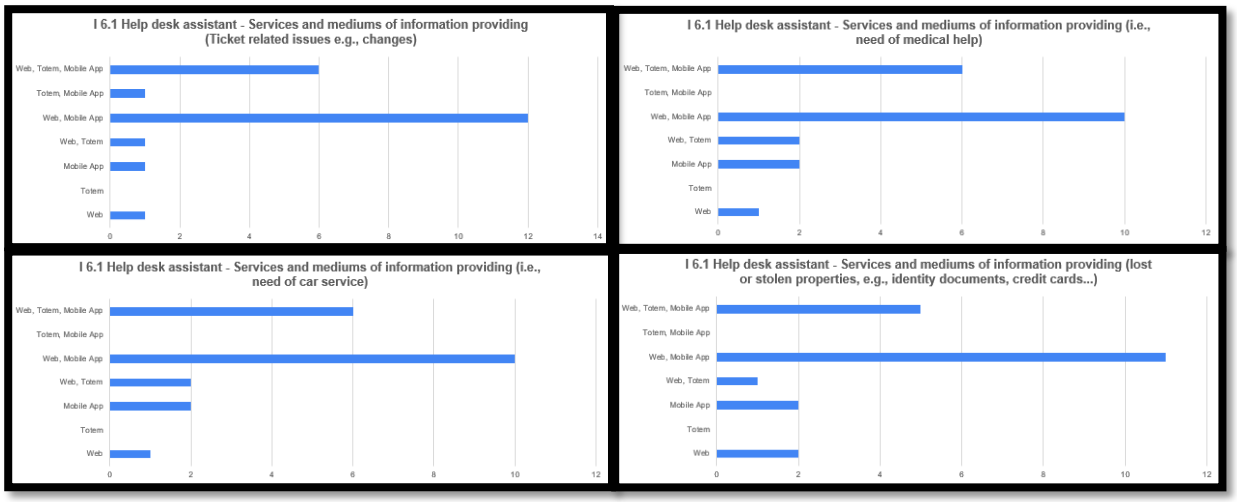


A help desk is a resource intended to provide the customer or end user with information and support related to a company's or institution's products and services. The purpose of a help desk is usually to troubleshoot problems or provide guidance about products such as computers, electronic equipment, food, apparel, or software. Corporations usually provide help desk support to their customers through various channels such as toll-free numbers, websites, instant messaging, or email.

| | Web | Totem | Mobile App |
|---|---|---|---|
| **Ticket related issues (e.g., changes)** | ☐ | ☐ | ☐ |
| **Need of medical help** | ☐ | ☐ | ☐ |
| **Need of car service** | ☐ | ☐ | ☐ |
| **Lost or stolen properties (e.g., identity documents, credit cards…)** | ☐ | ☐ | ☐ |

**Table 6. Help desk assistant – examples of services and mediums of information providing**

A good help desk improves customer satisfaction if it is actively responsive, consistently assists users, and goes the extra mile in service delivery of technical support. This provides support to the company's or platforms objectives and facilitates the growth of its business by increasing the number of returning customers. Above this text, a table from the questionnaire is inserted in order to provide an overview of what would help desk most likely refer to and what would be the preferrable mediums of displaying information. Results clearly indicate that most useful way of providing help desk assistance would be through web medium as well as through dedicated mobile application. Below the aggregated and listed responses from stakeholders, there are suggestions from the stakeholders on use cases other than prelisted/offered answers.



**I 6.1.1 Help desk assistance - which are the sources of information for selected help services? Add some more if you think that should be supported by E-CHAIN platform.**

- direct contacts with providers
- live chat (robot)
- service providers should make the information available
- contact of the police, office for lost items, contacts of emergency services, pharmacies on duty, doctor's office on duty for tourists
- emergency services, pharmacy on duty, city map
- they should be provided in line with the regular ITIL service provision management.
- standard service desk should be established because they have possibility to exchange information, for example, GLDPI, Service Now, ZenDesk or SpiceWorks
- if the system of service desk (help desk) is outsourced, then ERP of the service provider. They usually allow for information interexchange.

### 5.1.3. BOOKING & TICKETING

A booking is the arrangement that you make when you book something such as a hotel room, a table at a restaurant, a theatre seat, or a place on public transport, while the ticketing is the production or selling of tickets. When encountering these two terms, it is likely that the matter is about reserving something in circumstances where arrangeability is of a crucial meaning. Listed below are aggregated display of figures which are direct results from the questionnaire regarding the functionality requirements of E-CHAIN platform.

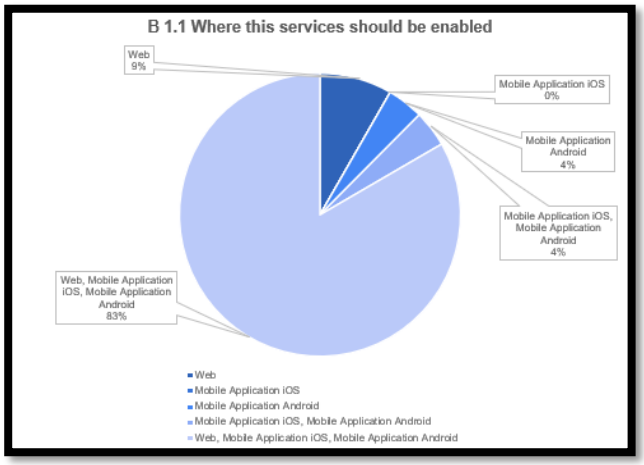



**Figure 15. Enabling of services**

The most represented answer fetched all of the offered answers as the best way to ensure functionality is to enable a wide spectrum as accessibility across the all-accessible platforms.

In regards to account creation on the platform, half of the stakeholders declared that they are in line with the option that users can create their own accounts, while the other half of the stakeholders were fairly equally divided between “no” and “maybe” options.

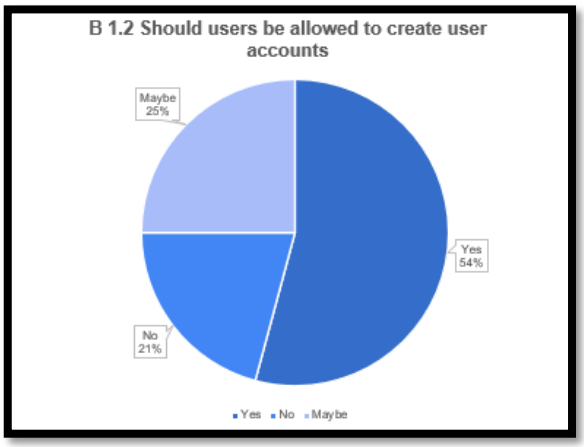



**Figure 16. User account creation**

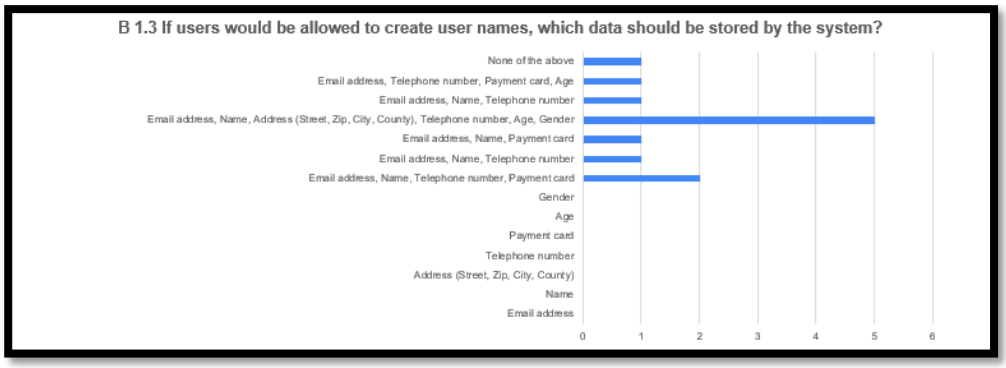



**Figure 17. Data storage options**

Data storage refers to the use of recording media to retain data using computers or other devices. The most prevalent forms of data storage are file storage, block storage, and object storage, with each being ideal for different purposes.

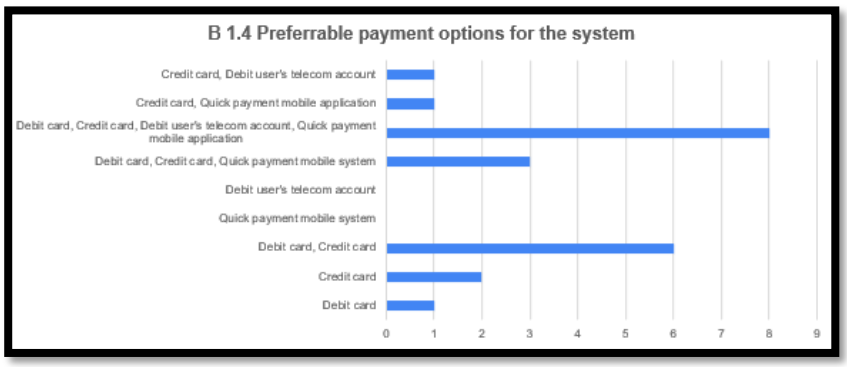



**Figure 18. Preferrable payment options for the system**

Once again, the option of having a multitude of accessible options showed that it beats individual options when it comes to paying for any kind of services.

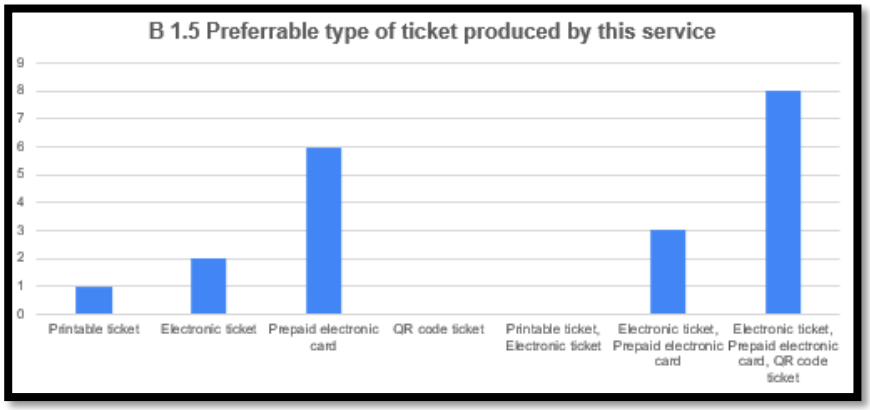



**Figure 19. Types of ticket preferred by this service**

Coming to the option of choosing preferred types of ticket, stakeholders represented their opinion through almost equal division of two of the most desirable solutions, one being the simple prepaid electronic card, and other the aggregate of all viable options.

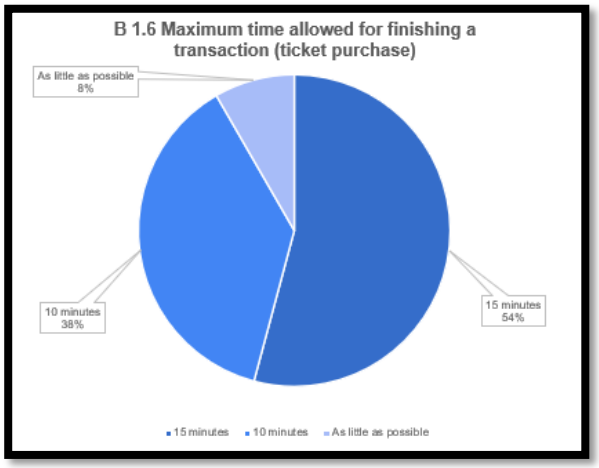



**Figure 20. Time allowed to secure a transaction**

When regarding the maximum time frame in which the transaction, mainly the ticket purchase should be finished, 92% of the answers could be summarized that 10-15 minutes is sufficient.

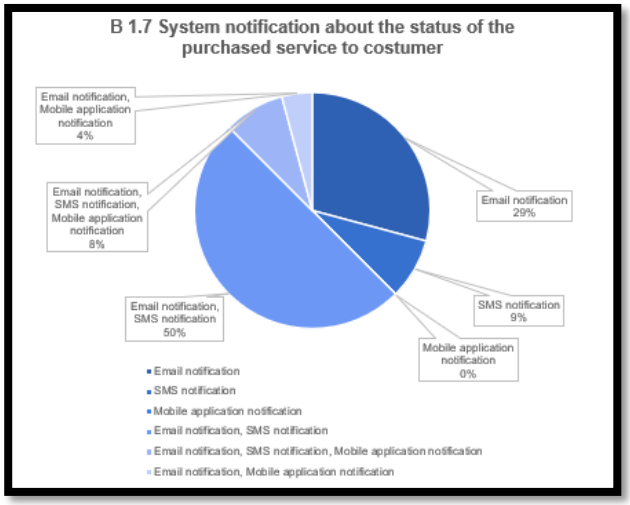



**Figure 21. System notification about the status of the purchased service**

Half of the stakeholders stated that the best way of notifying the customer about the status of the purchased service should occur via Email notification and SMS notification. Second viable option goes to the only e-mail notification as it is the preferred type of business communication and an aggregator of important notes, messages and evidently, attachments.

**"B 1.8 Which multimodal services do you think could be offered through E-CHAIN booking & ticketing module on pilot sites? "**

- Venezia - Spalato: Flixbus+ Nomago; / Venezia -Ancona: Trenitalia/
- bus line: Venezia (I) - Rovigno (HR) - Pola (HR), BRUSUTTI srl / FILS d.o.o.
- rail-bus-ferry / airport-bus-ferry
- Venezia -Split - Brač / Trenitalia-Jadrolinija
- reservation of public bicycles
- ferry - taxi
- include the various available carriers at a particular destination; e.g., Split - Airport, Split - Medjugorje, Split - Brač / Hvar; Split - Plitvice - Zagreb
- all services related to micro- and e-mobility in involved destinations
- any services that are related with the primary travel route of the passenger and could be extension of it.
- end-to-end travel experience with automatic selection of route and transport means according to pre-set criteria by the passenger and single point of payment for all transport means along the finally selected route. It should be transparent for the passenger.
- Venice -Split – Brač /Trenitalia-Jadrolinija
- Croatia Airlines + Jadrolinija e.g., London - Split - Brač/Hvar/Vis Regio Jet + Jadrolinija e.g., Prag - Rijeka – Rab

### 5.1.4. WEB SERVICES

As the purpose of the next few questions refer to the web services and their potential use cases, answers given by the stakeholders were not given in a form of offered and prelisted answers, rather reflect stakeholder's visions and personal opinions regarding the topic:

**"W 1.1 What services and standard will be used for exchange/integration of E-CHAIN services*"**

- I cannot answer, it is a decision that will be based on previous questions and experiences of other related platforms (such as FLIX bus)
- next bike app for booking public bikes
- I am not versed in the area
- I am not versed in individual web servers, it should combine as many possible services as possible (secure timetables, reservations, real-time events)
- standard message broker exchange using XML schemes
- This is difficult to answer. The project involves several countries and I could name only local vendors that could be involved in the process.
- There is no particular industry standard except use of APIs, standardized XML schemas and standard message exchange brokers.
- booking, ticketing
- we will integrate with partners via web services

**"W 1.2 What kind of solution do you propose for the clearance of sold multimodal tickets between service providers?"**

- to produce separate vouchers for each ticket in order to make all bookings independent
- Upon entering the vehicle, the service provider scans the part of the ticket that refers to it and possibly, for easier monitoring, creates its own ticket with a price of 0.00 euros.
- MyCicero
- for the end user - a discount for multimodal purchases
- when an individual service provider registers (integrates) on the E-CHAIN platform, to go directly to its application
- e-card with bar code, confirmation - voucher
- according to the bar code, it is known exactly how many of whose services were used, so you can calculate according to the actual use.

- this is probably going to have to be a custom solution covering ERP-CRM systems of operators in pilot sites (at least initially)
- for Croatia, T-Com PayWay or CorvusPay.

- **"W 1.3 What kind of solution do you propose for charging and allocating E-CHAIN service costs for e.g., multimodal tickets, parking tickets, event ticket?"**
- Include the costs for maintaining and operating the platform within the fee that is granted by each provider, then for each provider receive monthly payment on the basis of the account statement of the sales net of fees
- percentage sales service (proposal 15%)
- 2% of the selling price
- price list / tariff integration, monthly share payment
- each provider has its own price list of services, the solution should be developed by agreement between all participants (bidders within the platform)
- there should be a possibility that each server can charge for multimodal tickets, and the billing goes according to actual usage. A calculation is proposed every 7 days in the season and every 14 or a month out of season.
- as cheap as possible
- for the reasons of economic efficiency, it would be best that such a solution is operated by one stakeholder in the pilot sites, and a multiparty agreement i stipulated for provision of such services.
- don't know of such a solution, never heard of it. Maybe it has to be developed according to custom functional specification.

### 5.1.5. TECHNICAL REQUIREMENT ANALYSIS

Technical requirements, in the context of software development and systems engineering, are the factors required to deliver a desired function or behaviour from a system to satisfy a user's standards and needs. Technical requirements can refer to systems like software, electronic hardware devices or software-driven electronic devices.

Technical requirements are a part of requirements analysis (also known as requirements engineering), an interdisciplinary field in engineering that involves the design and maintenance of complex systems.

The factors considered in technical requirements are often referred to as "itties" as this is the same suffix on many of the factor types. Factors include types include accessibility, adaptability, usability, auditability, maintainability and performance. The combination of factors and the individual emphasis of each to most effectively meet the needs of users are determined through a consultation process.

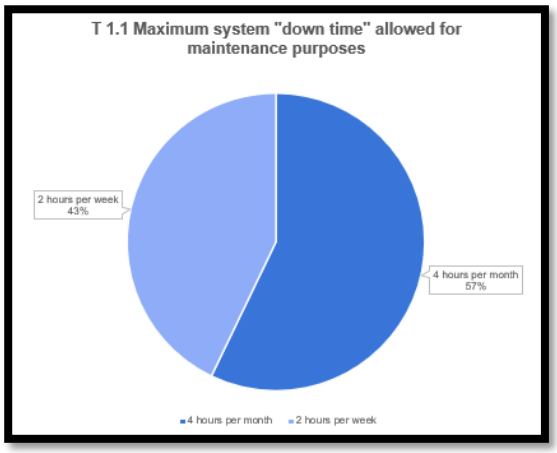
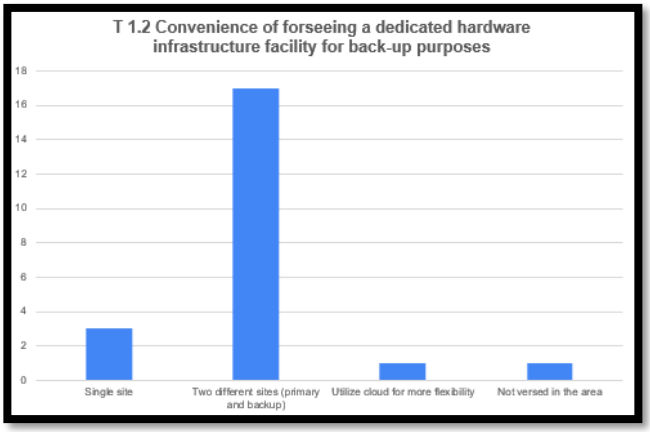



**Figure 23. Hardware infrastructure facility for back-up purposes**

The data center is the backbone and nerve center of an organization, the place where its most critical assets, the data it depends on are stored and processed. Loss or compromise of that data can do serious damage or be fatal to a business. Needless to say, having a consistent backup and data recovery plan in place is essential for survival.

**Figure 22. Allowed system "down time" for maintenance purposes**

The term downtime is used to refer to periods when a system is unavailable. The unavailability is the proportion of a time-span that a system is unavailable or offline. This is usually a result of the system failing to function because of an unplanned event, or because of routine maintenance (a planned event). Stakeholder's responses were almost equally divided between 4 hours/month and 2 hours/week.



# 6. CONCLUSIONS

Guided by the previously presented and briefly explained results acquired from the stakeholder's answers during their interview with the interviewers from E-CHAIN project resulted with the following conclusion:

During the first phase of any type of voyage planning, timely reservation and booking has to be made to ensure an arrangement which is based on desired time and place parameters. Whilst living in the modern, technology driven everyday world, online reservation and booking of intermodal transportation services must be enabled. At the point and time of reservation, timely arrival, which the questionnaire shows to be around 10 – 15 minutes post finishing the transaction of an online ticket, notification has to be sent preferably via email and/or mobile application services. Preferrable language of the platform, according to the stakeholder's responses should be of trilateral nature, that being English, Italian and Croatian. Recommended would be possessing an extensively developed help desk service, preferably in the form of having FAQ section on the website which has the ability of guiding users through different layers of the most frequently asked questions and the easiest way of solving that issues. By having a well-developed help desk service, possible reductions in cost could be made by not having the physical individual designated solely for that purpose. Chat-bot could also be a viable solution. Mandatory functionalities have to include display of information that are time sensitive and that could potentially disrupt passenger's next leg of travel activities. Having the option of timely notifications would greatly benefit the overall accordance within the whole ecosystem. Information about any kind of real-time events such as cancellations, delays or even natural disasters should have to be timely updated and possibly sent to ones to whom it may concern, i.e., someone whose travel itinerary could potentially be disrupted. As the information technology is in the full swing, any kind of notifications on the mobile application or even regular text messages definitely have to find its place within the platform. Unnecessary functionalities refer to everyday situations such as finding a free parking spot or having a dedicated info display totem with real time indicator of available spaces. While it is definitely convenient, it is not necessary. Unnecessary would also have to be geo-localization aspects of the transportation vehicles/vessels. Regularly updated display (on portable devices or on totem pole inside the terminal) of time of Arrivals and departures should suffice as that information is what counts for the end users. This questionnaire gave a lot of valuable insights and inputs regarding the physical and psychological level implementation of E-CHAIN project could bring. From purely technical and technological point of view, the platform has been extensively thought through.

Recommendations regarding the further development would focus on maintaining the core functionalities project could bring. Project has to further develop the concept and what added value could it bring on a broader level. Focusing on little details which in this phase do not represent a major obstacle could deter from the core vision which is facilitation of connectivity and harmonization of data for the

Adriatic Intermodal Network. After the core has been implemented, lot of room has to be left for future development, further upgrades and for tweaking the possible bugs and glitches.