

# SVENSK STANDARD

## SS-EN ISO 29481-1:2017



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### **Bygginformationsmodeller – Manual för överföring av data – Del 1: Metodologi och format (ISO 29481-1:2016)**

### **Building information models – Information delivery manual – Part 1: Methodology and format (ISO 29481-1:2016)**

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The European Standard EN ISO 29481-1:2017 has the status of a Swedish Standard. This document contains the official version of EN ISO 29481-1:2017.

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EUROPEAN STANDARD

**EN ISO 29481-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2017

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English Version

**Building information models - Information delivery  
manual - Part 1: Methodology and format (ISO 29481-  
1:2016)**

Modèles des informations de la construction -  
Protocole d'échange d'informations - Partie 1:  
Méthodologie et format (ISO 29481-1:2016)

Bauwerks-Informations-Modelle - Informations-  
Lieferungs-Handbuch - Teil 1: Methodik und Format  
(ISO 29481-1:2016)

This European Standard was approved by CEN on 24 February 2017.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**SS-EN ISO 29481-1:2017 (E)**

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## **European foreword**

The text of ISO 29481-1:2016 has been prepared by Technical Committee ISO/TC 59 “Buildings and civil engineering works” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 29481-1:2017 by Technical Committee CEN/TC 442 “Building Information Modelling (BIM)” the secretariat of which is held by SN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2018, and conflicting national standards shall be withdrawn at the latest by April 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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### **Endorsement notice**

The text of ISO 29481-1:2016 has been approved by CEN as EN ISO 29481-1:2017 without any modification.

## SS-EN ISO 29481-1:2017 (E)

### Introduction

This International Standard has undergone a major review in the light of refined approaches to the development of information delivery manuals and their technical implementation in software readable forms. It is important to note that these changes do not render existing information delivery manuals (IDM) invalid.

Building information modelling provides a digital technology for describing and displaying information required in the planning, design, construction and operation of constructed facilities. Increasingly, this modelling approach is expanding to encompass all aspects of the built environment, including civil infrastructure, utilities and public space. These are collectively referred to as construction processes. This approach to managing information brings together the diverse sets of information used during the life cycle of the built environment into a common information environment, reducing, and often eliminating the need for the many types of paper documentation currently in use.

This approach is commonly referred to as building information modelling (BIM; reflecting its initial application in the architectural domain), while the same acronym is used to refer to the product of the process, the information model itself, or building information model (BIM).

Though the focus of construction processes described above is on the physical fabric of the built environment, BIM technology can also benefit the processes associated with managing the use of space within buildings, urban neighbourhoods and cities at the broader scale, as well as infrastructure networks and facilities. These are referred to here as use cases.

An IDM provides help in getting the full benefit from a BIM. If the required information is available in the BIM to support a construction process or use case, and the quality of information is satisfactory, then the process itself will be greatly improved.

For this to happen, there needs to be a common understanding of the processes involved across the entire life cycle development of a built environment project, including the information that is required for and results from the execution of that process. This applies to any activity that results in an exchange of information and may not relate directly to a BIM, e.g. the process to arrive at a work plan or contractual agreement.

This part of ISO 29481 sets out a methodology for the provision of an integrated reference document that describes the processes and data required in the development or management of a constructed facility. It describes how to identify and describe the processes undertaken within that context, the information required for their execution and the results. This part of ISO 29481 also describes in general terms how this information can be further detailed to support solutions provided by software developers, enabling its reuse, and configured to meet national, local and project needs.

In summary, this part of ISO 29481 provides a basis for reliable information exchange/sharing for users so that they can be confident that the information they are receiving is accurate and sufficient for the activities they need to perform. The development of this part of ISO 29481 has been driven by the need of users for reliability in information exchange.



# Building information models — Information delivery manual —

## Part 1: Methodology and format

### 1 Scope

This part of ISO 29481 specifies

- a methodology that links the business processes undertaken during the construction of built facilities with the specification of information that is required by these processes, and
- a way to map and describe the information processes across the life cycle of construction works.

This part of ISO 29481 is intended to facilitate interoperability between software applications used during all stages of the life cycle of construction works, including briefing, design, documentation, construction, operation and maintenance, and demolition. It promotes digital collaboration between actors in the construction process and provides a basis for accurate, reliable, repeatable and high-quality information exchange.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6707-1, *Buildings and civil engineering works — Vocabulary — Part 1: General terms*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6707-1 and the following apply.

#### 3.1 actor

person, organization or organizational unit (such as a department, team, etc.) involved in a construction process

#### 3.2 building information modelling BIM

use of a shared digital representation of a built object (including buildings, bridges, roads, process plants, etc.) to facilitate design, construction and operation processes to form a reliable basis for decisions

Note 1 to entry: The acronym BIM also stands for the shared digital representation of the physical and functional characteristics of any construction works.

#### 3.3 BIM software application

software application that is used to create, modify, analyze, manage, publish, share, expire, or otherwise manipulate elements of a BIM

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### 3.4 business requirement

requirement that describes in business terms what needs to be delivered or accomplished

### 3.5 information constraint

statement that formally defines or constrains the scope of a piece of information due to some aspect of the business, a rule under which an organisation operates or a policy or decision that influences a process

### 3.6 class

type or collection of things that share common attributes

### 3.7 construction works

everything that is constructed or results from construction operations

[SOURCE: ISO 6707-1:2014, 3.1.1]

Note 1 to entry: This can refer to a building, piece of civil infrastructure (road, bridge, pipeline, etc.) or a landscape element and is extended to include aggregations of those elements to form an urban precinct, campus, or other institutional facility.

### 3.8 construction process

process that uses *construction resources* to achieve *construction results*

Note 1 to entry: Each construction process can be split up into its component processes.

### 3.9 exchange requirement

**ER**  
defined set of information units that needs to be exchanged to support a particular business requirement at a particular process phase (or phases)/stage (or stages)

### 3.10 information delivery manual

**IDM**  
documentation which captures the business process and gives detailed specifications of the information that a user fulfilling a particular role would need to provide at a particular point within a project

Note 1 to entry: This can be referred to as an information delivery specification (IDS).

### 3.11 IDM components

basic elements that form an IDM: interaction maps/transaction maps, process maps and exchange requirements

### 3.12 information unit

individual information item, such as a window identifier or a room depth

### 3.13 interaction map

representation of the roles and transactions relevant for a defined purpose

### 3.14 interaction framework

formal description of the elements of interaction, including definition of roles, transactions, messages in transaction, and data elements in messages

**3.15  
model**

representation of a system that allows for investigation of the properties of the system

**3.16  
model view definition  
MVD**

computer-interpretable definition of an exchange requirement, specifically bound to one or more particular standard information schemas

Note 1 to entry: A model view definition (MVD) is also referred to as a view definition, a subset (of a schema) and a conformance class (CC) especially in ISO 10303.

**3.17  
object**

part of the perceivable or conceivable world

Note 1 to entry: An object is something mental or physical toward which thought, feeling, or action is directed.

**3.18  
process map  
PM**

representation of the relevant characteristics of a process associated with a defined business purpose

**3.19  
role**

functions being performed by an actor at a point in time

Note 1 to entry: The role of an actor is determined by action and outcome and not necessarily by the profession or trade followed by the actor.

**3.20  
transaction**

communication event that fulfils a relationship between two roles

**3.21  
transaction map**

representation of a set of messages that are exchanged between participating roles for a particular purpose

## **4 Information delivery manual**

### **4.1 General**

This Clause describes a series of concepts and principles that inform the development of an IDM.

### **4.2 Users of this part of ISO 29481**

The main users are expected to be the IDM developers who create interaction maps, process maps, exchange requirements and information constraints using knowledge elicited from end users and solution providers.

In addition, some users of specific IDMs might identify needs for new IDMs and thus become users of this part of ISO 29481. These users include the following:

- professional IDM-developers and solution providers;
- information users, i.e. executive users and end users concerned with producing the content of the IDMs and benefiting from the result.