

Data Clouds for product life-cycle management

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ABSTRACT

This paper addresses removing barriers for sharing information in order to facilitate Product Life-cycle Management (PLM), which is used to optimize the life-cycle of products within the civil engineering

sector. The PLM concept holds the promise of integrated information produced throughout a product's life-cycle – for everyone in an organization and at every managerial and technical level – along with key suppliers and customers to use it. In practice, however, civil engineering data is hard to share in a controlled manner between different parties and different phases. As such, a solution is needed to create, retrieve, use, and store coherent data about civil engineering systems in a way that multiple sources from different parties can coexist and be used in cohesion.

This is where the concept of Data Clouds comes in. A Data Cloud is a coherent set of information that can be used by different software from different suppliers unbound by the location where the information is stored. A Data Cloud can be a single autonomous set of information or a collection of different sets which link information into a coherent whole. A Data Cloud can describe a civil engineering product throughout its life-cycle while different parts (subsets) of the data are managed by different stakeholders in the supply chain, with different software from different suppliers. Information in a Data Cloud is retrievable via the Internet and can be (re)used by different parties to add data about a civil engineering product, contributing to one big 'cloud' of data that covers parts of or even the whole range of the PLM concept.

We suggest that Semantic Web technology is particularly suitable to realise Data Clouds. This technology meets the required conditions for both managing civil engineering data (flexible, scalable, yet remaining coherent and consistent) and sharing

such data (vendor-neutral, enabler for integration). Successful implementations in the field show that the suggested data solution is not just a good choice theoretically, but has also been proven to already be effective in practice.

REFERENCES

Semmtech (2016). <http://www.semmtech.com>.