International Standard

ISO 16739-1

Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries -
Part 1:
Data schema

Second edition 2024-03

Installation

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Abstract

This document represents an open international standard for information used in Building Information Modeling (BIM) that is exchanged and shared among software applications used by the various participants in the construction or facility management industry sector. This document includes definitions that cover information required for buildings and infrastructure works over their life cycle. This edition of the document added coverage of information required for infrastructure facilities including bridges, roads, railways, waterways and port facilities.

This document comprises the publication of a data schema, its documentation, the property and quantity set definitions and the mechanism of an exchange file format structure.

Definitions from this document are used to support different recognized work flows in the construction and facility management industry sector, representing information deliveries. Such information deliveries can be described according to ISO 29481.

Different implementation levels of this document can be defined to better support multiple information deliveries, they are referred to as a Model View Definition (MVD). Each MVD identifies which subset of the definitions of this document imposes requirements for implementation in software applications. Conforming software applications need to identify the model view definition they conform to when applying for software certification.

The following are within the scope of this edition of this document:

1. BIM exchange format definitions that are required during the life cycle phases of buildings and infrastructure:
   o demonstrating the need;
   o conception of need;
   o outline feasibility;
   o substantive feasibility study and outline financial authority;
   o outline conceptual design;
   o full conceptual design;
   o coordinated design;
   o procurement and full financial authority;
   o production information;
   o construction;
   o operation and maintenance.

2. BIM exchange format definitions that are required by the various disciplines involved within the life cycle phases:
   o architecture and civil engineering design;
   o service and utilities engineering;
   o structural engineering;
   o procurement;
   o construction planning;
   o facility and utility management;
   o project management;
   o client requirement management;
   o industry authorities for permits and approval.

3. BIM exchange format definitions including:
   o project structure;
   o physical components;
   o spatial components;
   o analysis items;
   o processes;
   o resources;
   o controls;
   o actors;
   o context definition.