

# OJP4Danube

## Linking of Services

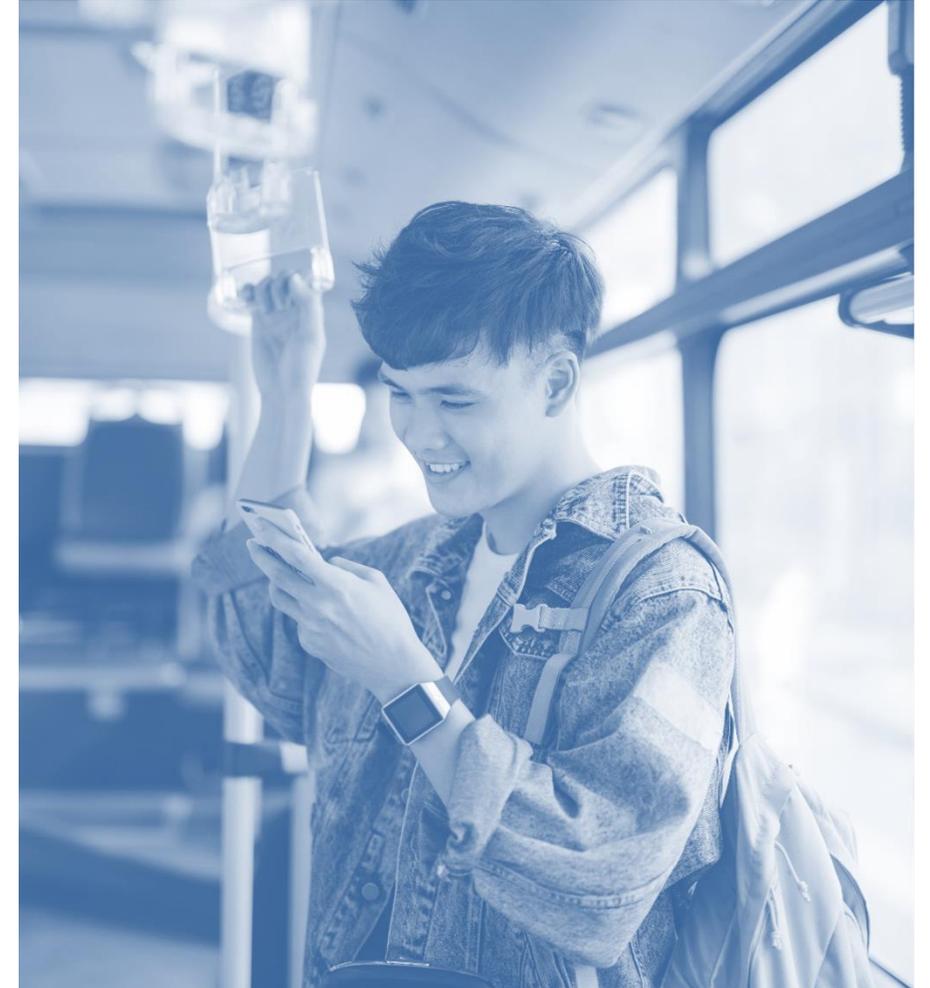
Towards a multimodal, cross-border traveler information network for the Danube Region

# The changing mobility needs

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digitalisation  
connectivity  
automation  
sharing  
usage

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# Mobility Services

## Build on Information which is

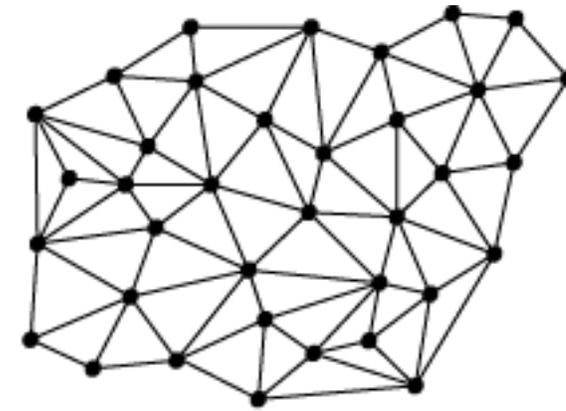
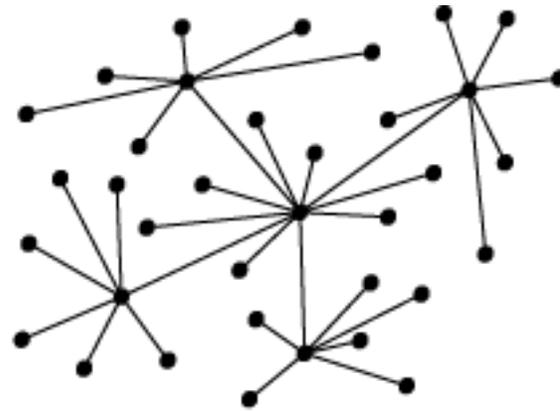
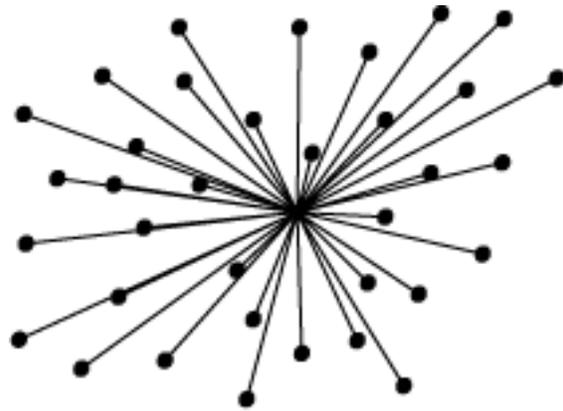
- Reliable
- Accurate
- Consistent
- Relevant
- Ubiquitous



## Across different

- Transport Providers
- Transport Modes
- Output Channels
- Borders

# The Evolution of Mobility Systems



# Linking of Services



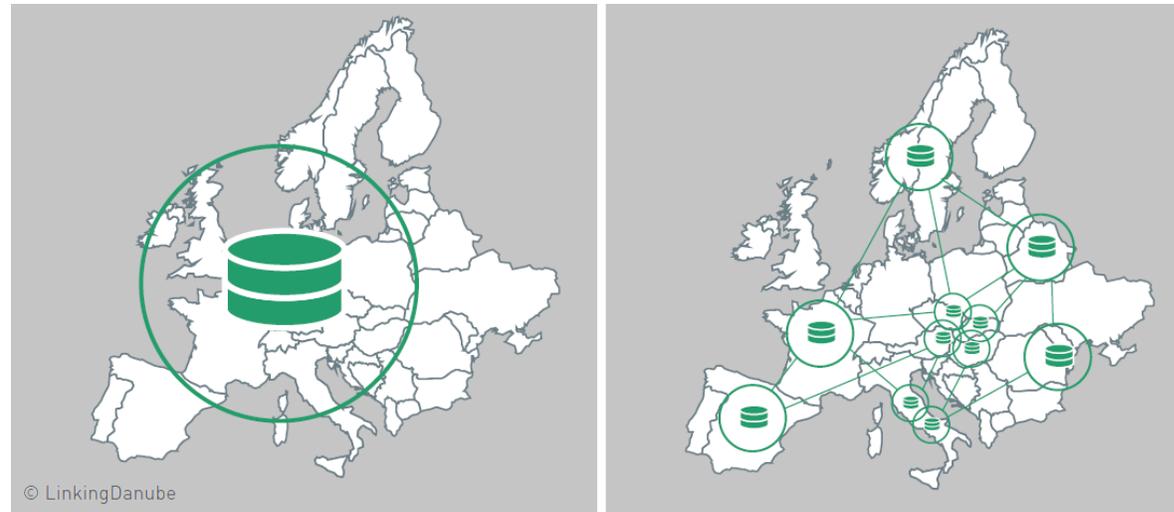
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data  
services  
standards  
interfaces

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# The Linking of Services Approach

**‘Linking of Services’ refers to the technical linkage of systems or services through interfaces (APIs)**



**Case of Journey Planning**

# The Linking of Services Approach

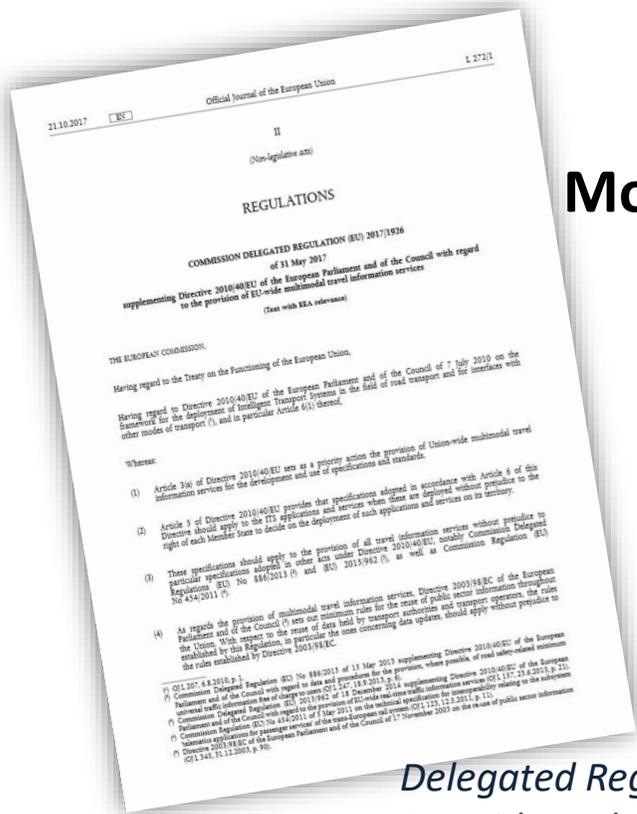
## Motivators

### Motivator 1 – No Seamless Journey Planning

- **No universal multimodal travel information system** (cross-border, operator-spanning) for public transport, rail, alternative mobility offers
- **Isolated travel information with local or regional focus**, without cross-border and cross-operator information
- **No door-to-door routing with possible for longer journeys** (integrating long-distance transport)

# The Linking of Services Approach

## Motivators



## Motivator 2 – European legislation & CEN Standard for ‘Linking of Services’

### Article 7

### Linking travel information services

*Delegated Regulation 2017/1926 Provision of EU-wide multimodal travel information services*



*CEN/TS 177118 Public Transport –Open API for distributed journey planning (2017)*

# The Linking of Services Approach

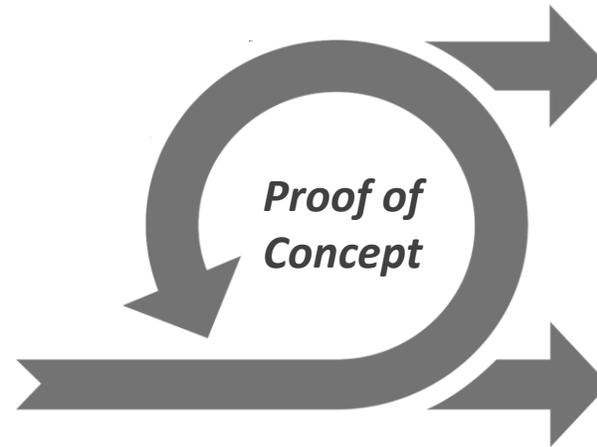
## Motivators

### Motivator 3 – Missing Viable Concepts for EU-wide Travel Information

- **Data Sovereignty** concerns as increasing hindering factor for centralized solution
- **Third party driven** innovation landscape
  - ⇒ new services are developed instead of innovating existing services

# The Linking of Services Approach

## Lead Projects – Linking Services across Europe



# The Linking of Services Approach

Project co-funded by the European Union



Linking multimodal travel information  
services in the Danube Region



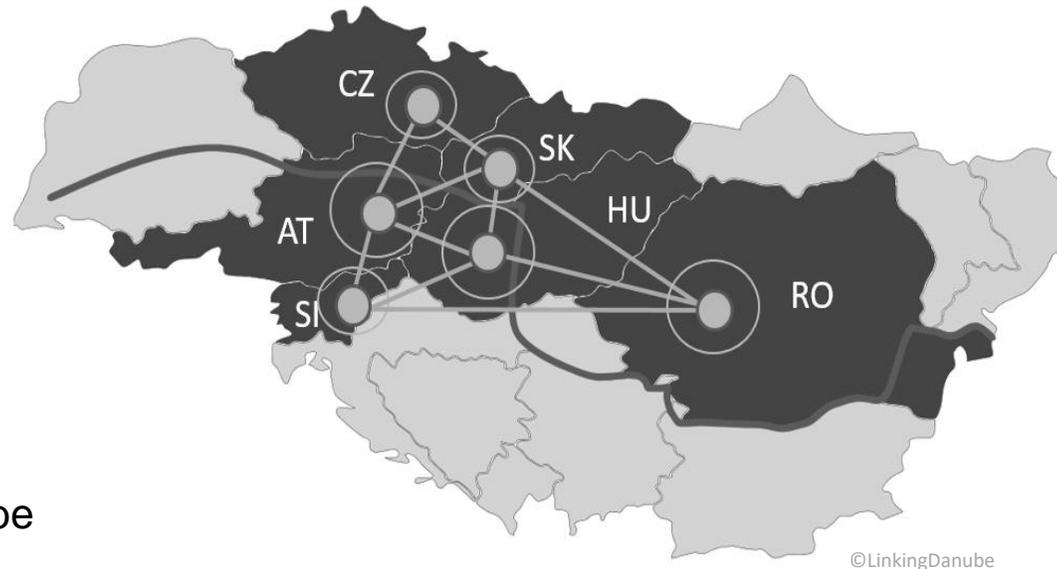
# Linking of Services

INTERREG Danube Region Program  
2017 – 2019 (30 months)



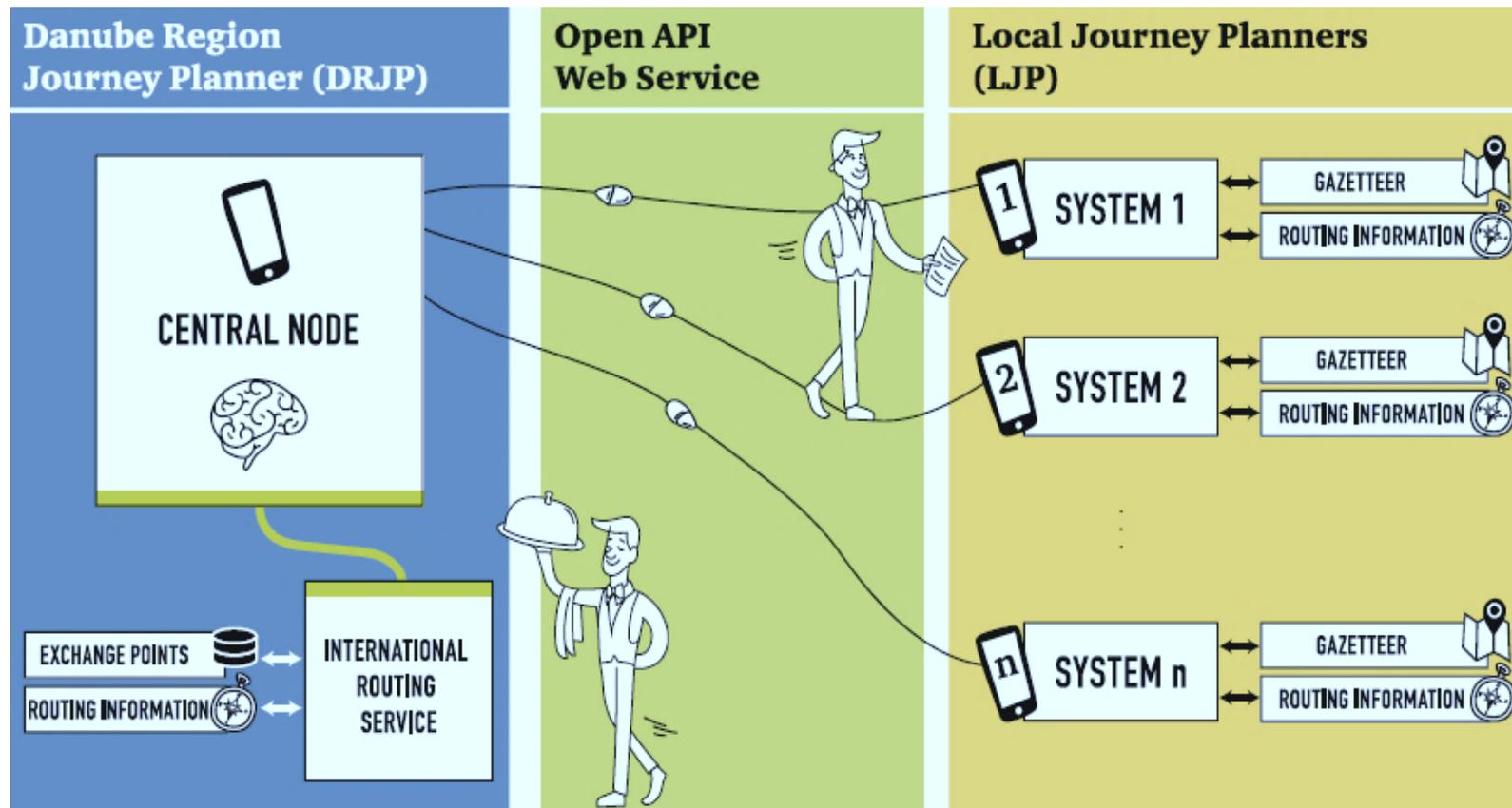
- 10 Project Partners
- 6 Danube Region Countries
- 6 Existing travel information services/ journey planners

Linking transnational, multimodal traveller information and journey planners for environmentally-friendly mobility in the Danube Region



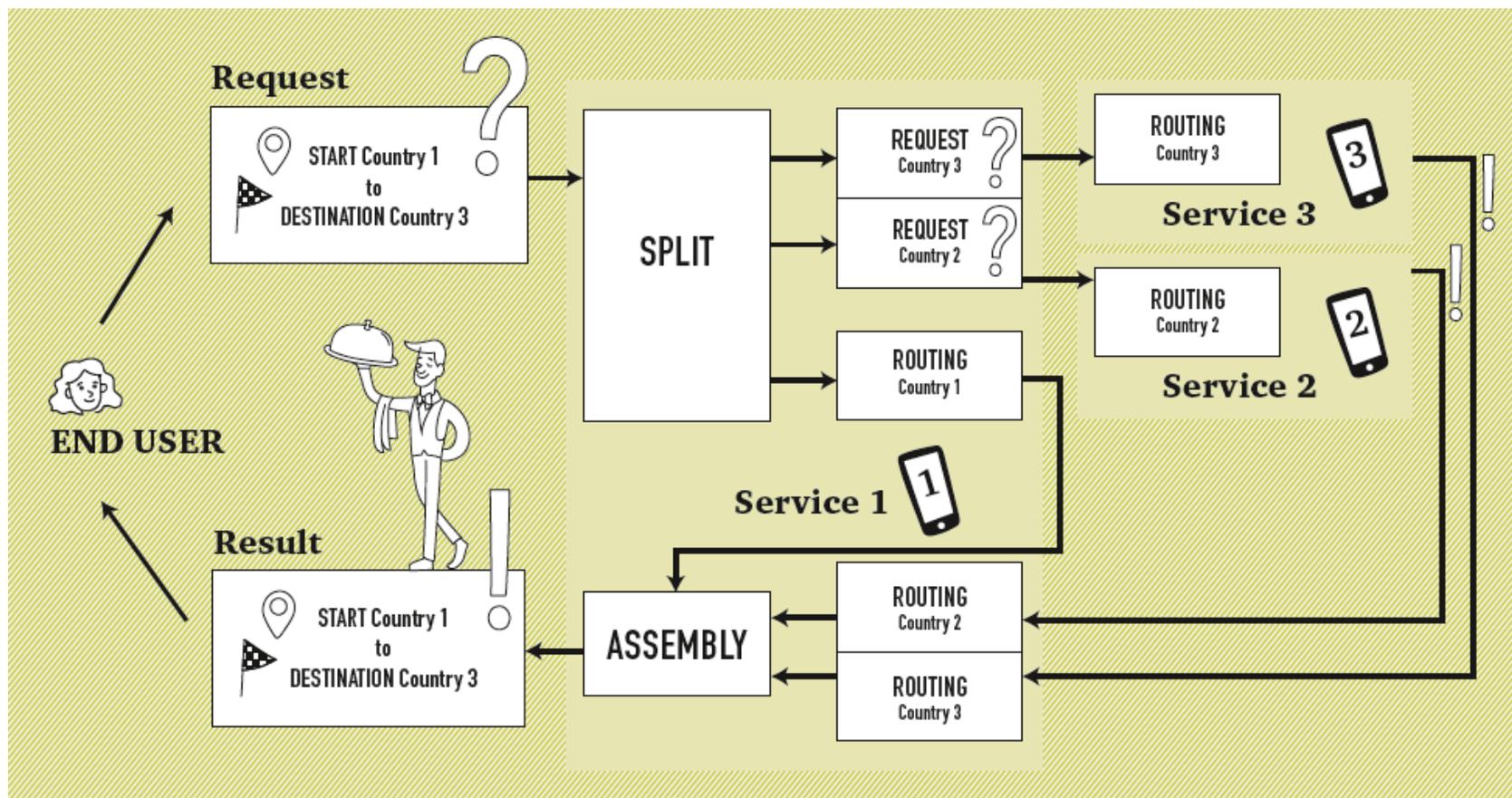
# Linking of Services

## Centrally Distributed Approach – Service Architecture



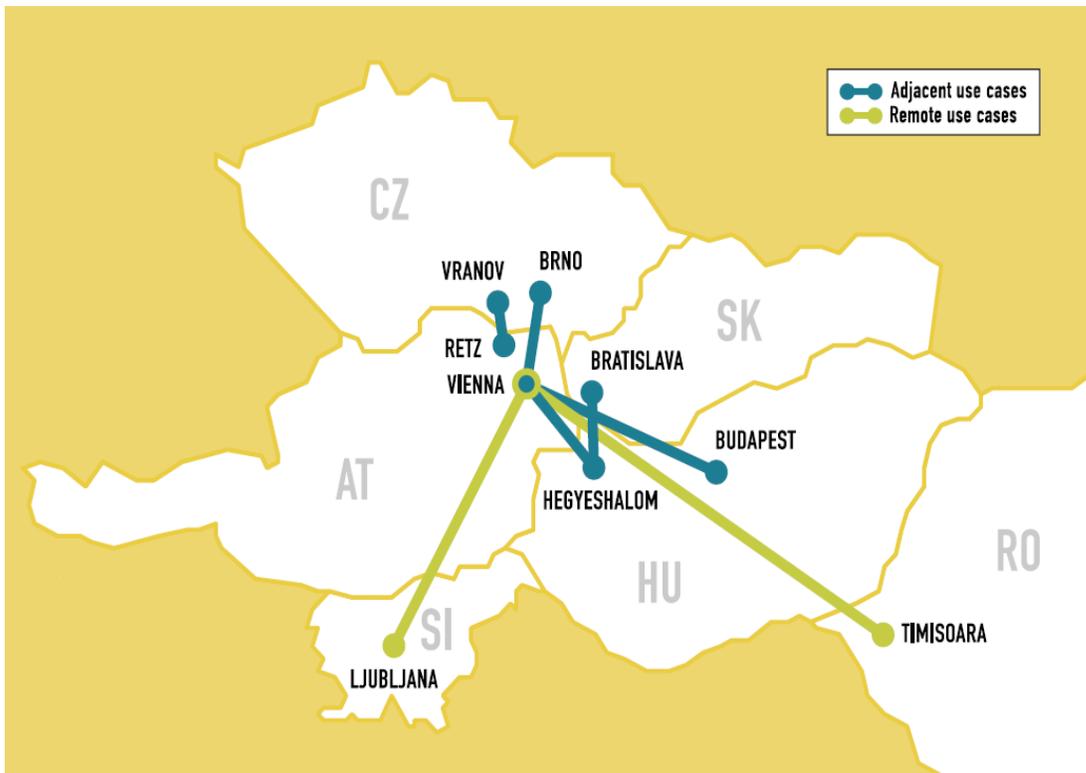
# Linking of Services

## Centrally Distributed Approach – Split and Assembly of Requests



# Linking of Services

## Output & Learning of LinkingDanube



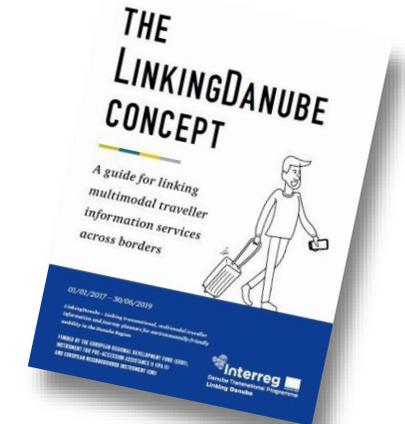
### Enhance the connectivity and accessibility

- **Danube Region Journey Planner**  
a decentralized (pilot) network of inter-linked journey planners in 6 countries
- **Danube Scout**

### Increased efficiency & organisation of the multimodal network

- **Concept on 'Linking of Services'**
- Transnational **Pilot Action**

**Proof-of-concept**



# Linking of Services

**From the 'Proof of Concept' of Linking of Services Approach  
to an Operational Service**

# OJP4Danube - Overview

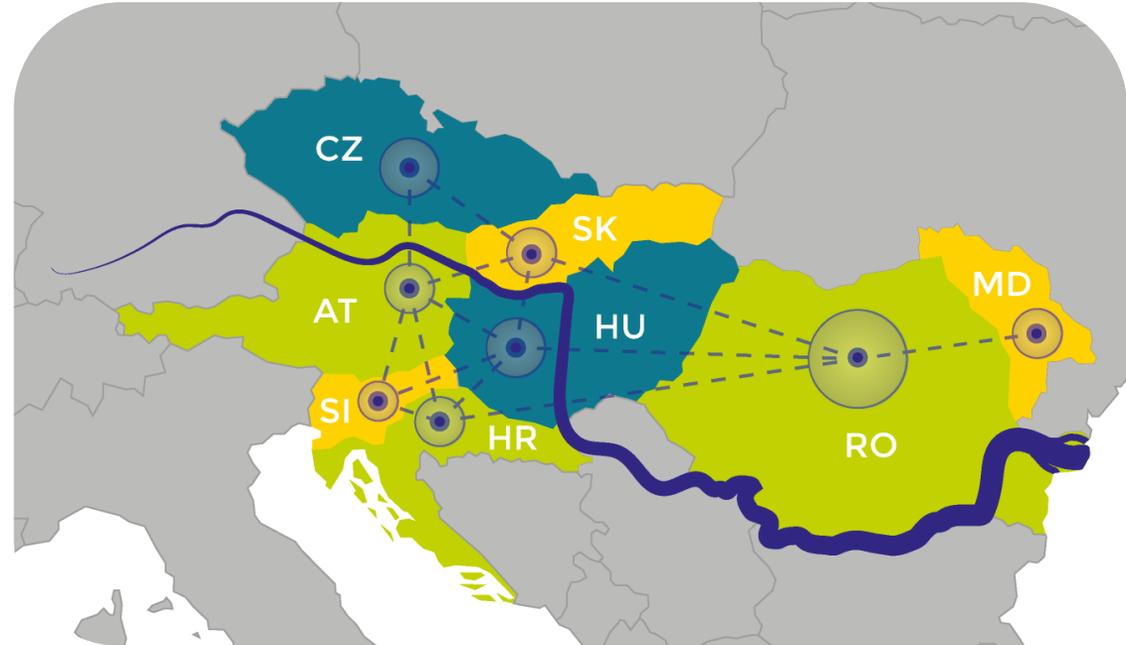
## INTERREG Danube Transnational Programme

Priority 3 - Better connected and energy responsible Danube region

2020 – 2022 (30 months)

- 14 Project Partners
- 8 Danube Region Countries
- 6 Existing travel information services/  
journey planners

Coordination mechanisms for multimodal cross-border traveler information network based on OJP for Danube Region



# Partner



AustriaTech - Federal Agency for technological measures Ltd. **(ATE)**  
Traffic Information Austria **(VAO)**



University of Maribor **(UM-FGPA)**  
Regional Development Agency of Ljubljana Urban Region **(LUR)**



Railway Company Slovakia, j.s.c. **(ZSSK)**  
University of Zilina **(UNIZA)**



Győr-Sopron-Ebenfurt Railway Corp. **(GYS)**  
GLI Solutions Kft. **(GLI)**  
Institute for Computer Science and Control **(ICS)**



Electronic Solutions SRL **(ELS)**  
Politehnica University of Timisoara **(PUT)**



KORDIS JMK a.s. **(KOR)**



Knowledge Hub Moldova **(KHM)**



Faculty of Transport and Traffic Sciences, University of Zagreb **(ZITS)**

# Key Objectives

- Implementation of a **durable and resilient Linked Journey Planning Service in the Danube Region**
- Enhancement of the technical solution from **centrally distributed to fully distributed** system
- Further development of LinkingDanube service and **expansion of active systems**
- Development of an **organizational architecture** to complement the technical architecture
- Develop a **framework strategy and basis for the harmonized implementation of OJP in Europe** together with the main players
- **(National/organisational) action plans** for the implementation of OJP in the participating organizations and countries

# Key Objectives - Multimodality

Focus on the **integration of bike routing in the distributed service**

- **Improve travel information** for cyclists
- **Linking** rail and cycle transport (!) (e.g. bike-on-train information)
- Develop **seamless, cross-border, cross-provider, multimodal bike routing**
  
- Warrant the **compatibility** to other OJP-based travel information services like LinkingAlps and EU-Spirits
- Collaboration with other Journey Planning Services via OJP > **Expansion of the service coverage and modality mix**

# Project Status

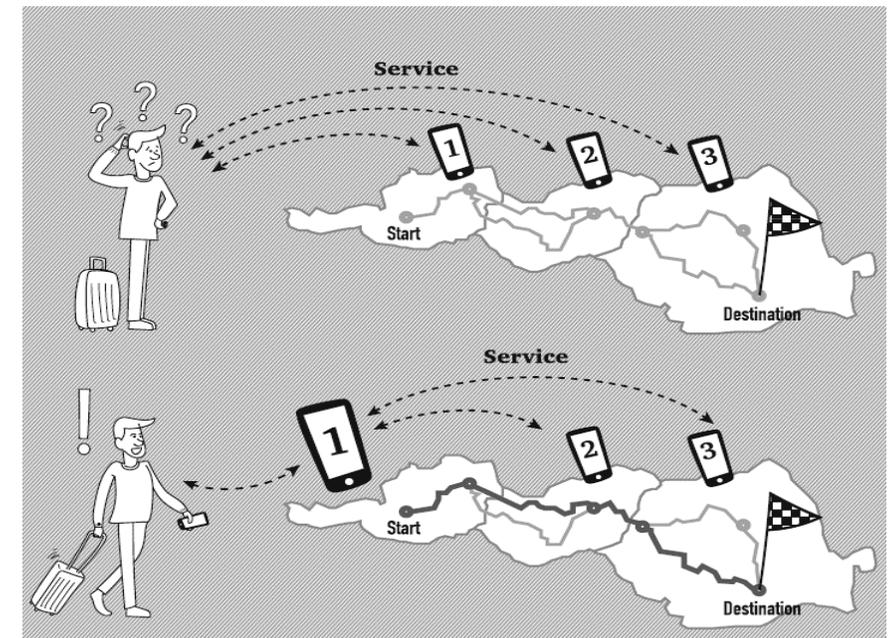
- Development of **technical architecture** is done
- Finalisation of **OJP Profile** and **requirements specifications**
- **Organisational architecture** → defining of organisational processes, roles and responsibilities is ongoing
- Development of **E-Learning Web-tool**
- Identifying **future adopters** needs in the Danube Region with regard to OJP deployment (who might be future adopters? what are their needs?)

# Why ,Linking of Services‘?

## Benefits...

### for the TRAVELLER

- **Simplified access** to sustainable, multimodal, seamless traveller information (across border and operators)
- Usage of **well-known JP App** of home service in the **language** of the traveller
- Information of the **highest quality and accuracy**
- Including **local transport/on-demand transport** (if available in the existing traveller information service)

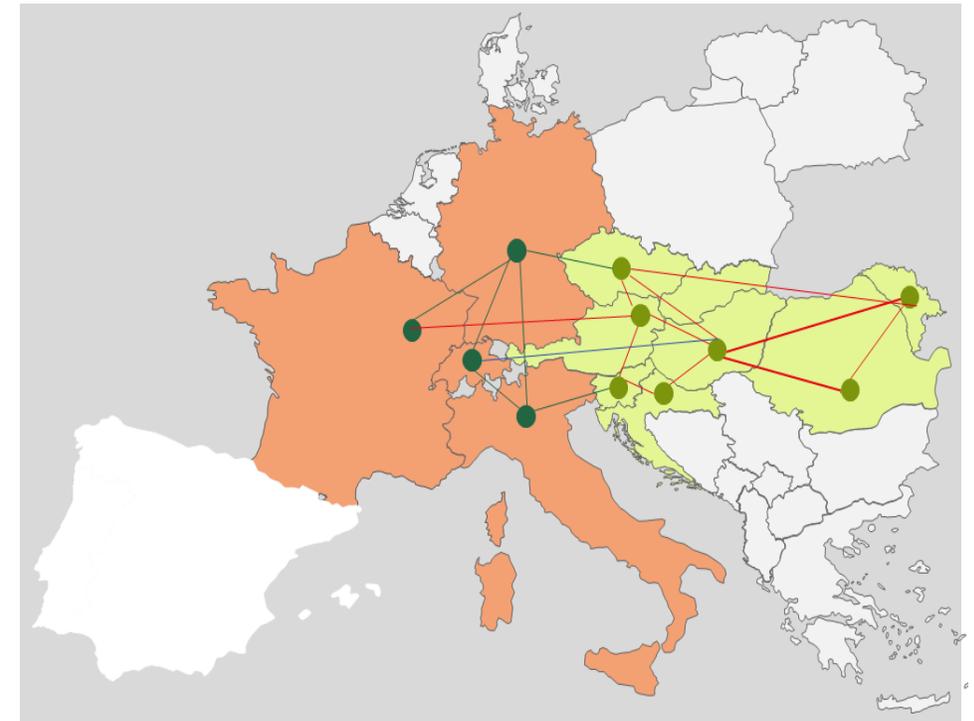


# Linking of Services

## Benefits...

### for the SERVICE PROVIDER

- **Sovereignty over data**
- Extension of the **range of the own system** by the coverage of all affiliated systems
- Thus, improvement of the **functionalities and quality of information** provision for customers
- **Strengthening the market position** of the local/regional service provider



# Linking of Services

## Benefits...

### for the MOBILITY SYSTEM

- **Supporting the sustainable mobility behavior** of travelers
- **Strengthening** of the market position of **small-scale / regional providers and regions** (vs. central, international platforms)
- **Strengthening the accessibility and connectivity** of rural areas
- Solution for **last / first mile issue**



# Linking of Services

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- Solution for **last / first mile issue**



# Linking Europe

A large event banner with a dark blue background and a network of blue nodes and lines. The word "Linking" is written vertically in large, light green letters on the left. The word "Europe" is written horizontally in large, light green letters on the right. The date "22. SEPT 2021" and "VIENNA | ZOOM" are written in white and light green. The registration email "OJP4Danube@austriatech.at" is at the bottom. Logos for Interreg Alpine Space LinkingAlps, EU-SPIRIT, and Interreg Danube Transnational Programme OJP4Danube are at the bottom right.

**Linking Europe**

**22. SEPT 2021**  
**VIENNA | ZOOM**

Please register at: [OJP4Danube@austriatech.at](mailto:OJP4Danube@austriatech.at)

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- Contact us directly:

[OJP4Danube@austriatech.at](mailto:OJP4Danube@austriatech.at)



# Danke für Ihre Aufmerksamkeit

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