



## **Production of a search and browse interface for an environmental science thesaurus**

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The strength of metadata has been improved in recent times through the use of controlled vocabularies and thesauri. These are lists of terms that have been agreed by groups of domain specialists for marking up metadata and data. Controlled vocabulary terms can be enriched semantically by linking to terms within the list or to terms in other lists creating thesauri. The Natural Environment Research Council (NERC) Vocabulary Server (NVS) currently holds around 110,000 terms in over 250 lists covering multiple environmental science domains with around 100,000 relationships stored. The NVS is used by clients ranging from the marine community (e.g. SeaDataNet) to the atmospheric community (e.g. Climate & Forecasting). Through an application programming interface (API) the NVS provides client software with access to this semantic knowledge.

The power of a semantic resource is only exposed when an appropriate client interface is built on top of the access methods. Through a consultation process with NERC partners, the need for a new search interface was highlighted. Users reported the existing interface was too complicated, with only advanced users able to find the appropriate terms for their use. Another complaint was that the semantic richness of the NVS was not being exploited to its full, with no interface for displaying the related terms for a given concept. It was decided that any new search interface must include the ability to view and navigate a term's relationships. By showing demonstration versions of the interface to the community of users a feedback loop was initiated that allowed the development to be guided and steered by its eventual end users.

Some of the issues faced during the design and development phase were:

- the NVS API follows no standard
- the methods do not match the features of the interface leading to the chaining of existing methods to produce the semantic richness needed by the client interface
- some caching was required to improve the speed of the client

We present here the final client interface and its features. Through a simple interface a user can search for terms across the complete NVS. Matching terms are displayed with appropriate metadata, its vocabulary list and definition. When a user clicks through to an individual term they are presented with a term browser page. This displays information about the versioning of the term, its mappings and relationships. The relationships are displayed in groups, by the vocabulary list they belong to, allowing the user to 'cross-walk' from one term to another. This client interface has unlocked the semantic wealth stored within the NVS and made it accessible to all users regardless of technical skill.