

## SNS-Navigator: A Graphical Interface to Environmental Meta-Information

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### Abstract

*SNS-Navigator* is a web-based graphical interface to environmental meta-information provided by the Semantic Network Service of the German Federal Environment Agency (UBA). Environmental topics can be searched for and displayed as interactive graphical representations of *topic map* fragments. Users can navigate through the topic map by clicking onto the displayed topics.

### 1. Introduction

Environmental meta-information, i.e., information about environmental information, is a very important aid for accessing and managing large collections of environmental information as contained in libraries, databases, or the worldwide web. Meta-information consists of descriptions that facilitate the retrieval, processing and management of such resources.

A vocabulary is necessary to construct the meta-information, i.e., formulate descriptions of information resources. In the simplest case a list of predefined *keywords* can be used for this purpose. The usability of the keywords can be enhanced by embedding them into a knowledge structure such as a *Thesaurus* (ISO 1985, 1986). Thesauri conceive keywords as *terms* that can be related to one another. Thesauri typically support three kinds of mutual relationships: (1) the “used-for”-relationship which allows finding terms starting from their synonyms, (2) a specialisation hierarchy, which reflects the relationship between broader and narrower terms, and (3) the linkage between related terms. A long standing example of an environmental thesaurus is UMTHESES (“*Umweltthesaurus*”), which has been used as a vocabulary for a number of environmental information systems in the German Federal Environment Agency UBA (“*Umweltbundesamt*”) for many years (Batschi 1994, UBA 2006). A similar example at the European level is the General Multilingual Environmental Thesaurus GEMET (EIONET 2004).

There are several approaches to extend the thesaurus idea towards more explicit knowledge structures also known as *Semantic Networks* or *Ontologies* (cf. Visser et al. 2001; Rütger et al. 2006). In these representations, terms are replaced by more specific types of entities and a larger number of specific relationship types can be represented. The work described here aims at such a kind of knowledge structure.

Due to the complexity of such knowledge structures, new interfaces to meta-information become necessary. In the following a graphical approach is presented and applied for environmental meta-information.

### 2. The Navigator

*SNS-Navigator* is a web-based graphical interface to environmental meta-information. It operates on a *semantic network* that is formed by entities of various categories such as *environmental terms*, *geographic locations*, and *temporal events*. A query interface can be used to search for these entities also referred to as *topics*. Search results can be displayed as interactive graphical representations of *topic map*

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