SLOVENSKI STANDARD
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Organizacija podatkov o gradbenih delih - Upravljanje podatkov z uporabo modeliranja informacij o zgradbi - 1. del: Pojmi in načela (ISO/DIS 19650-1:2017)

Organization of information about construction works - Information management using building information modelling - Part 1: Concepts and principles (ISO/DIS 19650-1:2017)

Organisation von Daten zu Bauwerken - Informationsmanagement mit BIM - Teil 1: Konzepte und Grundsätze (ISO/DIS 19650-1:2017)

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Organization of information about construction works — Information management using building information modelling —

Part 1:
Concepts and principles

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Contents

Page

Foreword

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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 document 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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: <<ISO to insert url>>

Foreword - Supplementary information

The committee responsible for this document is ISO/TC 59, *Buildings and civil engineering works*, SC 13, Organization of information about construction works.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application. Compliance with an International Standard cannot confer immunity from legal obligations.

Introduction

This International Standard sets out the concepts and principles for the business processes across the built environment sector in support of management and production of information during the life cycle of built assets, referred to as "information management" in the text, when using building information modelling (BIM). These processes can deliver beneficial business outcomes to asset owners/operators, project clients, their supply chains, and those involved in project funding including reduction of risk and reduction of cost through the creation and use of asset and project information models.

This International Standard is primarily intended for use by:

— those involved in the procurement, design, construction and/or commissioning of built assets; and

— those involved in delivering asset management activities, including operations and maintenance.

This International Standard is applicable to built assets and construction projects of all sizes and all levels of complexity. This includes large estates, infrastructure networks, individual buildings and pieces of infrastructure, and the projects or programmes that deliver them. The concepts and principles included in this part of the standard should be applied in a way that is proportionate and appropriate to the scale and complexity of the asset or project. In particular, procurement and mobilization of asset or project appointed parties should be integrated as far as possible with existing processes for technical procurement and mobilization.

The specific requirements for information management during the delivery of built assets, based on the concepts and principles within this document, are provided in Part 2 of this International Standard.

Collaboration between the participants involved in construction projects and in asset management is pivotal to the efficient delivery and operation of facilities. Organizations are increasingly working in new collaborative environments in order to achieve higher standards of quality and greater re-use of existing knowledge and experience. A major constituent of these collaborative environments is the ability to communicate, re-use and share data efficiently without loss, contradiction or misinterpretation.

True collaborative working requires mutual understanding and trust within the team and a deeper level of standardized process than has typically been experienced, if the information is to be produced and made available in a consistent timely manner. Information requirements have to pass along supply chains to the point where information can be most efficiently produced, and information has to be collated as it is passed back. At present, each year considerable resources are spent on making corrections to unstructured data, training new personnel in approved data creation techniques, coordinating the efforts of supply chain teams and solving problems related to data reproduction. This is considered waste and can be reduced if the concepts and principles within this International Standard are adopted.

ISO 19650 builds on the formal process for managing assets by systematically asset management policies, strategies and plans, as identified in the ISO 55000- series of standards. ISO 19650 also relies on the systematic approach to quality within an organization that is defined in ISO 9001, although certification to ISO 9001 is not a requirement of ISO 19650. Other standards that relate to information structures and delivery methods are listed in the Bibliography.

Organization of information about construction works — Information management using building information modelling —

Part 1: Concepts and principles

1 Scope

This document is one part of an International Standard for information management using building information modelling (BIM). It sets out the concepts and principles for successful information management at a stage of maturity described as "BIM according to ISO 19650".

This International Standard provides recommendations for a framework to manage information including exchanging, recording, versioning and organizing for all actors addressing every working environment.

This standard applies to the whole life cycle of a built asset, including strategic planning, initial design and construction, day-to-day operation, maintenance, refurbishment, repair and end-of-life.

The concepts and principles contained in this part of the standard are aimed at all those involved in the asset life cycle. This includes, but is not limited to, the asset owner/operator, the project client, the asset manager, the design team, the construction supply chain, an equipment manufacturer, a system specialist, a regulator and an end-user.

There are many different procurement routes and appointment arrangements for asset owners/operators or project clients to choose from to best meet their specific requirements. Although the roles, procedures, processes, activities or tasks described in all other parts of this standard might vary, the concepts and principles described in this document should be adopted and applied in accordance with the specific circumstances and requirements of the asset management or project delivery activities. The information requirements should specify or guide how this will be achieved and the details should be agreed in time for the requirements to be delivered efficiently and effectively.

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 9001, *Quality management systems — Requirements*

ISO 55000, *Asset management — Overview, principles and terminology*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
acceptance criteria
evidence required for considering that requirements have been fulfilled

[SOURCE: ISO 22263:2008, 2.1]

3.2
actor
person, organization or organizational unit (such as a department, team, etc.) involved in a construction process

[SOURCE: ISO 29481-1:2016, 3.1]

3.3
appointment
confirmed instruction to deliver goods or services

3.4
appointed party
provider of goods or services to an *appointing party* (3.5)

Note 1 to entry: This term is used whether or not there is a formal appointment between the parties.

3.5
appointing party
person or organization making an *appointment* (3.3) or issuing a work instruction

Note 1 to entry: In some countries the appointing party might be termed client or employer.

Note 2 to entry: This term is used whether or not there is a formal appointment between the parties.

3.6
asset
item, thing or entity that has potential or actual value to an organization

[SOURCE: ISO 55000:2014, 3.2.1]

3.7
asset information model (AIM)
information model (3.25) relating to the operation of an asset

3.8
asset information requirements (AIR)
specification for *data* (3.15) and *information* (3.22) by the asset owner/operator in relation to the asset(s) it is responsible for

3.9
BIM execution plan
plan that explains how the information management aspects of the *appointment* (3.3) will be carried out by the *delivery team* (3.17)

Note 1 to entry: The pre-appointment BIM execution plan focuses on the delivery team's proposed approach to information management, and their capability and capacity to manage information.

3.10
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

[SOURCE: ISO 29481-1:2016, 3.2]

3.11
client
person or organization responsible for initiating a project and approving the brief

[SOURCE: Adapted from ISO 6707-1:2014, 8.3]

3.12
common data environment (CDE)
single source of information for any given project or *asset* (3.6), for collecting, managing and disseminating each element of the *information model* (3.25) through a managed process

3.13
container
named persistent set of data and information within a file, system or application storage hierarchy

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

3.14
container-based collaborative working
cooperation between members of an asset or project team using *containers* (3.13) for sharing asset or project information

3.15
data
observations that in context yield information

[SOURCE: Skyrme and Amidon, *Knowledge management*, 1997]

3.16
delivery phase
the part of the asset life cycle, during which, the asset is designed, constructed and commissioned

Note 1 to entry: Delivery phase is normally associated with the project as a stage-based approach.

3.17
delivery team
team assembled by the lead appointed party to provide the goods or services

Note 1 to entry: A delivery team typically consists of task teams from within the lead appointed party's organization and/or sub-appointed organizations.

Note 2 to entry: In some countries a delivery team might be assembled by the appointing party.

3.18
delivery team mobilization plan
plan which sets out the activities and tasks needed to establish and maintain the required capability and capacity of the *delivery team* (3.17)

Note 1 to entry: The delivery team mobilization plan is developed during the tender stage and implemented following appointment.

3.19
exchange information requirements (EIR)
specification for data and information by the *appointing party* (3.5) that the *appointed party* (3.4) is expected to meet during the *appointment* (3.3)

3.20
handback
transfer of information from a project delivery team to an asset owner/operator at the end of a project

3.21
handover
transfer of information from an asset owner/operator to a project delivery team at the start of a project

3.22
information
meaningful data

[SOURCE: ISO 22263:2008, 2.6]

3.23
information delivery milestone
a scheduled event for the delivery of the *information model* (3.25)

[SOURCE: Adapted from ISO/IEC/IEEE 24765:2010, 3.1788]

3.24
information exchange
structured set of information compiled at a defined point during an *appointment* (3.3) with defined format and fidelity

3.25
information model
collective term for geometrical models, structured data and documentation

Note 1 to entry: The contents of an information model could include reports, specifications, system or component data or information, geometrical data or information, and so on.

3.26
information standard
document that defines the requirements to be met for data or information to be exchanged between parties and/or integrated with other data or information

3.27
key decision point
a point in time during the asset life cycle when a decision crucial to the direction or viability of the *asset* (3.6) or project is made

3.28
level of information need
description of detail required in an information deliverable

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

3.29
life cycle
the life of the system from the definition of its requirements to the termination of its use, covering its conception, development, operation, maintenance support and disposal

[SOURCE: Adapted from ISO/TS 12911:2012, 3.13]

3.30
master information delivery plan (MIDP)
primary plan describing when data and information is to be produced and by whom

Note 1 to entry: The master information delivery plan incorporates all relevant task information delivery plans.

3.31
operational phase
the part of the asset life cycle, during which the asset is used, operated and maintained

3.32
organizational information requirements (OIR)
specification for data and information by the asset owner/operator to achieve their organizational objectives

3.33
plan of work
document that details principal stages in design, construction and maintenance of building and civil engineering projects that identifies main tasks and persons

[SOURCE: ISO 6707-2]

3.34
project information model (PIM)
information model (3.25) relating to the delivery phase of an asset

3.35
project information protocol
terms and clauses of *appointment* (3.3) specifically relating to the exchange of information between appointing and appointed parties

3.36
project information requirements (PIR)
specification for data and information by the project client to make informed decisions at each stage of the project

3.37
project sponsor
person or organization that provides the financial resources for the project

[SOURCE: Adapted from ISO/IEC/IEEE 24765:2010, 3.2838]

3.38
reference information
information made available to a task team, against which they are required to coordinate their information

3.39
responsibility matrix
chart that describes the participation by various roles in completing tasks or deliverables

[SOURCE: Adapted from ISO 37500:2014, 3.16]

3.40
revision
major change to an information deliverable

3.41
shared resource
resource available to all delivery team members to improve consistency and reduce duplication of effort

EXAMPLE Templates, libraries.

3.42
suitability code
meta-data describing the permitted use of an information deliverable

3.43
task information delivery plan (TIDP)
schedule of information deliverables and delivery dates, for a specific sub-division of a project

3.44
trigger event
planned or unplanned event that changes an asset or its status during its operational phase, where information is required by interested parties