



KNOWDIVE



KDI : Knowledge and Data Integration

KDI 2021 Project Proposals

Projects

- 1** **Geography**
- 2 Electronic Personal Health Record
- 3 Trentino Territory
- 4 Trentino Transportation
- 5 Food and Accommodation in Trentino
- 6 Education in Trentino
- 7 Sport & Wellbeing Facilities in Trentino
- 8 Events in Trentino (Research Project)
- 9 Lockdown Student Life in Trento (Research Project)
- 10 Facilities activity in lockdown (Research Project)
- 11 Entity Identification (Research Project)

Geography - Project's Domain & Purpose

- This project considers the geography of an European country as domain in which integrate heterogeneous data. Such kind of data carry the information about the territory, including for example, mountains, lakes, rivers and others territory's point of interest.
- The project final result (KG) can be used to provide a general purpose service helping the users to find information about the geographical and naturalistic points of interest offered by the country's territory. This purpose can be described, in form of user request, as follow:

"A service which help the users to identify interesting places to visit in the <country selected>, based on the users interests about the naturalistic attractions offered by the relative territory."

Geography - Project's input resources

■ Data sources:

- European Open Portal <https://data.europa.eu/it>
- Open Street Map <https://www.openstreetmap.org>

■ Knowledge sources:

- INSPIRE <https://github.com/subhashishhh/Geospatial-Ontology>
- Schema.org <https://schema.org/>

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EHR - Project's Domain & Purpose

- This project considers healthcare heterogeneous data about, patients, healthcare professionals, healthcare facilities and others entities, collected from different European data sources, from different European countries, having different healthcare systems.
- The project final result (KG) can be used to provide a service helping the users to collect their own healthcare data and be able to provide and retrieve such information in different European countries. This purpose can be described, in form of user request, as follow:

"A service which help the citizens to handle their own healthcare data, in a context in which the citizens moves around Europe"

EHR - Project's input resources

■ Data sources:

- EMRBOTS <http://www.emrbots.org>
- Synthea patient generator
<https://github.com/synthetichealth/synthea>
- FHIR data generator
<https://github.com/smart-on-fhir/sample-patients>

■ Knowledge sources:

- FHIR <https://hl7.org/FHIR/>
- Schema.org <https://schema.org/>

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Territory - Project's Domain & Purpose

- This project considers the Trentino region as environment in which integrate heterogeneous geographical data. Such kind of data carry the information about the region's territory, including for example, mountains, lakes, rivers and others territory's point of interest.
- The project final result (KG) can be used to provide a general purpose service helping the users to find information about the geographical and naturalistic points of interest offered by the Trentino's territory. This purpose can be described, in form of user request, as follow:

"A service which help the users to identify interesting places to visit in Trentino, based on the users interests about the naturalistic attractions offered by the Dolomites territory."

Territory - Project's input resources

■ Data sources:

- Open Data Trentino <https://dati.trentino.it/>
- Open Street Map <https://www.openstreetmap.org>

■ Knowledge sources:

- INSPIRE <https://github.com/subhashishhh/Geospatial-Ontology>
- Schema.org <https://schema.org/>

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Transportation - Project's Domain & Purpose

- This project considers the Trentino region as environment in which integrate heterogeneous data about transportation, considering both personal private movements and public transportation service. Such kind of data carry the information about public transportation services, vehicles, bus stations, train stations, railways, highways, simple streets, public transportation service timelines and trip schedules, and other information supporting the movements in the region.
- The project final result (KG) can be used to provide a service helping the users (for example tourists) to find information about the transportation service in Trentino, but also about the possible solution to move around the region territory. This purpose can be described, in form of user request, as follow:

"A service which help the users to reach different points of interest in Trentino, exploiting the public transportation service, and/or using personal vehicles."

Transportation - Project's input resources

■ Data sources:

- Open Data Trentino <https://dati.trentino.it/>
- Open Street Map <https://www.openstreetmap.org>
- Trentino trasporti <https://www.trentinotrasporti.it/open-data>
- Dati Open <http://www.datiopen.it/it/opendata>

■ Knowledge sources:

- GTFS <https://developers.google.com/transit/gtfs>
- Schema.org <https://schema.org/>

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Food and Accommodation - Project's Domain & Purpose

- This project considers the Trentino region as environment in which integrate heterogeneous data about accommodation facilities and food providers. Such kind of data carry the information about hotels, bed & breakfast, apartments, but also supermarkets, little food shops, public open market, food delivery services, restaurants and others.
- The project final result (KG) can be used to provide a general purpose service helping the users (for example tourists) to find information about the facilities for food and accommodation based on their flavours. This purpose can be described, in form of user request, as follow:

"A service which help the users to find accommodation and different kind of food in Trentino."

Food and Accommodation - Project's input resources

■ Data sources:

- Open Data Trentino <https://dati.trentino.it/>
- Open Street Map <https://www.openstreetmap.org>

■ Knowledge sources:

- DBpedia <https://www.dbpedia.org/>
- Schema.org <https://schema.org/>

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Education - Project's Domain & Purpose

- This project considers the Trentino region as environment in which integrate heterogeneous data about the education facilities. Such kind of data carry the information about universities, departments, libraries, research, but also about courses, publications, projects, and other information related to the education activity.
- The project final result (KG) can be used to provide a general purpose service helping the users (for example students) to find information about the education facilities and services offered by Trentino region. This purpose can be described, in form of user request, as follow:

"A service which help the students to find university courses, projects and material to support their education and university career."

Education - Project's input resources

■ Data sources:

- Open Data Trentino <https://dati.trentino.it/>
- Open Street Map <https://www.openstreetmap.org>
- Digital University <https://webapps.unitn.it/du/>

■ Knowledge sources:

- VIVO <https://bioportal.bioontology.org/ontologies/VIVO>
- Schema.org <https://schema.org/>

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Sport & Wellbeing - Project's Domain & Purpose

- This project considers the Trentino region as environment in which integrate heterogeneous data about the wellbeing facilities. Such kind of data carry the information about sport centers, gyms, swimming pools, sport associations, wellness centres, SPA, and other facilities and services supporting *"healthy life style"*.
- The project final result (KG) can be used to provide a general purpose service helping the users (for example residents in Trento and other Trentino cities) to find information about the wellness facilities and services offered by Trentino region. This purpose can be described, in form of user request, as follow:

"A service which help the citizens to find sport and wellness facilities suitable for their, hobbies, training and life style in general."

Sport & Wellbeing - Project's input resources

■ Data sources:

- Open Data Trentino <https://dati.trentino.it/>
- Open Street Map <https://www.openstreetmap.org>

■ Knowledge sources:

- BBC Sports Ontology <https://www.bbc.co.uk/ontologies/sport>
- Schema.org <https://schema.org/>

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Events - Project's Domain & Purpose

- This project considers the Trentino region as environment in which integrate heterogeneous data about the events and celebrations, together with the information about the territory which host such events.
- The project final result (KG) can be used to provide a general purpose service helping to understand how and where the events are organized on the Trentino's territory. This purpose can be described, in form of user request, as follow:

"A service which help the citizens to find events of interest in Trentino."

Events - Project's input resources

■ Data sources:

- Meetup <https://www.meetup.com>
- Open Data Trentino <https://dati.trentino.it/>
- Open Street Map <https://www.openstreetmap.org>

■ Knowledge sources:

- INSPIRE <https://github.com/subhashishhh/Geospatial-Ontology>
- Schema.org <https://schema.org/>

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Student Life - Project's Domain & Purpose

- This project considers the Trento city as environment in which integrate heterogeneous data about the student's movements and activities during the lockdown period caused by the Covid-19 pandemic. Such kind of data, collected within the Wenet EU project¹, carry the information about places frequented by the students and student's timeline, based on their movements.
- The project final result (KG) can be used to provide a general purpose service helping to understand how the lockdown period influenced the personal and social life of the student community in Trento. This purpose can be described, in form of user request, as follow:

"Which is the student's habits during the lockdown, based on their movements ?"

¹ <https://www.internetofus.eu/project/>

Student Life - Project's input resources

■ Data sources:

- WeNet Diversity pre-pilot data (provided by Knowdive research group)

■ Knowledge sources:

- FOAF <http://www.foaf-project.org/>
- HeLiS ontology v1.10 <https://horus-ai.fbk.eu/helis/>

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Student Life - Project's Domain & Purpose

- This project considers the Trento city as environment in which integrate heterogeneous data about the facilities frequented by university students during the lockdown period caused by the Covid-19 pandemic. This project is based on the same data as the previous one, but aims to produce an analysis from Trento's facilities point of view.
- The project final result (KG) can be used to provide a general purpose service helping to understand how the lockdown period influenced the facilities work and activities in Trento. This purpose can be described, in form of user request, as follow:

"Which have been the facilities most active in lockdown, based on students movements ?"

Student Life - Project's input resources

■ Data sources:

- WeNet Diversity pre-pilot data (provided by Knowdive research group)

■ Knowledge sources:

- FOAF <http://www.foaf-project.org/>
- HeLiS ontology v1.10 <https://horus-ai.fbk.eu/helis/>
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Entity Identification - Project's Domain & Purpose

- This project aims to integrate data about multiple kind of entities , such as facilities, geography, transportation, within Trentino region. The main objective of the integration is to design a system able to identify uniquely the different entities collected and integrated.
- The project final result (KG) can be used to provide a service of identification for data collected from multiple data sources. This purpose can be described, in form of user request, as follow:

"An identification service able to uniquely identify real word entities collected from multiple and heterogeneous data sources"

Entity Identification - Project's input resources

■ Data sources:

- Open Data Trentino <https://dati.trentino.it/>
- Open Street Map <https://www.openstreetmap.org>
- Dati Open <http://www.datiopen.it/it/opendata>

■ Knowledge sources:

- INSPIRE <https://github.com/subhashishhh/Geospatial-Ontology>
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Projects

- Do you have your own Purpose ?
- Do you have your own Resources ?

Chose your own project !



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