

# Interreg Alpine Space LinkingAlps

European Regional Development Fund



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Organisational requirements for pilot service

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## Preface

|                            |  |
|----------------------------|--|
| <b>Acronym:</b>            | LinkingAlps  |
| <b>Title:</b>              | Innovative tools and strategies for linking mobility information services in a decarbonised Alpine Space |
| <b>Project number:</b>     | 740  |
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| <b>Priority:</b>           | Priority 2 - Low Carbon Alpine Space   |
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## Abbreviations

| Abbreviation         | Definition  |
|----------------------|---|
| <b>ATE</b>           | AustriaTech   |
| <b>AEV</b>           | Transport and Energy agency Canton Grison   |
| <b>ARIA</b>          | ARIA Lombardia S.p.A. (Regional Agency for Innovation and Purchasing Ltd)   |
| <b>BLIC</b>          | Consulting company for control, information and computer technology GmbH  |
| <b>Cerema</b>        | Centre d'Etudes et d'expertise sur les Risques, l'Environnement, la Mobilité et l'Aménagement<br>Centre For Studies and Expertise on Risks, Environment, Mobility, and Urban and Country planning |
| <b>CMTo</b>          | Metropolitan City of Turin  |
| <b>ERDF</b>          | European Regional Development Fund  |
| <b>FoT</b>           | Federal Office of Transport   |
| <b>ITS Directive</b> | European Directive 2010/40  |
| <b>IJPP</b>          | National integrated public passenger transportation system of Slovenia  |
| <b>JP</b>            | Journey planner   |
| <b>LINKS</b>         | LINKS Foundation - Leading Innovation & Knowledge for Society   |
| <b>NAP</b>           | National Access Point   |
| <b>NeTEx</b>         | Network Time table Exchange (CEN/TS 16614 ff)   |
| <b>OJP</b>           | Open API for distributed Journey Planning (EN/TS 17118:2017) that allows to engineer one universal interface to link services   |
| <b>RRA-LUR</b>       | Regional Development Agency of the Ljubljana Urban Region   |
| <b>SBB</b>           | Swiss Federal Railways  |
| <b>SIRI</b>          | Service Interface for Real time Information (CEN/TS 15531)  |
| <b>SLA</b>           | Service Level Agreement   |
| <b>STA</b>           | South Tyrolean Transport Structures   |
| <b>UM-FGPA</b>       | University of Maribor   |
| <b>VAO</b>           | Traffic Information Austria   |

## Definitions

| Term                                       | Definition   |
|--|--|
| <b>Active System</b>                       | <p>The active system integrates the routing information from several local journey planners to a combined seamless route. It is composed of an passive system and a Distributing system. It communicates through an OJP Interface.</p> <p>It is a journey planning engine with OJP capabilities. Via the distributing system it is able to detect journeys through adjacent or remote regions and able to create OJP Trip Compositions.</p> <p>Alias OJP Router.</p> |
| <b>Delegated Regulation (EU) 2017/1926</b> | Supplements European Directive 2010/40 with regard to the provision of EU-wide multimodal travel information services.   |
| <b>End user</b>                            | User of an "end user application". It is a person asking for journey planning information by using an end user application. It is the enquirer of a journey plan with a start, an end point and some travel preferences.   |
| <b>EU-Spirit</b>                           | Internet-based, cross-border travel information service for customers of public transport ( <a href="https://eu-spirit.eu/">https://eu-spirit.eu/</a> ).   |
| <b>Directive (EU) 2010/40</b>              | European Directive 2010/40 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport.   |
| <b>Directive (EU) 2019/1024</b>            | European Directive 2010/40 on open data and the re-use of public sector information (recast).  |
| <b>Journey Planner (JP)</b>                | A system that is calculating the journey for a given request. It is able to accept requests directly from end-user services. It is a generalization of OJP Router and OJP Responder.   |
| <b>Local Journey Planner (LJP)</b>         | A system with a routing engine and access to multimodal data with a particular local, regional or national coverage; "local" underlines its focus on a specific coverage that is limited. LJPs have no transregional (or distributed) OJP routing capabilities.  |
| <b>Open Journey Planning (OJP)</b>         | Standard for communication for distributed journey planning (CEN/TS 17118:2017).   |
| <b>OJP Implementers</b>                    | Travel information service provider that is implementing an OJP service exchange (in most cases on the back-end system of an end user service).  |
| <b>OJP Interface</b>                       | Application Programming Interface (API) based on CEN/TS 2017: OpenAPI for distributed journey planning and specified in D.T1.5.1 Specification of the API interface (including a LinkingAlps OJP Profile).   |
| <b>OJP Responder</b>                       | Alias Passive System.  |
| <b>OJP Router</b>                          | Alias Active System.   |

| Term                        | Definition   |
|-----------------------------|--|
| <b>OJP User</b>             | End-user service provider that is using OJP services from local JPs to provide an end-user service.  |
| <b>Passive System</b>       | A Local journey planner (LJP) with a OJP interface (API) being able to respond to requests from distributing systems. It is an information source within the system without distributed journey planning capabilities. It communicates through an OJP interface as a responding system. Alias OJP responder. |
| <b>Participating system</b> | Local journey planner being part of the OJP system architecture and the appropriate OJP service.   |
| <b>Pilot service</b>        | At least one end user service that is based on a decentralised (distributed) network of JPs that are providing/exchanging information over harmonised OJP service.   |

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## 1 Executive Summary

The LinkingAlps distributed journey planning system will be a network of linked national travel information service providers. When in operation in 2022, it will allow for cross-border travel information for trips between Slovenia, France, Germany, Austria, Italy, Liechtenstein and Switzerland.

A functional OJP pilot service depends largely on a sensible and appropriate organisation. This applies in particular to the operation, which follows the pilot. The Deliverable “Organisational requirements for the LinkingAlps pilot service” contains the relevant requirements of the organisation of the consortium during the pilot phase and prepares for the future organisation of the LinkingAlps distributed journey planning system. The main goal of the Deliverable is not to *answer* all of the questions, but rather to *collect and raise the relevant issues* for further specification and development.

An important background for the development of the requirements were various national and regional requirements and specifically the relevant European policy requirements (e.g. the European Directive 2010/40 on the framework for the deployment of Intelligent Transport Systems and the delegated Regulation 2017/1926 with regard to the provision of EU-wide multimodal travel information services).

## 2 Introduction

### 2.1 Purpose of the document

This document contains the organisational requirements for the LinkingAlps distributed journey planning system. The document forms the Deliverable of Activity T3.1 in WPT3 and is the basis for the overall organisational architecture of the distributed system.

The document:

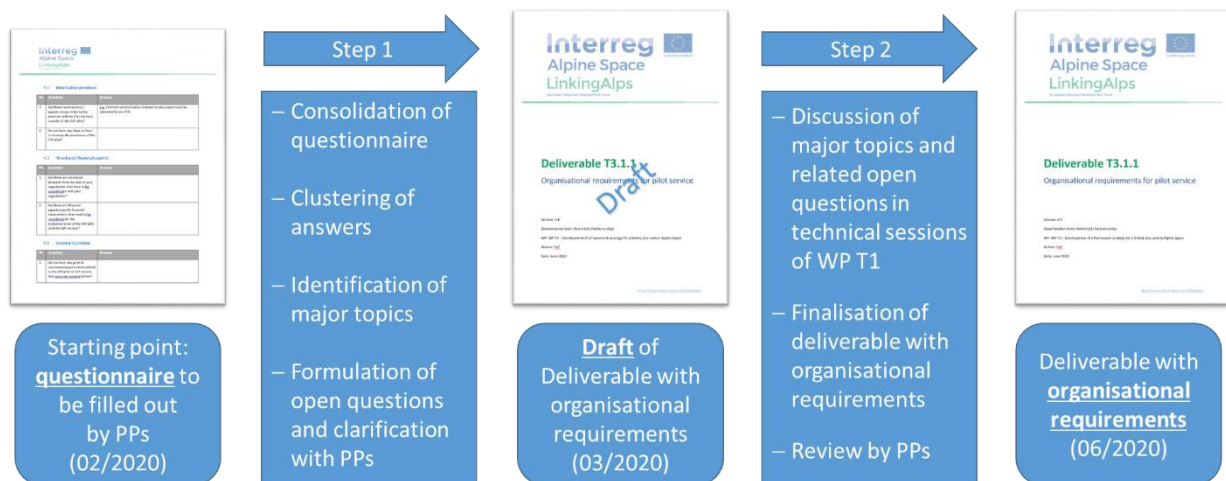
- lays down the organisational requirements for the LinkingAlps pilot
- collects open issues in order to facilitate the alignment and decision-making process in the development of the organisational requirements.

The goal of this document is not to *answer* all of the questions, but rather to *collect and raise issues* and provide them as a basis for A.T3.2. (ff.), as well as for WPT1, where the issues will also be covered by the discussion within dedicated sessions.

### 2.2 Development of organisational requirements and related decision-making

The process for the joint development of organisational requirements and related decision-making is shown in Figure 1 and described in the following subchapters.





**Figure 1: Process for developing the organisational requirements**

### 2.2.1 Alignment of organisational requirements with WPT1 (Step 2)

In the course of the discussion on the technical requirements in WPT1, organisational requirements are identified that need to be aligned with the ongoing development of requirements in A.T3.2 of WPT3. In order to ensure harmonised deployment, the major topics, including open issues closely related to the LinkingAlps pilot system architecture were discussed in two dedicated technical sessions of WPT1, organised and hosted by ATE. The participants of these sessions are representatives of the OJP implementers (SBB, VAO, STA, UM-FGPA, ARIA, CMT0/5T) coming from the business and expert side of the OJP implementers as well as experts in standardisation and service exchange. Based on the results of the questionnaire and the discussions with the OJP implementers, the organisational requirements for the LinkingAlps pilot service are formulated (see Chapter 4).

## 3 Major topics for the organisational requirements of the LinkingAlps pilot service

Starting from the collection of organisational requirements by means of the questionnaire, some major topics are identified to start the detailed discussion on the open questions. The aim of these major topics is to provide more focus and structure to the discussion by aggregating thematically related open issues. As a prerequisite for the definition of organisational requirements, national/regional and European policy requirements must be taken into account.

- **National/regional requirements for interoperability of the OJP interface** (national policy background such as regional laws and obligatory regional policies):

Only those aspects of national/regional requirements are included in the organisational requirements that address interoperability issues and have an impact on the provision of the OJP interface. All other aspects related to national policies are not part of the organisational requirements for the OJP service to be developed within LinkingAlps.

– **European policy requirements:**

The requirements of the relevant European regulations (e.g. the EC Delegated Regulation 2017/1926 or the Directive (EU) 2019/1024 (Open Data Directive)) as well as the associated European standards (like CEN/TS 17118 OpenAPI for distributed journey planning or CEN/TR 16959 on NeTEx) must be taken into account when determining the organisational requirements (e.g. with regard to the licensing aspects, financial compensation, etc.). Similar to the national/regional requirements, the “obligations” of the regulations must be taken into consideration. All aspects that do not have an impact on the OJP interface are not covered in this document.

Please note that the corresponding European standards (like CEN/TS 17118 OpenAPI for distributed journey planning) are considered as premise in the development of the technical architecture.

1. **Content of the LinkingAlps service:** This major topic aggregates the open issues related to
  - the **preferences or limitations** regarding the **content of the LinkingAlps service** provided, resulting from the aforementioned (national or European) policy background, such as the discussion of tariff information aspects.
  - the **preferences and limitations** regarding the **content of the LinkingAlps end-user service**, e.g.
    - which modes *have* to be included in the service based on obligatory policies,
    - which journey planning options have to be made available to the end-users (such as accessibility information for people with reduced mobility, prioritisation of environmentally-friendly transport options, tariff information, etc.)?

The focus of this major topic is in a first step to discuss and decide only on obligations (!) coming from the European and national/regional policy background.

2. **Provision of the LinkingAlps service:** This major topic covers all **organisational aspects related to licensing and information provision policy in relation to the LinkingAlps service**. OJP implementers emphasise the need for an appropriate licensing model for the end-user service provider in order to
  - manage the total amount of requests (avoid technical breakdowns)
  - manage the different types of access and use.

Therefore there is a need for a licensing model and an appropriate process to manage these aspects, e.g.:

- how could a licensing model look like that is approved by all OJP implementers?
- How could the licensing process be organised and managed?
- Are specific roles required for this?
- At which step in the process are the licenses offered/managed?

- What kind of agreements are required? Between which parties?

As a second aspect, this major topic covers **open issues related to financial compensations** and monetary aspects related to the provision of the LinkingAlps service and the LinkingAlps end-user service.

- How can a distributed service deal with the obligations regarding financial compensation arising from the political background?
  - Who can charge costs? To whom?
  - What amounts are mandatory (e.g. marginal/additional costs)?
  - What agreements are necessary?
3. **Organisation of processes for the LinkingAlps service:** This major aggregates the open questions regarding organisational processes that support the operation of the LinkingAlps service but are outside the technical infrastructure (strongly linked to the open questions from the WPT1).

## 4 Organisational requirements and open issues

This chapter presents the organisational requirements and remaining open issues that were elaborated in the process described in Chapter 1. The requirements and open issues are structured according to the major topics defined in Chapter 3.

### 4.1 Content of the LinkingAlps service and end-user service

#### 4.1.1 Organisational requirements

The basis for the organisation requirements is the Delegated Regulation 2017/1926. The consortium agreed on providing information on the greenhouse-gas emissions, that the travel service information service providers shall provide routing results based on static, whenever possibly with dynamic information, the information shall be applied on a non-discriminatory basis and some more. Therefore a roadmap for the integration of particular transport modes/information content will be developed in a further step.

### 4.2 Provision of the LinkingAlps service

#### 4.2.1 Organisational requirements and open issues

For the LinkingAlps service, the source and the date and time of the last update shall be indicated. Also contractual agreements between travel information service provider shall be defined. Furthermore

Member States shall ensure that standard licenses for the re-use of public sector documents, which can be adapted to meet particular license applications, are available in digital format.

Additional contracts for supporting data might be needed. The handling of missing data and which data is required for the operation of the LinkingAlps service has to be verified. Furthermore, the consortium has to agree, if customer feedback regarding service quality will be available.

The license for the OJP user and the SLA between the participating systems as well as other necessary contracts will be further developed in WPT4.

### 4.3 Financial compensation

#### 4.3.1 Organisational requirements

The Consortium agreed that any financial compensation shall be reasonable and proportionate. OJP users shall pay for the LinkingAlps service according to specified limits of the number of requests per minute/per day. However, the LinkingAlps service shall be free of charge below a specified request limit. The number of requests and the limits like time restrictions have to be clarified and agreed among all partners, otherwise a risk of overload for those active systems, which offer more favourable conditions for the OJP user. Further discussions are needed on the operational modal.

### 4.4 Organisation of processes for the LinkingAlps service

#### 4.4.1 Organisational requirements

Organisational processes for managing performance, data quality, reporting/monitoring, incidents, maintenance, innovation management/versioning of the participating systems during the operation of the LinkingAlps service shall be defined. Also the organisational processes for the adjustment of SLA and license shall be defined. The knowledge transfer within the participating system's organisation shall be guaranteed in order to enable a regular operation of the project.

The estimation of the effort in terms of resources, which will be required by the participating systems have to be defined and a modal for dimensioning the system in an operational state has to be elaborated in the further progress of the project.

## 5 First Conclusions and Outlook

In this document the organisational requirements for the LinkingAlps distributed journey planning system were collected by means of a questionnaire. Within Activity T3.1 in WPT3, open issues resulting from statements of the project partners were gathered and discussed in order to facilitate the alignment and decision-making process in the development of the organisational requirements.

The following major topics were identified to initiate the detailed discussion on the open questions:

1. National/regional requirements for interoperability of the OJP interface
2. European policy requirements
3. Content of the LinkingAlps service
4. Provision of the LinkingAlps service
5. Organisation of processes for the LinkingAlps service

With the help of this above-mentioned structure, first organisational requirements could be formulated. These requirements include a roadmap for specific transport modes/information content, a license for the OJP user, Service Level Agreements, specified request limits, and organisational processes.

The organisational requirements collected in A.T3.1 together with the open issues form the basis for A.T3.2. (ff.), as well as for WPT1, where the development of the organisational architecture will be continued.