



SLOVENSKI STANDARD

oSIST prEN ISO 7817:2023

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Informacijsko modeliranje gradenj - Raven informacijskih potreb - 1. del: Pojmi in načela (ISO/DIS 7817:2023)

Building Information Modelling - Level of Information Need - Part 1 Concepts and principles (ISO/DIS 7817:2023)

Bauwerksinformationsmodellierung - Informationsbedarfstiefe - Teil 1: Konzepte und Grundsätze (ISO/DIS 7817:2023)

Modélisation des informations de la construction (BIM) - Niveau du besoin d'information - Concepts et principes (ISO/DIS 7817:2023)

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91.010.01	Gradbeništvo na splošno	Construction industry in general

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Building information modelling — Level of information need — Concepts and principles

Modélisation des informations de la construction (BIM) — Niveau du besoin d'information — Concepts et principes

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 442, *Building Information Modelling (BIM)* (as EN 17412-1:2020) and drafted in accordance with its editorial rules. It was assigned to Technical Committee ISO/TC 59, *Buildings and civil engineering works*, Subcommittee SC 13, *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)* and adopted under the “fast-track procedure”.

A list of all parts in the ISO 7817 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

This document sets out the concepts and principles for defining the level of information need and information deliveries being part of the information exchange processes during the life cycle of built assets when using building information modelling (BIM). Those concepts and principles can deliver clear benefits to all participants in the various life cycle phases of built assets as they provide a common understanding on the right level of information needed at a certain time. One purpose of defining the level of information need is to prevent delivery of too much information. Information exchange should ensure the required information to be delivered at the agreed time for the agreed purpose to facilitate verification and validation processes.

This document provides methods for describing information to be exchanged according to exchange information requirements. The exchange information requirements specify the wanted information exchange. The result of this process is an information delivery.

There is a need that these concepts and principles are described in a common and comparable way to allow services related to building information modelling to be procured and offered on a global scale. The need has arisen by the fact that there are several conflicting terms, concepts and usages in place, internationally, that hinder the objective of having a common understanding and practise in describing the level of information need. It is therefore helpful not to use an acronym to refer to level of information need as this can oversimplify these concepts.

The concepts and principles contained in this document are aimed at all those involved in the asset life cycle. This includes, but is not limited to, the asset owner/operator, the client, the asset manager, the design team, the construction team, an equipment manufacturer, a technical specialist, a regulatory authority, an investor, an insurer and an end-user.

The information exchange, as well as related topics such as the exchange information requirements and the information delivery are defined and explained in context of two related standards:

ISO 19650-1, *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 1: Concepts and principles*; and

ISO 29481-1, *Building information models — Information delivery manual — Part 1: Methodology and format*.

Building information modelling — Level of information need — Concepts and principles

1 Scope

This document specifies concepts and principles to establish a methodology for specifying level of information need and information deliveries in a consistent way when using building information modelling (BIM).

This document specifies the characteristics of different levels used for defining the detail and extent of information required to be exchanged and delivered throughout the life cycle of built assets. It gives guidelines for principles required to specify information needs.

The concepts and principles in this document can be applied for a general information exchange and while in progress, for a generally agreed way of information exchange between parties in a collaborative work process, as well as for an appointment with specified information delivery.

The level of information need provides methods for describing information to be exchanged according to exchange information requirements. The exchange information requirements specify the wanted information exchange. The result of this process is an information delivery.

This document is applicable to the whole life cycle of any built asset, including strategic planning, initial design, engineering, development, documentation and construction, day-to-day operation, maintenance, refurbishment, repair and end-of-life.

2 Normative references oSIST prEN ISO 7817:2023

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The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 6707-1:2020, *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 29481-1:2016, ISO 6707-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

information container

named persistent set of *information* (3.11) retrievable from within a file, system or application storage hierarchy

EXAMPLE Including sub-directory, information file (including model, document, table, schedule), or distinct sub-set of an information file such as a chapter or section, layer or symbol.

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Note 1 to entry: Persistent information exists over a timescale long enough for it to have to be managed, i.e. this excludes transient information such as internet search results.

Note 2 to entry: Naming of an information container should be according to an agreed naming convention.

[SOURCE: ISO 19650-1:2018, 3.3.12, modified - Note 1 to entry has been removed]

3.2 information delivery milestone

scheduled event for a predefined information exchange

[SOURCE: ISO 19650-2:2018, 3.1.3.2]

3.3 information exchange

act of satisfying an information requirement or part thereof

[SOURCE: ISO 19650-1:2018, 3.3.7]

3.4 information model

set of structured and unstructured *information containers* ([3.1](#))

[SOURCE: ISO 19650-1:2018, 3.3.8]

3.5 level of information need

framework which defines the extent and granularity of *information* ([3.11](#))

Note 1 to entry: One purpose of defining the level of information need is to prevent delivery of too much information.

[SOURCE: ISO 19650-1:2018, 3.3.16]

3.6 verification

confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

[SOURCE: ISO 9000:2015, 3.8.12, modified — Notes 1 to 3 to entry have been removed]

3.7 validation

confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled

[SOURCE: ISO 9000:2015, 3.8.13, modified — Notes 1 to 3 and cross references have been removed]

3.8 breakdown structure

decomposition of a defined scope into progressive levels

[SOURCE: ISO 21511:2018, 3.13 modified — “work” has been deleted from the term, “scope of the project and programme” has been replaced with “scope”, “progressively lower levels consisting of elements of work” has been replaced with “progressive levels”]

3.9 object

any part of the perceivable or conceivable world

[SOURCE: ISO 12006-2:2015, 3.1.1, modified — Note 1 to entry has been removed]

3.10 geometry

shape, size, and location of an *object* (3.9)

[SOURCE: ISO/IEC 13249-3:2016, 3.1.2.27, modified — “size” has been added, “geographic location” has been replaced with “location”, “feature” has been replaced with “object”]

3.11 information

meaningful data

[SOURCE: ISO 9000:2015]

3.12 geometrical information

information (3.11) expressed using *geometry* (3.10)

3.13 alphanumerical information

information (3.11) expressed using characters, digits and symbols or tokens

EXAMPLE Mathematical symbols and punctuation marks are such tokens.

3.14 documentation

collection of documents related to a given subject

[SOURCE: ISO 82045-1:2001, 3.2.4, modified — Notes to entry 1 to 4 have been removed]

3.15 information deliverable

information container (3.1) used to fulfil an appointment

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4 General

To support information exchange, level of information need should be used.

The level of information need provides a framework for describing information exchanged in terms of geometrical information, alphanumerical information and documentation. Different purposes have their own needs of geometrical information, alphanumerical information and documentation.

The level of information need should be used to discuss and agree on the information delivery between two or more actors.

The level of information need describes information requirements that can be human-readable and machine-interpretable.

5 Framework to specify the level of information need

5.1 General

In specifying the level of information need and how information is going to be delivered the following prerequisites shall be considered:

- purposes for the use of the information to be delivered;
- information delivery milestones for the delivery of the information;
- actors who are going to request and actors who are going to deliver the information;