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Data structures for electronic product catalogues for building services —

Part 4: Data dictionary structures for product catalogues

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Foreword

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A list of all parts in the ISO 16757 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Building information modelling (BIM) provides a means for describing and displaying information required throughout the asset life cycle. Increasingly this modelling approach is expanding to encompass all aspects of the built environment, including civil infrastructure, utilities and public space.

The ISO 16757 series provides the structure of a product catalogue model for data sharing and data exchange of product models in product catalogues. It contains specifications for:

— selection of products from different product classes and product variants;

— combining product components and accessories to products;

— geometrical representation in technical systems;

— connectivity to other products in models of technical systems;

— calculation of dynamic property values in accordance with the product behaviour in technical systems.

This document outlines the requirements for data dictionaries to support both semantic definitions and data modelling in product catalogues. ISO 12006-3 defines the underlying data model for related data dictionaries and serves as the foundation of this document.

Tools are used to define, simulate and operate building services systems (including e.g. HVAC systems and building automation systems). To build such a system basically means to interconnect different products in a way that the resulting system fits into the building and works in accordance with the functional requirements. The products are selected from product catalogues of manufactures or distributors. Important aspects of these products are their connection points and information on their behaviour in different situations.

The goal of this document is to support the engineering tools by enabling them to identify the relevant information easily in different data dictionaries. In the area of building services, a few generic concepts are widely used:

— dynamic properties describing the behaviour of products in different situations and load cases that are dependent on external properties describing external conditions;

— a distinction of data dictionary entries representing products, meta data of catalogues, and specific features of products like subfunctions or ports.

This document defines common kinds of data dictionary elements that provide a way to identify the basic structures across data dictionaries.

Besides this document, the ISO 16757 series contains the following documents:

— ISO 16757-1 describes the fundamental concepts and assumptions about the creation of manufacturer-related product catalogues as BIM data exchange models. It describes the content of product catalogues and the mapping of the content to a data format.

  This data format provides the opportunity to search and select product data together with accessory data which can be read into software applications for planning, designing, calculating and simulating as well as for facility managing.

— ISO 16757-2 describes the concept of geometry of the building services product data of a product catalogue in form of 2D symbols and 3D shape models and specifies the required spaces and ports.

  It contains the fundamental concepts and assumptions about the parametric geometry of special products, used in planning software applications e.g. for air condition systems such as ducts and transitions between different forms. It also contains a concept for representing products as 3D solid models, which are made from thin sheet metal.