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Building information models - Information delivery manual - Part 2: Interaction framework (ISO 29481-2:2025)

Bauwerksinformationsmodelle - Handbuch der Informationslieferungen - Teil 2: Interaktionsframework (ISO 29481-2:2025)

Modèles des informations de la construction - Protocole d'échange d'informations - Partie 2: Cadre d'interaction (ISO 29481-2:2025)

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Modèles des informations de la construction -
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Bauwerksinformationsmodelle - Handbuch der
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Interaktionsframework (ISO 29481-2:2025)

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European foreword

This document (EN ISO 29481-2:2025) has been prepared by Technical Committee ISO/TC 59 "Buildings and civil engineering works" in collaboration with 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of an identical text or by endorsement, at the latest by June 2026, and conflicting national standards shall be withdrawn at the latest by June 2026.

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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International Standard

ISO 29481-2

Building information models — Information delivery manual —

Part 2: Interaction framework

*Modèles des informations de la construction — Protocole
d'échange d'informations —*

Partie 2: Cadre d'interaction

**Second edition
2025-12**

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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. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (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 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)*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 442, *Building Information Modelling (BIM)*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 29481-2:2012), which has been technically revised.

The main changes are as follows:

- introduced updates that better integrate the interaction framework within the concept of digital IDM communication;
- aligned terminology and practices with other related standards.

A list of all parts in the ISO 29481 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.

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Introduction

Collaboration between the participants involved during the life cycle of assets is pivotal to the efficient delivery and operation of assets. Organizations collaborate within specific use cases to achieve higher levels of quality and greater re-use of existing knowledge, information experience and resources. A significant condition of collaboration is the opportunity to communicate, re-use and share information efficiently, and to reduce the risk of loss, contradiction or misinterpretation.

The ISO 29481 series on the information delivery manual (IDM) provides significant assistance in making the most of information management. If the necessary information is available at the right time, the quality of the information is satisfactory and the right person is involved at the right time, the collaboration and outcome itself is greatly improved. Since management and coordination rely heavily on communication, it benefits from being well structured, unambiguous, explicit and timely. This is supported by a common understanding of the purpose, the processes, the actors involved and the information needed.

This document focuses on the foundations for and execution of digital communication in accordance with the processes and information requirements of a use case. With a focus on communication, this document offers a natural complement to standards that focus on information management such as the ISO 19650 series, information containers such as the ISO 21597 series and information modelling such as ISO 16739-1 and ISO 10303-239.

This document describes how to use various components of an IDM for verifiable and traceable execution of digital communication. The resulting interaction framework enables standardization of digital communication in construction processes within any collaboration within and between organizations. As digital communication spans the entire life cycle of assets and occurs in projects of all sizes and complexities, a standardized IT approach can benefit a wide range of stakeholders. Support for this standard in various ICT solutions means that various information management systems are connected. By doing so, it provides a basis for reliable information exchange and sharing for users, so that they can be confident that the information they send or receive is accurate and sufficient for the coordination activities they need to perform. This provides a basis for using common data environment (CDE) solutions and workflows.

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Building information models — Information delivery manual —

Part 2: Interaction framework

1 Scope

This document specifies a methodology for describing and managing interactions and a format for digital communication between actors in any use case associated with the management of an asset during all life cycle stages.

It provides:

- a methodology that describes an interaction framework for a use case;
- an appropriate way to map responsibilities and interactions that provides a process context for information flow;
- a format in which the interaction framework is specified and executed.

This document is intended to promote secure, verifiable, traceable and high-quality digital IDM communication between actors during all phases of the life cycle of assets, facilitate interoperability between software applications used, and to provide a basis for data- and process-driven information exchange and traceability of communication.

2 Normative references

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, *Building information modelling — Information delivery manual — Part 1: Methodology and format*

ISO 14533-2, *Processes, data elements and documents in commerce, industry and administration — Long term signature — Part 2: Profiles for XML Advanced Electronic Signatures (XAdES)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 29481-1 and the following apply.

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

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

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3.1 General

3.1.1

message

information prepared for communication purposes

[SOURCE: ISO 5127:2017, 3.1.8.02]

3.1.2

digital IDM communication

exchange of *messages* (3.1.1) within the confines of a use case enabled by an interaction framework and *project specific message* (3.2.1)

3.2 Technical components

3.2.1

project specific message**PSM**

structured file that places the interaction framework in the context of a specific project by linking roles to persons and associated organizations

3.2.2

interaction framework schema

XML schema definition file used to validate an interaction framework

3.2.3

interaction message schema

XML schema definition file used to validate a *message* (3.1.1)

3.2.4

promotor

algorithm that generates an *interaction framework schema* (3.2.2) from an interaction framework, with the support of a *template definition* (3.2.5) used as input

3.2.5

templates definition

file containing a number of templates, independent of the specific interaction framework, for generating an *interaction framework schema* (3.2.2) and an *interaction message schema* (3.2.3)

4 Notation

The following notation conventions apply in this document:

- this document follows the notations used in ISO/IEC 23009-1 for describing elements in an XML document;
- primary element types are identified by an upper-case first letter as Element; if an element's name consists of two or more combined words, PascalCase is used, e.g. ImportantElement;
- secondary element types, attributes and references are identified by a lower-case first letter; if one of these consists of two or more combined words, camelCase is used after the first word, e.g. importantAttribute;
- elements are graphically displayed as unified modelling language (UML) diagrams; this document follows the graphic notations used in ISO 24156-1.

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5 Interaction framework

5.1 General

This clause explains the core concepts and principles for the development and use of an interaction framework for digital IDM communication. By following the methodology presented in this document, users of software tools can model (in a machine interpretable XML file) the business context and exchange requirements of a specified use case and subsequently start to digitally communicate with each other based on that interaction framework.

5.2 Information management and the interaction framework

Information management involves defining, producing, checking, and delivering information. Every team member in any business activity interacts with information management to some extent. The importance of documented responsibility and accountability in information management is crucial, because focusing on good information management leads to better project outcomes. To be effective, there shall be a shared understanding of the processes and the necessary information required for each step of their execution.

An IDM captures the business context associated with a use case and defines a detailed specification of the information that a user fulfilling a particular role would need to provide at a particular stage within a business process to create a product or deliver a service.

Generally speaking, a use case involves delivering goods or providing services to customers or clients. As soon as a customer or client requests the delivery of a batch of goods or the provision of a service, a chain of activities is set in motion to fulfil that request. Such a chain of activities is called a business context.

This leads to the basic framework of an IDM as illustrated in [Figure 1](#). Each use case has an associated business context and required information.

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