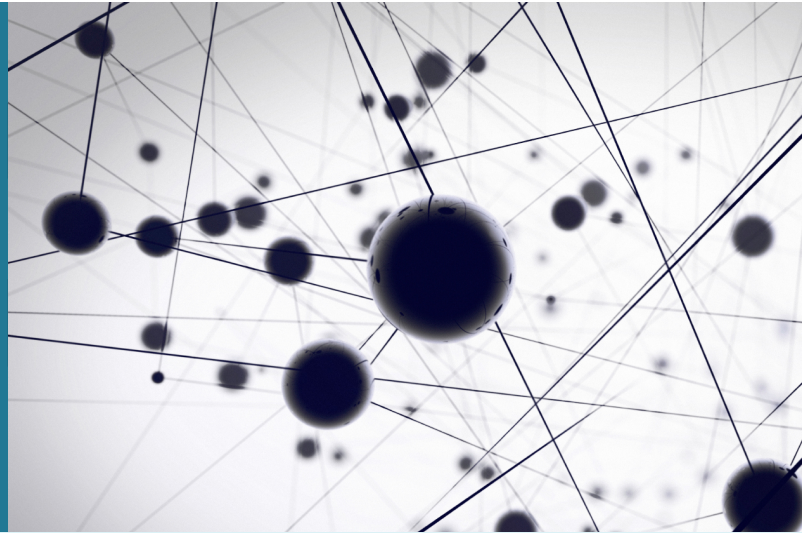


DynaMO

Proposing methods and tools to understand changes that affect knowledge organization systems (KOS) and exploiting this information to automatize the maintenance of existing mappings between KOS over time.



INSPIRATION

Information systems that exploit semantic technologies are widely used in many fields these days and are particularly important in the medical and biomedical domains. Currently, institutions that produce medical data rely on these systems to make semantic data explicit in order to promote data sharing and data exchange.

However, the medical and biomedical domains are highly dynamic and knowledge is constantly evolving. Models for representing this knowledge such as ontologies, thesauri, terminologies or, more generally, knowledge organization systems (KOS) are at the heart of information systems and thus need to be updated as new terms are defined in order to remain useful. Moreover, due to the great size of the medical domain, multiple KOS are necessary in order to obtain the largest coverage possible. This is why mapping, or cross-referencing between KOS elements, is used. However, as every new evolution in KOS can directly impact existing mappings, new techniques and tools are required to ensure consistency between the cross-referenced KOS. This maintenance must take into account all of the specificities of the medical sub-domain as well as the structure and format of the particular KOS.

This highly dynamic nature of KOS impacts the validity of mappings and their maintenance requires a great effort in adaptation and validation. Although this is a critical issue, existing approaches are not intelligent enough to deal with it without recomputing the whole set of mappings each time a new version of KOS is released.

INNOVATION

DynaMO aims to develop and propose a new method of mapping maintenance. The objective is to provide a tool-supported formal framework that takes into account the characteristics of changes affecting KOS elements and KOS models as well as the nature of the existing mappings in order to automatise the adaptation of mappings that are made invalid by KOS evolution.

IMPACT

DynaMO provides the opportunity to build on existing expertise in the field of knowledge engineering. KOS applications are becoming indispensable for the healthcare sector, and the framework developed by DynaMO could be applied not only locally within Luxembourg's new national eSanté platform but also internationally through online dissemination.

Partners

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Contact

5, avenue des Hauts-Fourneaux
L-4362 Esch-sur-Alzette
phone: +352 275 888 - 1 | LIST.lu

Dr Cédric PRUSKI (cedric.pruski@list.lu)
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