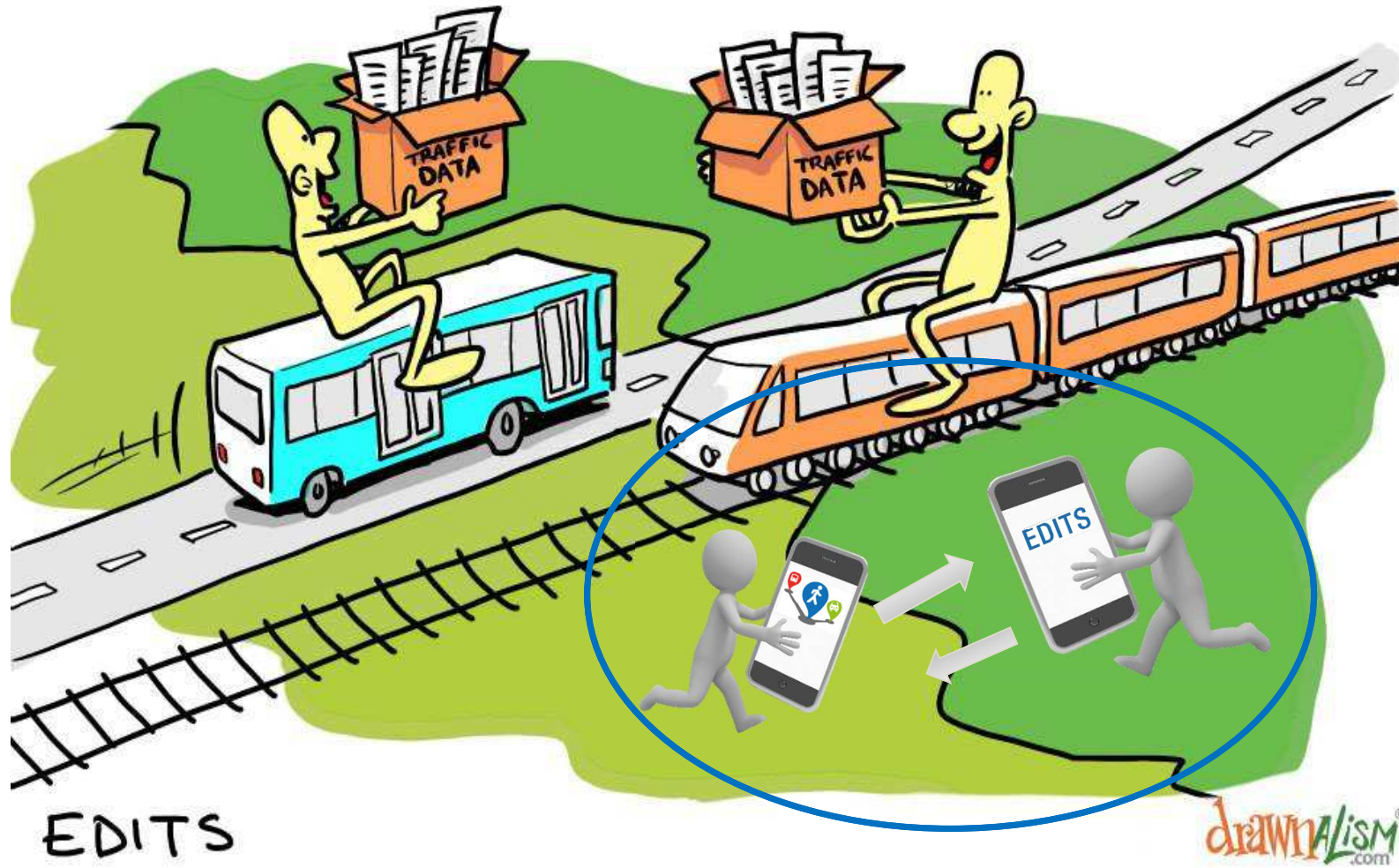


# **Initiatives and developments for linking multi-modal voyage planning services for passenger transport in the Danube Region**

# European policy framework

- **ITS Framework Directive (2010/40/EU)** which sets out Priority Actions. Under revision:
  - Extension of the TEN-T network
  - Integration with urban nodes
  - More focus on the development of multimodal transport
  - Increased support for Connected, Cooperative, Automated Mobility
- Sustainable and Smart Mobility Strategy – putting European transport on track for the future – COM(2020) 789
- **Delegated Regulations** for some Priority Actions of the Framework Directive
  - Require the implementation of National Access Points for traffic and transport data
  - Delegated Regulation EU 2017/926 for EU-wide Multimodal Travel Information Services
    - “A *key solution* to enhance the geographical coverage of travel information services and to support *Union-wide multimodal travel information* is by *linking local, regional and national travel information services*.”
    - “Upon request, travel information service providers *shall provide to another information service provider routing results* based on static, and where possible, dynamic information.”

# Data or Services?

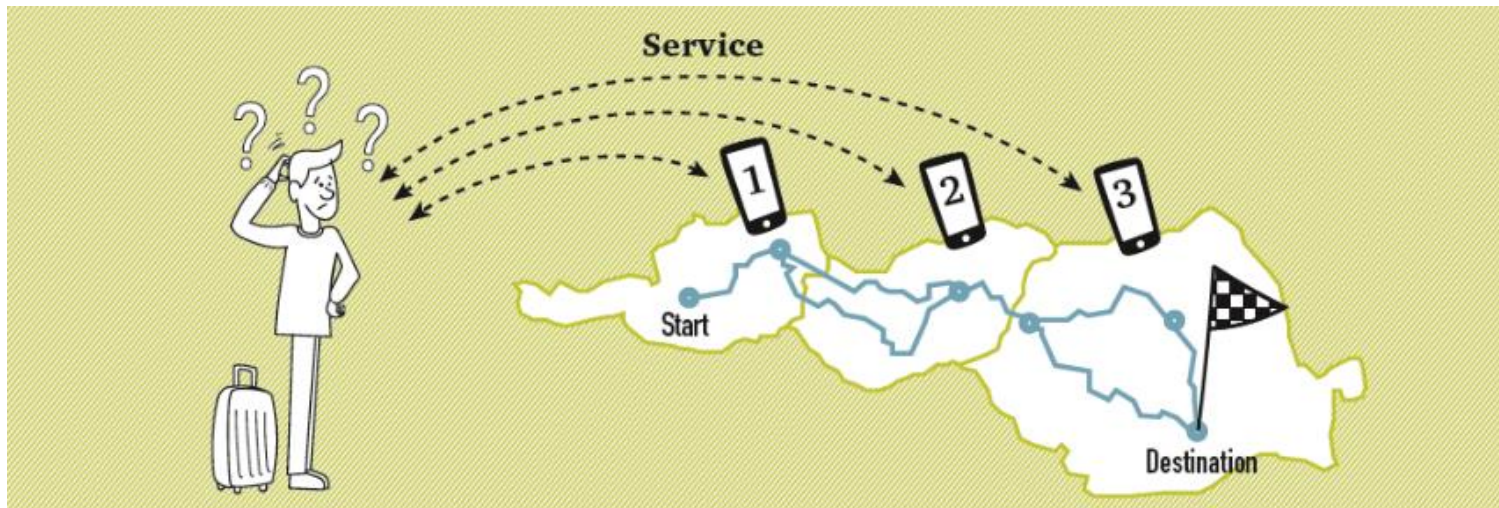


## Data or Services?



# Distributed Journey Planning

## Benefit for the user

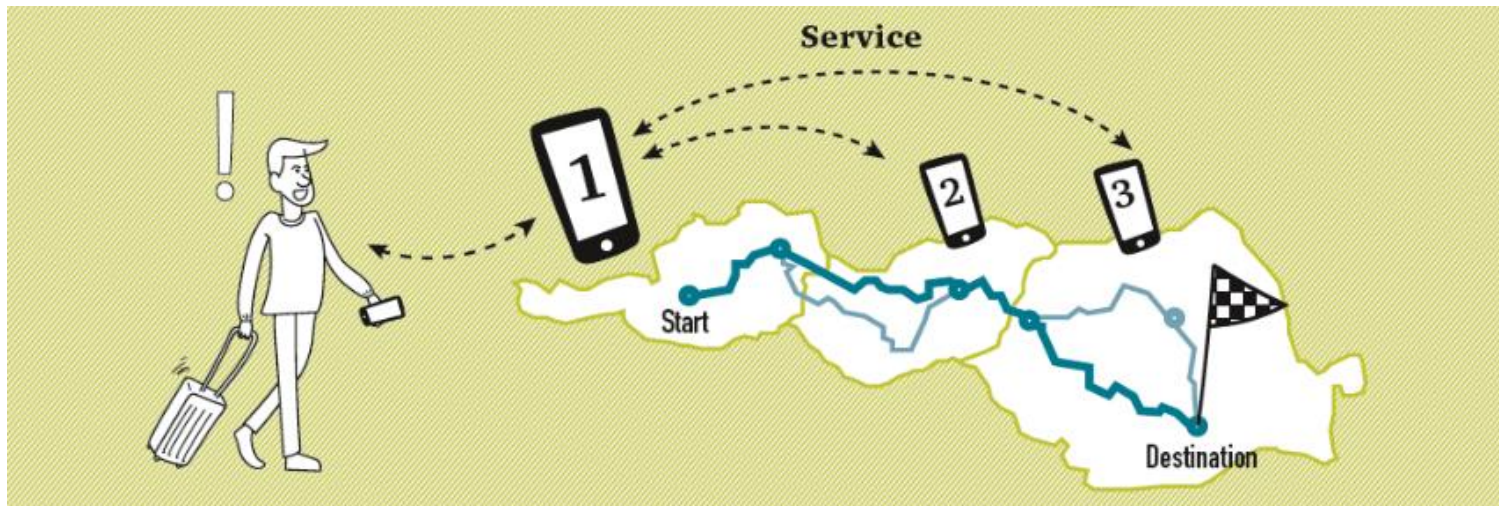


- for multimodal journeys crossing regional/national borders one integrated service is lacking
- lacking cross-border and cross-operator information



# Distributed Journey Planning

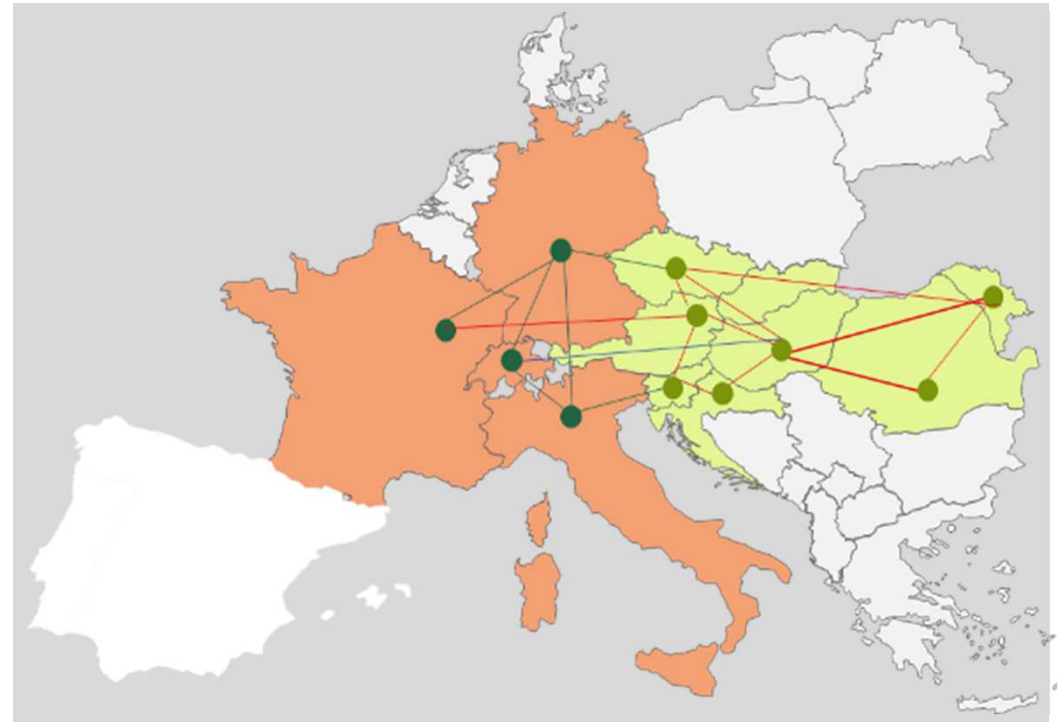
## Benefit for the user



- Information of the highest quality and up-to-dateness
- Simplified access to information – well-known APP

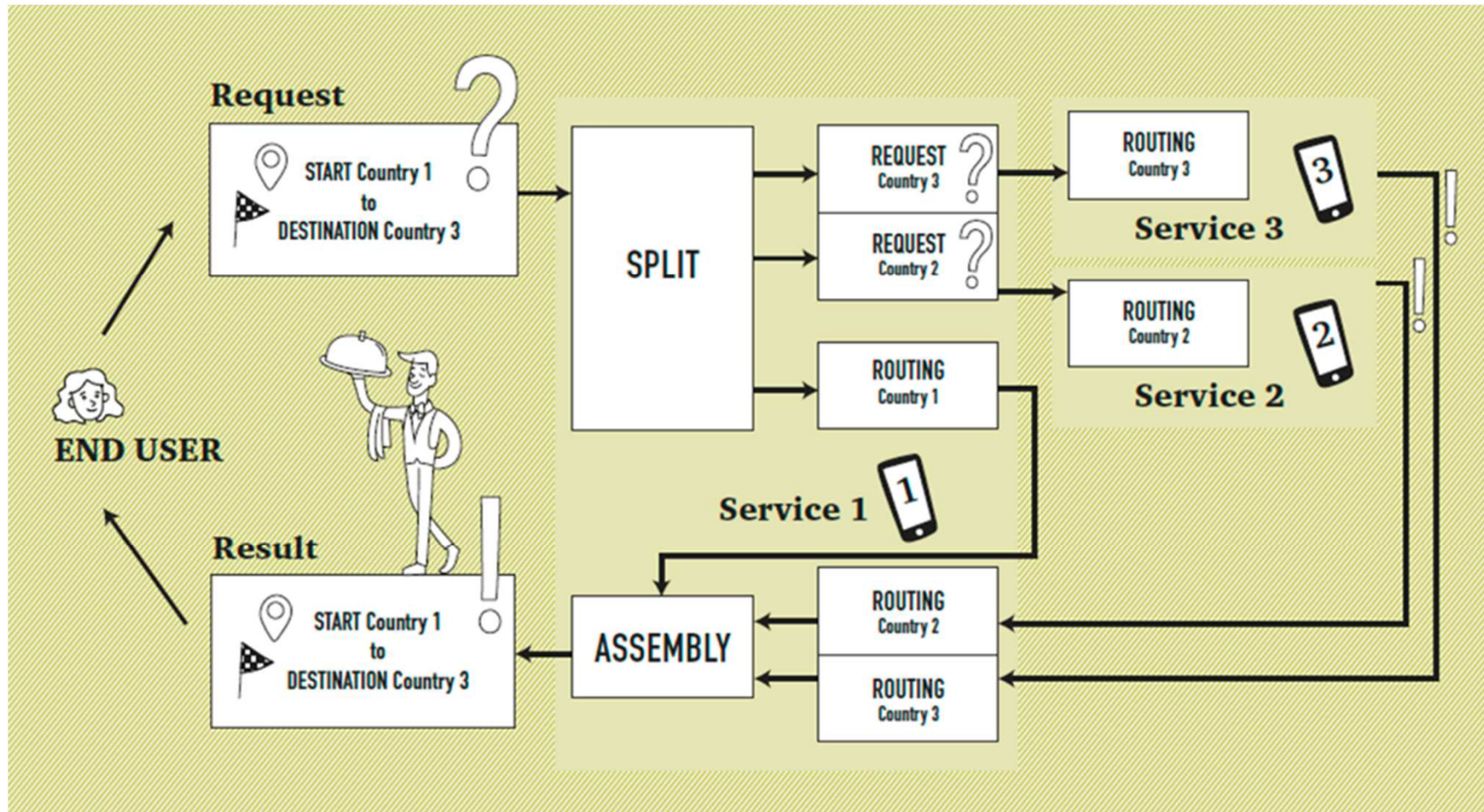
# Benefits of OJP – for operators

- **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



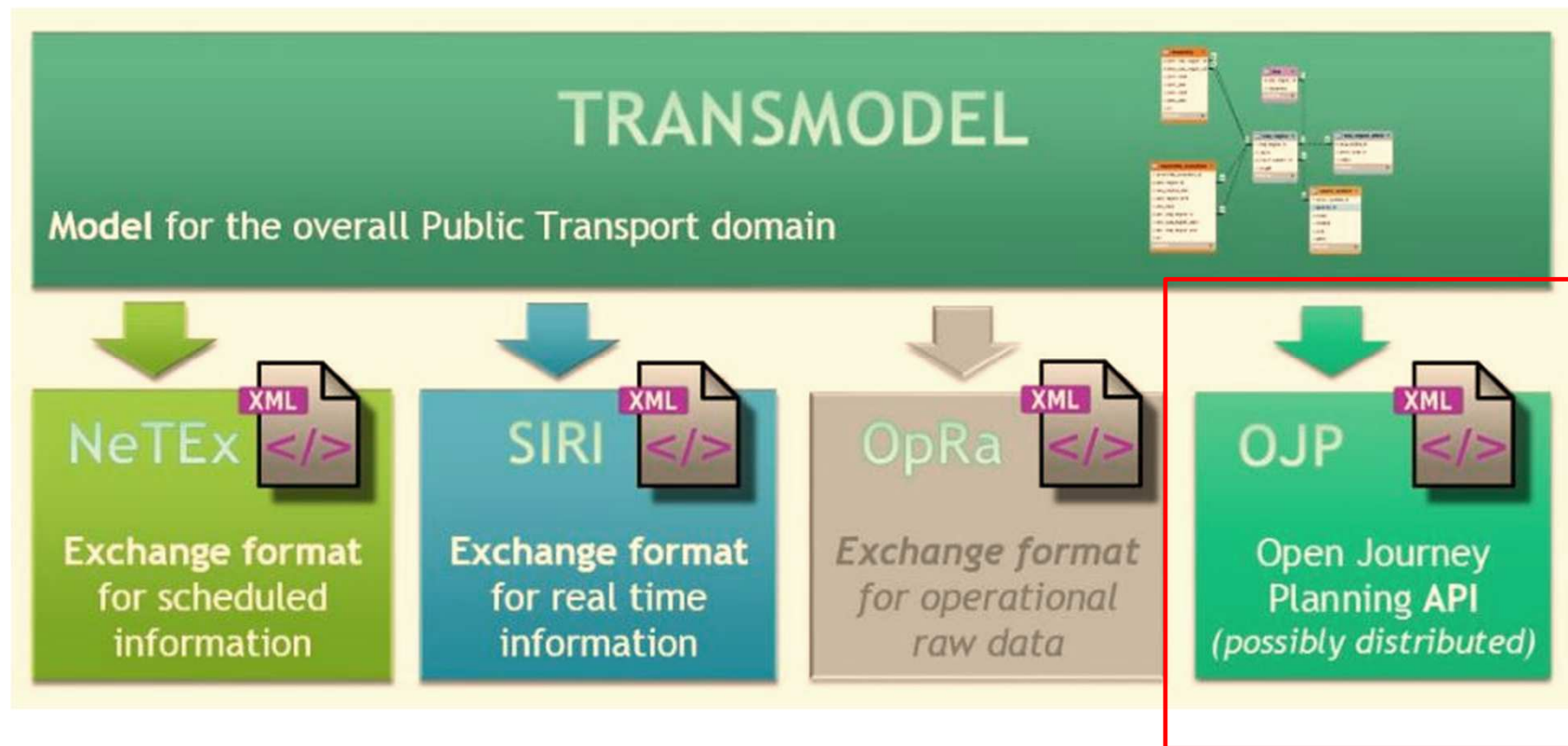


# Distributed Journey Planning





# Standardisation – Public transport standards family



# Standardisation



„OJP Standard“

## Publishing of CEN Standard for “linking of services”

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

Universal interface for service exchange

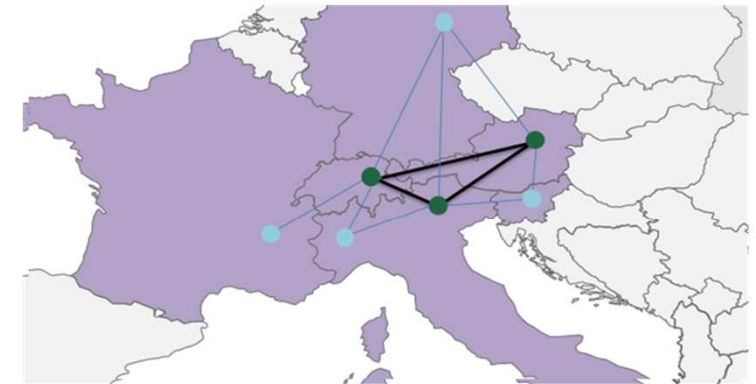
## OJP initiatives



Harmonisation  
(Profile!)



Know-How exchange



OJP4Danube  
Linking Danube



LinkingAlps

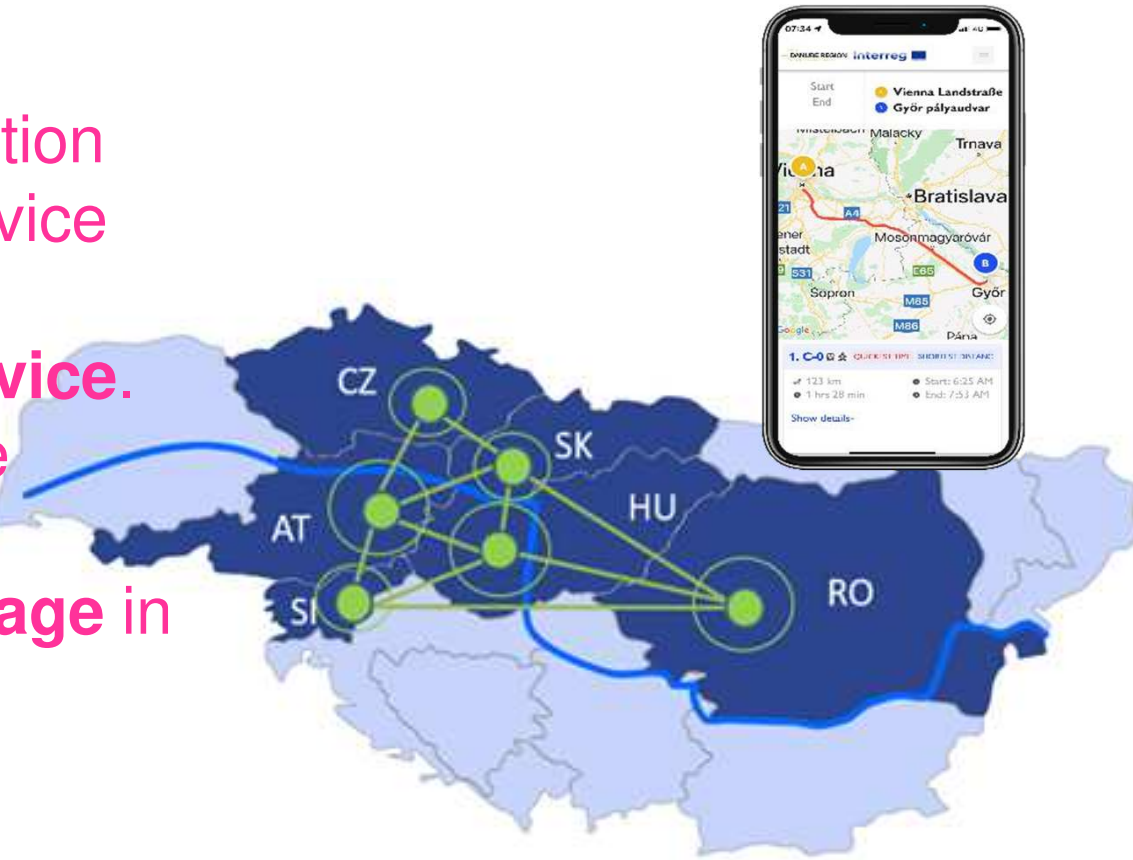


# OJP4Danube Project

## Objective:

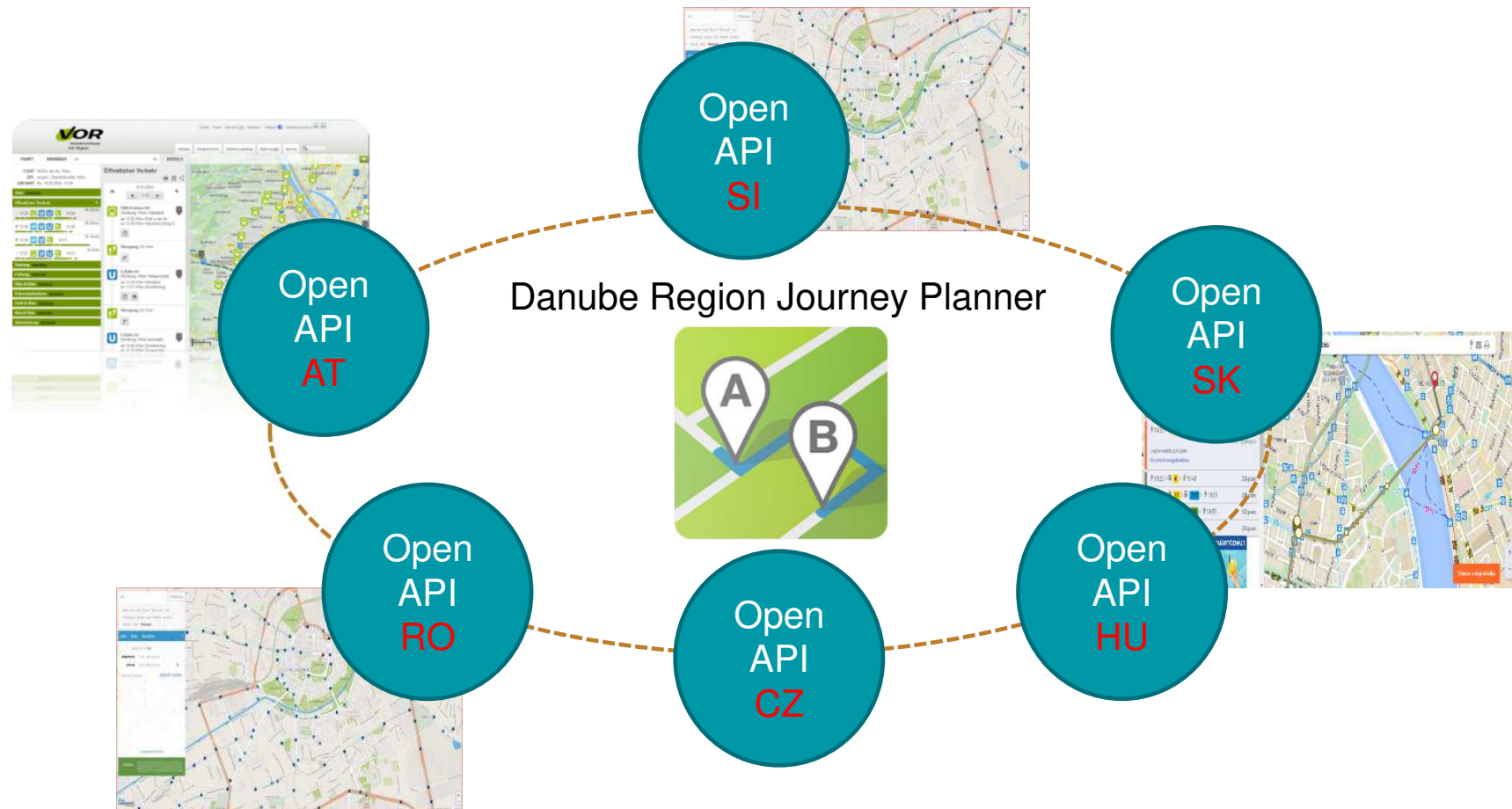
Create a transnational and cross-operator integration of the information into a single travel information service that will be tested, evaluated and demonstrated in an **end-user-service**.

(...). Particular focus will be on the integration of **cycling routes and relevant information for bike usage** in connection with other modes



# OJP4Danube - Linked Journey Planners

Harmonized interfaces (OJP – APIs)



# User interface: selected cross border features

## Walk/cycling distance:

- Input: maximum walking and cycling distance, maximum speed, default
- Output: walking and cycling legs highlighted, display length

## Bike-on-board:

- Input: check box, not hidden, one type of bike
- Output: static or real-time info available, but no reservation

## Bike routing:

- Input: preference of using EUROVELO routes
- Output: label routes and instructions, crossborder connections highlighted

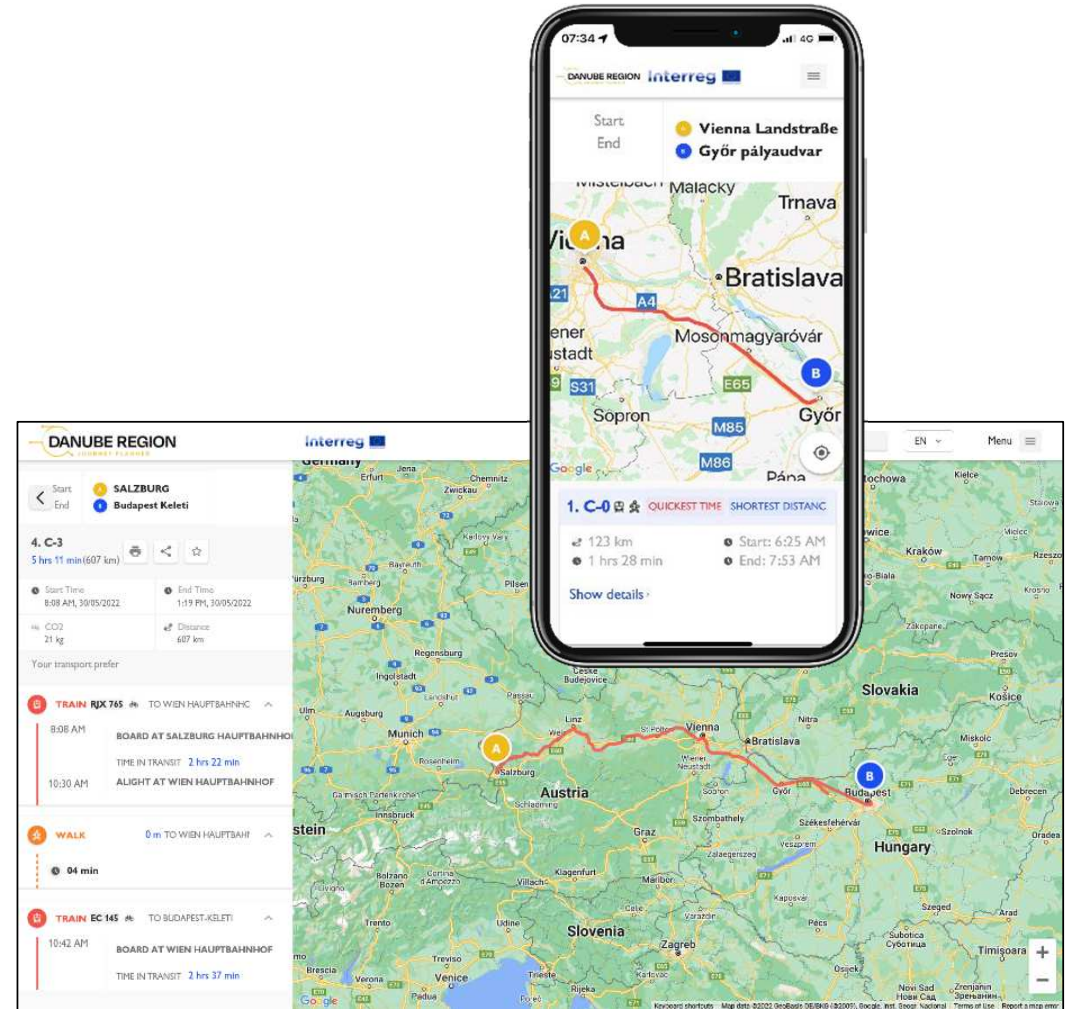


# Danube Region Journey Planner App

Native Mobile App - Android

Native Mobile App – iOS

Mobile friendly Webpage



# Technical Challenges

## Harmonized interfaces (OJP – APIs)

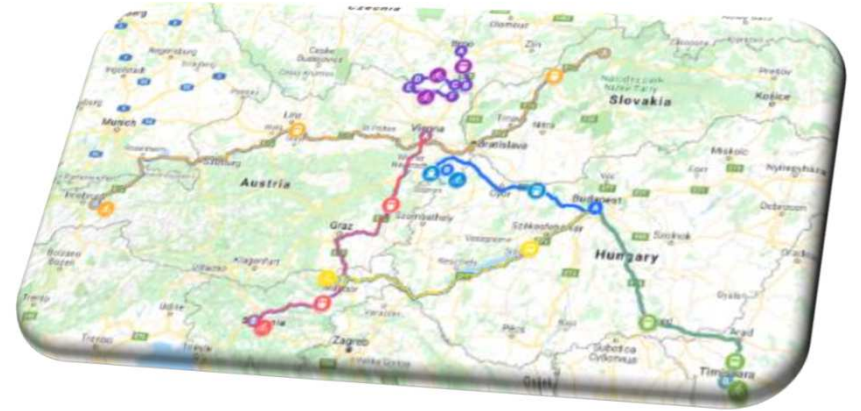
- Common Standard (OpenAPI - CEN/TS 177118)
- Selected OJP Profile
- Mock-up OJP Interface Validation Tool

## Dynamic Selection of Exchange Points

- Dynamic algorithm

## Entire chain performance

- EP selection performance
- LJP response times for complex/multiple queries



# Thank you!

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