



FINAL DRAFT International Standard

ISO/FDIS 29481-1

Building information models — Information delivery manual —

Part 1: Methodology and format

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

Partie 1: Méthodologie et format

ISO/TC 59/SC 13

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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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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 third edition cancels and replaces the second edition (ISO 29481-1:2016), which has been technically revised.

The main changes are as follows:

- updated the text to cover infrastructure assets as well as buildings;
- aligned terminology with other related standards;
- significantly revised the text and annexes to improve readability and clarity.

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.

Introduction

This document specifies the format used to present the exchange requirements for a use case and its associated business processes. This is referred to as an information delivery manual (IDM) since it precisely defines the “information delivery” requirements of the use case, recording those using natural language in a “manual” that can be understood by all stakeholders. An IDM consists of three components: the use case description, the business context and specified exchange requirements.

IDMs can be used to solve commonplace problems associated with communication between different parties in project teams or asset management teams by ensuring the clarity of and responsibility for information. An IDM helps all parties get the full benefits from any information model by understanding how the information will be used. If the required information is delivered in a reliable format to support different purposes across the life of an asset and the quality of the information is satisfactory, then the use cases and associated business processes will be greatly improved.

This document provides a methodology that begins by identifying a use case, then defines the business context and its associated business processes using recommended mapping techniques to finally arrive at a detailed specification of the required exchange requirements between parties at specific times during those business processes.

This IDM methodology has been developed specifically for the built environment sector concerned with all aspects of the delivery and management of assets. These activities can be both contractual (such as asset delivery) and non-contractual (such as regulatory compliance) between all stakeholders within the built environment sector and across the whole asset life cycle.

IDM development can be streamlined in various ways as described in [Annex A](#). This document also includes a brief overview of technical implementations of IDMs to support solutions provided by software developers, and how an IDM can be configured to meet national, local and project needs.

It is often assumed that information delivery would be achieved using an information model – represented using industry foundation classes (IFC) – and conforming to an information delivery specification to satisfy the exchange requirements. This document significantly broadens that assumption to include any information formats that can satisfy (in whole or in part) the exchange requirements for a given business process.

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Additional standards have been published in support of information management and building information modelling. [Figure 1](#) shows the position of this document within the context of these other standards.

The ISO 19650 series set out general concepts and principles for information management throughout the whole asset life cycle, as well as specific requirements to manage information during project delivery or asset management. It also specifies an approach for achieving information security in a collaborative working environment and sets out criteria to be used to assess the quality of information deliverables.

The ISO 19650 series and the ISO 29481 series use the same terminology wherever possible. The IDM specification in this document is the appropriate way to record the relationships between types of actors that fulfil the party roles named in the ISO 19650 series and sets out the detailed information that one type of organization requires from another.

The exchange requirements defined in an IDM specify in detail the information that is required but does this in terms of generic actor types (e.g. what a client requires from a designer for a given business process). This is different to the exchange information requirement described in the ISO 19650 series: it is specific to a given appointment (e.g. what the client for project XYZ requires from their designer on that project) and the information may be defined in whatever level of detail is deemed appropriate. This means it is possible for one exchange information requirement to correlate to multiple exchange requirements.

The business context established as part of an IDM can also help define the information management resources used in the ISO 19650 series, such as the information standard and the information production methods and procedures. An IDM can be considered as a toolkit for information managers to identify what information should be received or sent, the actors involved, how that information flows, for what purpose and the milestones for pre-defined use cases.

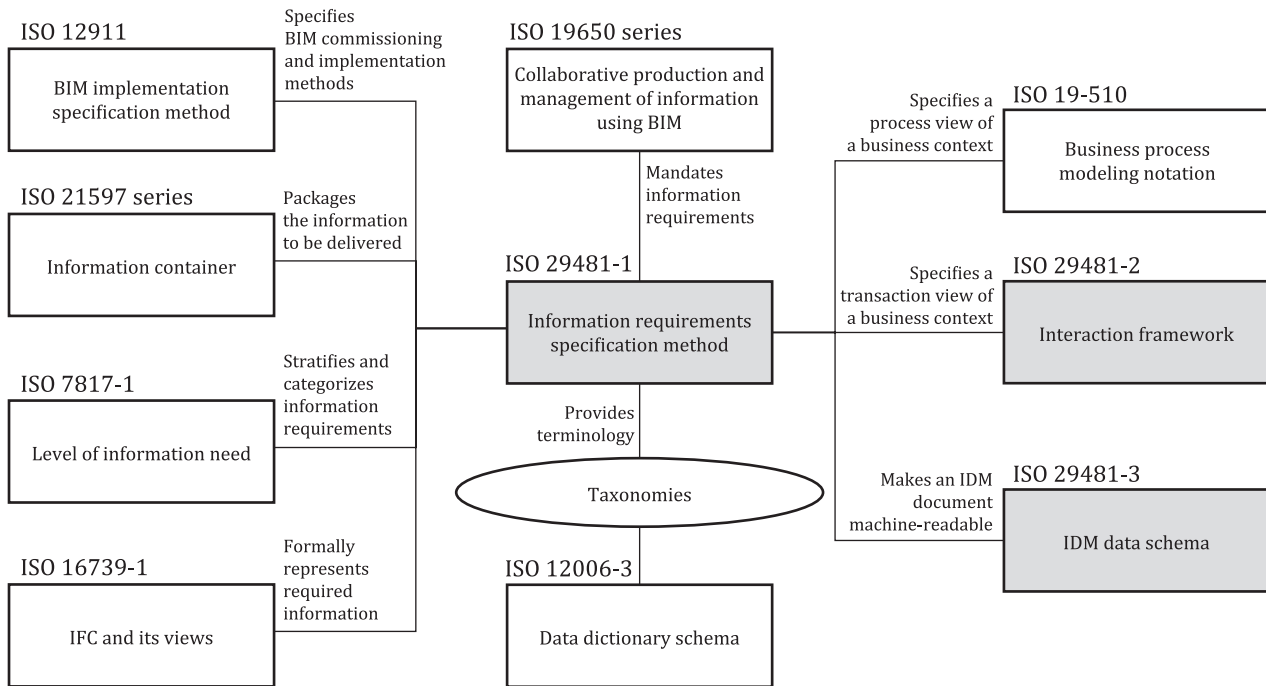


Figure 1 — Relationships between ISO 29481-1 and other relevant standards

Working anticlockwise from the top-left in [Figure 1](#), ISO 12911 defines a systematic approach for developing information management documents as structured specifications to support the automated checking of expected outcomes. The IDM specification in this document can be used to provide content for ISO 12911.

The ISO 21597 series specify the use of linked data techniques to create a collection of structured information models and associated datasets with explicit relationship links between elements in the separate documents, all contained in a single archive format. It provides a way of packaging information deliverables in a consolidated container to support information exchange.

ISO 7817-1 provides an overview of the level of information need. This concept is introduced in the ISO 19650 series as the way for a project client or asset owner to indicate the quantity and nature of information expected in response to any given information requirement. Level of information need provides a more comprehensive way of defining information units that form part of the IDM's exchange requirement.

ISO 16739-1 provides a way to create a semantically precise representation of real-world assets, resulting in a very effective way of delivering information that satisfies the exchange requirements as specified in this document.

ISO 12006-3 provides a specification for a taxonomy in any domain of interest, allowing terms used to denote information units in an IDM to be structured and mapped to other terms.

ISO 29481-3 defines a specification to store, exchange and read IDM specifications that conform to this document in a standardized machine-readable way. ISO 29481-2 and ISO 19510, shown in the top-right corner of [Figure 1](#), specify the two alternative modelling techniques used to represent a business context map that conforms to this document.

In summary, this document provides a basis for reliable information exchange and sharing so that users can be confident that the information they are receiving is accurate and sufficient for the tasks they must perform. The development of this document has been driven by the need for reliability in information exchange between parties in any business context.