KDI : Knowledge and Data Integration

Developing a Transportation KG

KDI 2020 Project Proposal

Contents

Contents

Transportation Domain

- Transportation involves the particular movement of humans, goods or other things from a point A (a place in space) to a point B [i.e. to and from different locations]. Modes of transport include air, land (rail and road), water, cable, and pipeline. The field can be divided into infrastructure, vehicles and operations.

- Transportation infrastructure consists of the fixed installations, including roads, railways, airways etc., and terminals such as airports, railway stations, trucking terminals etc. Vehicles traveling on these networks may include automobiles, trains, trucks, aircrafts etc.

- The aim of the project is to create a modularized Knowledge Graph (KG) on transportation for data integration, using the iTelos Methodology.

Contents

Competency Queries

To provide a glimpse, competency queries which inform the inception of the development of the Transportation KG can be like:

- What are the all app-based road transport options for transit between point A and point B ?
- What is the cheapest and fastest public transport combination to travel from location A to location B in a particular province?
- .....

Contents

Standards

To follow the standards adopted in the datasets collected:

- INSPIRE
- GTFS
- iCal
- .....

Contents

Knowledge Resources

The reference knowledge resources for the task are:

- The Geo-eTypes Ontological Model
- The GTFS Ontology
- The W3C Time Ontology
- .....

Also take a look at:- Linked Open Vocabularies (LOV) and Public Transit Ontology

Contents

Data Resources

- Trentino Tansporti Open Data (for localisation in Trentino, Italy)
- European Data Portal
- Also by web scraping from relevant websites (if needed)
- .....

Contents

Outcomes

- Extended set of standard and terminologies supported with respect to transportation
- A generic KG and a set of localised KGs defined to support and integrate diverse data on transportation
- Datasets on transportation, cleaned and well formatted, aligned with the knowledge used to integrate them
- .....

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