

How can cross-border travel information in the Alpine region be improved? The LinkingAlps project aims to answer this question.

LinkingAlps is co-financed by the European Regional Development Fund through the Interreg Alpine Space programme.



'Linking of Services' as key for a transnational Journey Planner Service in the Alpine Space

Multimodal travel information services, such as journey planners, inform travellers about their travel details and the best means of transport. Therefore, they contribute to intensifying the use of public transport.

While high-quality information systems already exist for local and regional areas, cross-border information is lagging. This can be attributed to the fact that travel information systems are limited to local, regional or national means of transport, and only a small amount of cross-border data is integrated. The LinkingAlps project addresses this problem by linking the largely isolated systems across borders. While data exchange was dominating past approaches to develop journey planning networks, LinkingAlps is building on the concept of 'Linking of Services'. By linking several, already existing, traveller information services, the coverage of one individual service is being increased to the total area covered by all linked services.

For operators of travel information services, a 'Linking of Services' means that cross-border exchange no longer necessarily implies making one's data available to others via data exchange formats and processes. At the same

time providers retain sovereignty over their own data and only provide a particular interface so that other systems can connect and request information (such as a route) and not the data itself. This is possible with a dedicated application programming interface (API). An API enables other programs to "plug-in" or connect their system to the own system. The API offers a set of clearly defined methods of communication between various systems and can be compared with a messenger that exchanges requests and answers.

For the traveller, 'Linking of Services' means that they can request trip information through the application that they are used to, but will receive results of increased coverage and functionality since the API – the messenger – works in the background and also gathers information from other systems.

As access to travel information becomes essentially easier and more convenient, in particular when travelling across borders, the 'Linking of Services' approach significantly contributes to the promotion of multimodal transport and holds the potential to trigger a large-scale shift of travellers towards the use of low-emission mobility modes.

While the concept of 'Linking of Services' was first determined by the Delegated Regulation (2017/1926), LinkingAlps operationalises this fundamental framework and seeks to highlight the benefits for service providers as well as for travellers in the Alpine region and beyond.

Implementing the LinkingAlps Service

With the first version of the LinkingAlps requirements specification that, together with the LinkingAlps Open Journey Planning (OJP) profile, became ready in the first quarter of 2021, all journey planners kicked-off their implementations at local system level by teaming up with their chosen suppliers.

It is expected, that by July 2021, the majority of the journey planners have implemented their "passive

system" components according to the LinkingAlps specifications in order to start with local testing activities.

Beyond that, also the 'active system' implementations, the components in charge of the distributed routing across systems, have been successfully started by SBB, STA and VAO. First 'active system' implementations that are already connected with end-user applications for demonstration purposes, allow for the interconnection of the locally developed system components in order to show-case 'Linking of Services' in the Alpine region already by July 2021.

With the results of these first cross-border testing and demonstration activities, the project partners will gain

important knowledge on how to further implement and fine-tune their systems, both on local level as well as on the level of the interlinking distributed routing engines.

All final Deliverables can be found on the LinkingAlps Website: <https://www.alpine-space.eu/projects/linkingalps/en/project-results>

Developing the organisational layer

In addition to a resilient technical architecture, an organisational architecture must be developed to complement the technical components and to ensure a sustainable and smooth operation of the LinkingAlps service also beyond the project period.

As part of work package T3, an organisational architecture was drafted within deliverable D.T3.2.1. Within this organisational architecture, the vision and mission of the LinkingAlps service was formulated, the roles and responsibilities of the individual stakeholders were outlined and considerations on a suitable collaboration and governance structure were conducted.

In addition, a set of detailed organisational processes were developed (see examples in Figure 1), which depict essential tools to structure and coordinate the collaboration of stakeholders for a durable and resilient operation of the LinkingAlps services.

However, the developed processes do not only apply to the operation of the LinkingAlps service, but also cover innovation and expansion activities. For example, the 'Migration Path Process' determines how changes and upgrade activities of system components can happen in

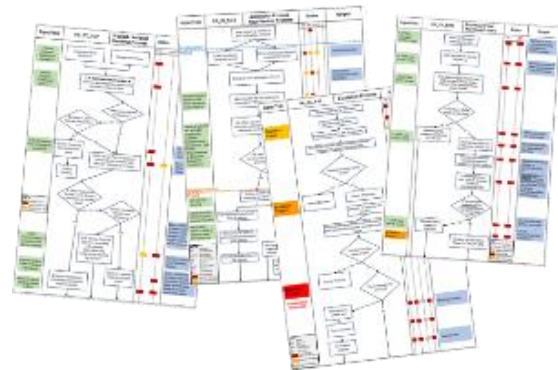


Figure 1 Examples of developed organisational process flows

an organised and efficient manner. The 'Admission Process for New Passive Systems' predefines the procedure how a journey planning service can join the LinkingAlps service as a new passive system.

A dedicated process workshop was organised to bring all participating system partners, as well as partners from sciences and research together, to jointly discuss and agree on the detailed organisational processes, that provide the bases for an operational service in the Alpine region.

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Visibility and Outreach

The LinkingAlps partners were very active in presenting the novel 'Linking of Services' approach at diverse conferences, meetings and workshops. Some highlights of the last 6 months include the presentation of LinkingAlps at the Smart Cities conference in Hong Kong on the 27th January 2021. The audience of this conference was coming from the Asia & Pacific area and showed great interest in the fresh 'Linking of Services' approach.

Especially the fully distributed system architecture of the LinkingAlps service led to a vivid Q&A session after the presentation and pushed for the recognition of the LinkingAlps project on a global scale.

In March 2021, LinkingAlps was also presented at the virtual ISEP - International Symposium on Electronics in Transport- in Slovenia. A strong focus was again on the 'Linking of Services' approach, as well as on the aspired goal of connecting LinkingAlps with the parallel running OJP project - OJP4Danube - and the EU-Spirits Network.



Figure 2 Smart Mobility Conference Hong Kong

In June 2021, the 4th PSG (Project Steering Group) meeting took place. Due to the COV19 situation, the PSG meeting took again place as virtual meeting.

Outlook on activities

In the coming months a range of project activities will take place, including the 4th PIM (Project Implementation Meeting) in September 2021 and already the 5th and last PSG Meeting in November.

Highlights of the coming months will be the **OJP4Europe** meeting on the 22nd of September 2021. The OJP4Europe meeting will bring together the consortiums of LinkingAlps, OJP4Danube and EU-Spirits in Vienna (AUT). OJP4Danube is a 'sister' project that develops a distributed, linked journey planning service and integrates bike routings across the Danube Region. EU-Spirits is a long established network of journey planner

services in the north-western parts of Europe. The OJP4Europe meeting is planned as hybrid event with focus on experience exchange and network across projects and European regions. The event is planned to last 2-days and will be connected the 4th PIM of LinkingAlps.

Furthermore, first project -internal demonstrations of the implementations based on the LinkingAlps specification for national purposes will take place in the next months. By already connecting other journey planners from the LinkingAlps network via the LinkingAlps OJP, the project will gain important insights towards the ongoing implementation activities.

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