

# ONE PAGE EXPERTISE DESCRIPTION

The aim of this document is to introduce your organisation to potential project leaders. Since there are hundreds of such descriptions circulating throughout Europe, please keep it short, concise and precise so potential project coordinators can quickly assess if your contribution would be useful. This document does not aim to provide an extensive overview of your activities, but to show in a few words your added value relevant to a specific topic or group of topics. **Please fill in one form per field or research/expertise.**

## INFORMATION ABOUT THE EXPERT

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## EXPERTISE OVERVIEW

### TOPIC(S) OF INTEREST:

HORIZON-CL4-2023-HUMAN-01-01: Efficient trustworthy AI - making the best of data (AI, Data and Robotics Partnership) (RIA)

### HEADLINE:

AI for routing optimization and other combinatorial problems

### POTENTIAL CONTRIBUTION:

Routing optimization offers huge opportunities to reduce the energy consumption of logistics and transportation. However, to solve such problems, algorithms are **data-intensive**. They notably require:

- Cartographic data including transportation delays (traffic jams etc.)
- Data about other transporters in case a collaboration is possible. These data are subject to confidentiality or **privacy** requirements.

**Cartographic data:** Nowadays, cartographic data is very expensive; only a handful of providers are available including Google Maps (US), Here (US) and TomTom (EU). The issue is that for 1000 points, one needs 1000.000 travel time estimates. With the traffic information, this gives rise to a huge data set, which is used once. A first objective is to **reduce the amount of such data** that is needed to use routing optimization AI. This would create a **data-efficient AI** for routing optimization.

**Collaboration among transporters:** At best, each transporter optimizes its transportation. There is no coordination among them, except for a handful set of freight exchanges that operate manually. In these exchanges, transporters can identify a freight to fill in their available slots. It is therefore not used at its full potential because all available transportation space is not used. This should be algorithmically integrated with the routing optimization and take **privacy/confidentiality requirements** into account to create a federated optimisation to use an optimal amount of available transportation space.