



# A Metadata Knowledge Graph

**KGE 2023 Project Proposal** 

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- 2 Context
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- 4 Data Resources
- 5 Schema Resources
- 6 Outcomes

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# **Project Objective**

- The context to be considered for this project, is an Open Data environment, concretely represented as a web portal through which several kind of information can be retrieved.
- The web portal allows the users to collects different kind of datasets that can be considered **singularly** or with meaningful **links** between them.
- In order to provide to the users the best way to retrieve the data they need, the datasets collected by the web portal have to be well described through metadata.
- The metadata is the main focus of this KGE project. With objective to build a KG able to represent the different kind of datasets available in the web portal, as well as the connection between them.

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### Context

- The web portal considered for this proposal, called "Data Scientia" collects all the resources produced by KGE processes following the iTelos methodology.
- As the KGE course will teach, there are several kinds of resources produced by the methodology, identified within 5 different inforamation layers:
  - L1: conceptual resources
  - L2: language resources
  - L3: teleology resources
  - L4: ontology resources
  - L5: data value resources
- In a single KGE process, resources representing instances of all the above layers are produced, related to a single Purpose!
- Resources relative to a single purpose have to be linked together by specific metadata.

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# **Purpose**

■ The different resources, through the Data Scientia web portal, can be retrieved by the user **singularly**, but the user must be able to collect all the different kind of resources related to a **specific KGE process** (Purpose).

"A KG supporting the Data Scinetia web portal's users to find the most suitable resource for their needs, as well as all the resources linked by the one searched."

**NOTE**: this project will be extended after the KGE course. It is suitable for anyone who is interested in future collaboration with the KnowDive research group.

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### **Data Resources**

- To achieve the project objective the students have to analyze the different kind of resources collected within the Data Scientia web portal.
- For this reason the following resources and information will be provided to the students:
  - Existing KGE projects collecting instances for all the information layers.
  - Data Scientia resources and projects from which the most important information can be collected.

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### Schema Resources

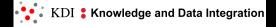
The reference schemas provided to achieve the project's objective are:

- A Data Scientia top level description and requirements, in order define better the usage of the web portal, thus identifying the most important data descriptors to be transformed in metadata.
- A set of resources specific requirements, for each kind of resources collected within the web portal.
- **Schema.org**: for modelling general concepts https://schema.org/docs/full.html

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### **Outcomes**

- The KG produced as project's final outcome has to satisfy the requirements defined for the web portal users.
- The final KG structure will include the information provided by the resources metadata, **shaped as entities and relative attributes**.Such a KG will be **tested through a queryable endpoint**, through which the users will be able to find the information required to satisfy their purpose.
- The data used to populate and test the final KG will be those collected from existing KGE projects.
- The final KG, the metadata defined for each kind of resource, as well as the new purpose specific schema produced, will be collected as project's resources in order to be reused by future projects.





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