

# 7 demonstrators:

- || Android + Empatica E4 watch App for trip personalization via sensors, to infer specific user profiles (e.g., User A never rides a bike, User C is stressed by the plane)
- || Multi-objective Optimization Tools, based on the concept of federation and decomposition and allow interoperability of journey planners
- || The urban soloist integrating car-pooling in an urban area and providing personalized travel solutions
- || OpenGeoBase, our multi-tenant distributed discovery service, to be used by software developers, transit agencies and stakeholders to discover information and data sources
- || The Internames-based infrastructure for dissemination of real-time travel data through pub/sub functionalities, where users are able to receive live updates about changes of selected DATEX II information
- || The Green Score Policy algorithm that assigns prizes, awards and discounts on the basis of the selected transport means, influencing mobility choices with the goal to reduce environmental impact
- || The Tariff Scheme algorithm for pricing rules that allow the transport operators that build partnerships to:
  - increase their profits
  - benefit passengers
  - reduce pollution



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n. 635867.

## Who:

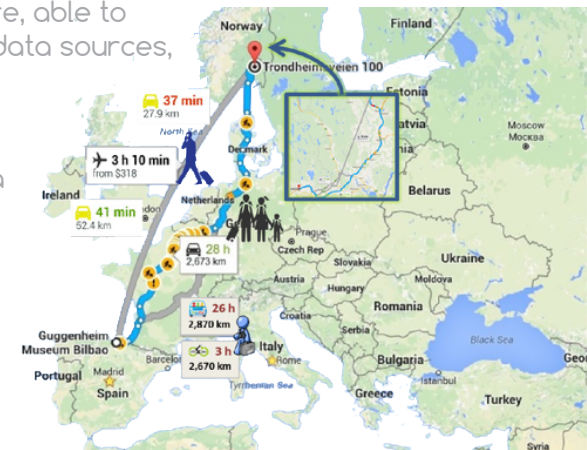


# Bon voyage

## What:

- \\ **For end-users:**  
providing the best information to go from a place to another, before and during the travel, door to door, with any combination of any transport means, taking into account real-time conditions and user preferences

- \\ **For the EU and ITS community:**  
providing a federated architecture, able to cluster planning services and data sources, exploiting an innovative communication network that collects and distributes all data required to optimize a travel



## Where:



## When:

April 2018

# Why:

**Trip mode:**  
Multi-modal (e.g. bike+train+bus+on foot) **VS.** Mono-modal

**Planning typology:**  
On-trip Real-time Event driven re-planning (e.g., in case delay of trains, construction work, etc.) **VS.** Pre-trip Static data Schedule driven

**Services:**  
Based on: user preferences behaviours profiles **VS.** Un-personalized User independent Schedule driven

**Transport data sources:**  
Millions of small scale, local public transport, private providers **VS.** big airlines, train operators only

**Data sharing:**  
New telecommunication network (Internames) **VS.** The current TCP/IP Internet

**Providers data handling:**  
Keep their data in their premises, with their formats and interfaces **VS.** Ask to transfer data to a third, centralized party and to comply with specific formats

**Transport solutions sources:**  
Anyone, including private citizens (e.g., for car sharing) **VS.** Professional-only

## Main achievements, so far:

- Use cases, system requirements, reference scenarios and system architecture
- Internames Communication System, with publish/subscribe and OGB DB services
- Intelligent Transport Functionalities: User Profiler, Multi-Objective Optimization, Tariff Scheme
- Definition of interfaces and application architecture
- Early prototypes of single components that will be integrated in the second half of the project
- Handling and adaptation of heterogeneous data

## Access restriction and privacy policies:

Anyone setting them up on published data **VS.** Unsecure or one-for-all solutions

## Operations and solutions:

Federated operations **VS.** Centralized solutions (thus implementing Directive 2010/40/EU to make ITSs interoperable across borders)

# How:

- \\ A new communication network concept (**Information Centric Network**), providing users with access to information by names, instead of providing communication channels between hosts, as it is now:
  - o Particularly suited to the mobile, heterogeneous, fragmented environment of ITS
  - o Secures the information itself, instead of securing the communication channels: just perfect for our needs
  - o Offers Publish/Subscribe services: key to easily re-plan on mutable conditions

- \\ **OpenGeoBase**, a decentralized large-scale storage system for building georeferenced mobile Apps

- \\ A **travel optimizer** based on the federation of heterogeneous optimization services, scalable enough to handle dense, continent-wide travel networks, real-time events and personalized travel preferences

- \\ **Machine learning-based user profiling techniques** for analyzing data from user feedback and sensors