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Knowledge management for space activities in the digital era (2)

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TOWARDS AN ESA CORPORATE TAXONOMY

Abstract

Within information handling taxonomies are classification systems which normally have mono- hierarchical structures in form of trees. With increasing ramification the level of the specification becomes more detailed. The importance of classification systems is manifold. Classification can be used for structuring a set of terms and hence supports content management and information retrieval.

The creation of taxonomy is difficult, especially in cases of larger organizations such as the European Space Agency (ESA). ESA is an international organization with 8 centers in Europe. Taking the ground stations into consideration the ESA network is spread all over the world. ESA has 10 directorates and about 30 satellite projects. The work is based on 25 technical disciplines. This demonstrates the wide range of the space activities and hence the complexity for the generation of a classification system.

Considering this variety it became clear that a throughout hierarchical structure for the taxonomy would not be feasible. An approach of multiple hierarchies or facets has been selected.

This faceted approach allows describing information with a multidimensional perspective thus providing more discriminatory power than a single hierarchy. It enables the taxonomy to be more modular and extensible, which entails a more robust taxonomy in the long term.

The ESA Corporate Taxonomy has the following structure:

- Corporate facets: The ESA taxonomy defines 8 major facets, hence any information item can potentially be described by 8 different attributes or viewpoints. These facets contain general-purpose terms, which are very likely to be used in many different areas within ESA.
- Community facets: They are hierarchies that contain controlled vocabularies specifically used by different organisational units, projects, programmes, missions, etc. Therefore, they lead to a federated development of the Corporate Taxonomy, where different communities can develop their own classification systems, either by reusing corporate terms or refining them with specific terminology tailored to their needs.

A key point to consider when developing additional community facets, is that the corporate facets should be used as a reference framework, which not only provides terms to be reused, but also general

containers or descriptors that provide a means of finding commonalities between related terms created by different communities.

In addition to the creation of the taxonomy a maintenance service has to be provided.

The proposed contribution consists of three parts:

- General remarks about taxonomy (importance, application)
- Description of the ESA faceted approach
- Required services.