

## Building information modelling (BIM) — ~~—~~ Data templates for objects used in the life cycle of assets

*Modélisation des informations de la construction (BIM) — Modèles de données pour les objets utilisés durant le cycle de vie des biens*

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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](http://www.iso.org/directives)).

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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 ~~document~~second edition cancels and replaces the first edition (ISO 23387:2020~~7~~), which has been technically revised. ~~In addition to the change in number, the~~

The main changes ~~compared to ISO 23387:2020~~ are as follows: ~~are as follows:~~

- ~~the~~ the data model has been harmonised with ISO 12006-3~~7~~:2022;
- ~~an~~ an XML Schema Definition has been provided.

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](http://www.iso.org/members.html).

## Introduction

Building information modelling (BIM) provides a digital process for describing and displaying information required in the planning, design, construction and operation of assets. This approach encompasses all aspects of the built environment, including civil infrastructure, utilities and public space.

The ISO 19650 series sets out the concepts and principles for business processes across the built environment sector in support of the management and production of information during the life cycle of assets when using building information modelling (BIM). To support the management and production of information in these business processes, standardization is of the highest importance. Machine-interpretable data ~~is~~are essential to providing a reliable and sustainable exchange of information in an asset life cycle process.

Data templates provide a standardized data structure to describe the characteristics of objects enabling seamless information exchanges of construction sector business semantics through the life cycle of assets.

This document enables data templates to be standardized and made available across the built environment sector, and where applicable through data dictionaries based on ISO 12006-3.

Data templates can be used in conjunction with Industry Foundation Classes (IFC) in ISO 16739-1.

The target audience of this document is:

- ~~Software~~software developers, for embedding the data structure in software, platform etc;
- ~~Built~~built environment sector domain experts appointed to create data templates based on sources describing information needs;
- ~~Sector~~sector practitioners, as they provide the demand, use of data, and process etc;
- ~~Authorities~~,authorities, as they review and check all relevant submissions;
- ~~Research~~research and development personnel, as they support the innovation and continuous development of data templates;
- ~~Educational~~educational institutions, as the concept of data templates, same as ~~BIM~~BIM, and digital information principles should be merged into education and training programs;
- ~~Developers~~developers (asset owners), as they need a clearer vision on data template, hence to put this as part of the tender documents.



# Building information modelling (BIM)— ~~—~~ Data templates for objects used in the life cycle of assets

## 1 Scope

This document provides the concept of data templates developed to enable machine interpretability based on a standardized data structure, carrying the alphanumerical information for any object used in the life cycle of assets.

This document provides a description of how data templates are implemented following ISO 12006-3.

This document provides a methodology to create and maintain data templates in data dictionary.

This document provides guidance for linking between data templates and classification systems within data dictionaries based on ISO 12006-3.

This document provides an XML Schema Definition (XSD) representing an implementation of the ~~EN~~ ISO 23387 and ~~EN~~ ISO 12006-3 data models.

It is not within the scope of this document to provide the content of any data templates

## 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 23386:~~2020~~, *Building information modelling and other digital processes used in construction — Methodology to describe, author and maintain properties in interconnected data dictionaries*.

ISO 12006-3:~~2022~~, *Building construction — Organization of information about construction works — Part 3: Framework for object-oriented information*.

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions 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/>

### 3.1 ~~3.1~~ data dictionary

~~Databased~~database that contains ~~metadat~~metadata

[SOURCE: ISO/IEC 2382:2015, 2121501, modified — The admitted term «~~2~~»information resource dictionary→» has been removed. ~~The Notes; notes~~ to entry have been removed...].]