Unravelling concept relation tangles:
The representation of interdisciplinary domains in knowledge bases

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Representing domains in knowledge bases and capturing their corresponding conceptual structures are fundamentally challenged by the existence of interdisciplinary partially overlapping domains. This paper will describe and discuss methods for meeting this challenge in the attempt to establish KB-N, a web-based knowledge base covering economic-administrative domains that are central to the knowledge universe defined and delimited by a standard business school curriculum, in casu NHH, the host institution of the knowledge base, which comprises both English and Norwegian terminology.

The KB-N knowledge base is a concept-oriented text and term based knowledge management system, including language technology applications for use primarily in translation, documentation and publishing. Planned applications include implementation in the e-learning system available for researchers, lecturers and students. Thus knowledge acquisition, extraction and representation, in addition to domain evolution, are key concepts in my research.

The variously related domains to be represented in the knowledge base share to a great extent seemingly identical concepts and terminology, and frequently borrow concepts from each other. This results in multidimensional concept structures that require other systems for representing the concepts of the domains than strictly hierarchical structures. Consequently, the methods for structuring concepts must be more flexible and offer a more comprehensive range of relations to represent the concept structures inherent in the domains than current approaches allow.

For this purpose, terminology science seems to offer more refined methods that those offered in e.g. theory on artificial intelligence or computational linguistics, as discussed in Budin (1996) and Nuopponen (2005). My paper will describe and discuss such refinements and their implications for the construction of ontologies in knowledge bases.

A demonstrator version of the KB-N system is available at www.nhh.no/spr/sff/kbn/

Budin, G. (1996). Evolution of Scientific Terminologies. In C. Galinski & K.-D. Schmitz (eds). *TKE'96: Terminology and Knowledge Engineering*. Frankfurt/M: Indeks Verlag, 37–34.

Nuopponen, Anita (2005). Concept Relations v2 An update of a concept relation classification. In B. Nistrup Madsen & H. Erdman Thomsen (eds). *Terminology and Content Development, Proceedings from TKE 2005, 7th International Conference on Terminology and Knowledge Engineering*. Copenhagen Business School, 127-138.