# TECHNICAL REPORT RAPPORT TECHNIQUE TECHNISCHER BERICHT

**CEN/TR 17439** 

June 2020

ICS 35.240.67; 91.010.01

# **English Version**

# Guidance on how to implement EN ISO 19650-1 and -2 in Europe

Document d'orientation pour la mise en oeuvre des normes EN ISO 19650-1 et -2 en Europe Anleitung zur Umsetzung der EN ISO 19650-1 und -2 in Europa

This Technical Report was approved by CEN on 8 December 2019. It has been drawn up by the Technical Committee CEN/TC 442.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

	Cont	ents	Page
	Europ	ean foreword	4
	Introd	uction	5
	1	Scope	<i>6</i>
	2	Normative references	<i>6</i>
	3	Terms and definitions	
	4	Symbols and abbreviations	
	5	Explanation of vocabulary	
	5.1	Appointment, appointing and appointed parties	<i>7</i> 7
	5.1.1	Appointment	
	5.1.2	Appointing party	7
	5.1.3	Appointed party	
2	5.2	Information requirements	
5	5.2.1	Introduction	
2	5.2.2	Information Requirement (IR)	8
7	5.2.3	Exchange Information Requirements (EIR)	
1	5.2.4	Task Information Requirements (TIR)	
4	5.3	BIM Execution Plan (BEP)	
2	5.4 5.5	Information Delivery PlansInformation model	
)	5.5 5.6	Information container	
	5.7	Federation	
	5. <i>7</i>	Common data environment (CDE)	
,			
1	6	Explanation of concepts and principles	11
>	6.1	Appointment, appointing and appointed parties	
1	6.2	Information management function	
;	6.3	Information delivery	
	6.4	Information checking during information exchangeFlexibility in how the different parties and teams may be set up to enable	14
4	6.5	information delivery according to EN ISO 19650	16
	6.6	Families of information requirements and information models	15
	6.7	Level of Information Need	
•	6.8	Federation strategy	
	6.9	How to implement Task Information Delivery Plan (TIDP) and Master Information	10
	0.7	Delivery Plan (MIDP)	19
	6.10	Common Data Environment	
	6.11	Collaborative production of information	
	6.12	Information delivery cycle	
	7	Explanation of EN ISO 19650-2 process	25
	, 7.1	Concept of process	
	7.2	Scalability to small and medium projects	
	7.3	Illustration of different aspects of EN ISO 19650-2 process using a number of	20
		different scenarios	27
	7.3.1	The client (as the appointing party) and the supply chain are aware and motivated	
		and use EN ISO 19650	27
	7.3.2	The client is not aware of/or does not use EN ISO 19650 i.e. How to implement	
		without client participation	
	722	The appointing party is not the client	25

7.3.4	The delivery team is either a small and simple structure or a large and complex	
	structure but is delivering a similar project	28
7.3.5	Explanation of the EN ISO 19650-2 process: The delivery team will continue through	
	to operation and maintenance	31
7.4	The project is mid - size and EN ISO 19650 is used for optimizing costs and the	
	delivery phase	33
8	Examples of implementing the EN ISO 19650-2 process	34
8.1	Introduction	
8.2	The supply chain is not aware of/or does not use EN ISO 19650	34
8.2.1	Introduction	
8.2.2	The collaboration with Building Information Models	35
8.2.3	Appointing the parties in the digital collaboration	37
8.2.4	Planning the digital collaboration	
8.2.5	Collaborative production of information and construction	
8.2.6	Project close-out and handover	
8.3	The project is complex with a range of different stakeholders and demanding	
	schedules with a multiple delivery teams	43
8.3.1	Introduction	
8.3.2	The digital capability and capacity	
8.3.3	Description of project to design a public access building for the appointing party's	
	overall rail improvement programme, following the Information management	
	process during the delivery phase of assets from EN ISO 19650-2	44
8.3.4	Summary	
8.4	The project is small and straight forward and EN ISO 19650 seems too much effort	50
8.4.1	First example of Implementing the EN ISO 19650-2 process: The project is small and	
	straight forward and EN ISO 19650 seems too much effort	50
8.4.2	Second example of Implementing the EN ISO 19650-2 process: The project is small	
	and straight forward and EN ISO 19650 seems too much effort	55
8.5	Example of Implementing the EN ISO 19650-2 process: CDE-scenario demonstrating	
	the spatial coordination of information models with other information models	
	existing within the infrastructure Project's Common Data Environment (CDE)	60
8.5.1	Introduction	
8.5.2	The collaborative production of Information Models in the Common Data	
	Environment (CDE)	60
8.5.3	Collaborative production of information and construction	
8.5.4	Project close-out and handover	

# **European foreword**

This document (CEN/TR 17439:2020) has been prepared by Technical Committee CEN/TC 442 "Building Information Modelling (BIM)", the secretariat of which is held by SN.

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.

This document is intended to be a supporting document to the EN ISO 19650-1 and EN ISO 19650-2. It is the CEN guidance on how to implement the EN ISO 19650-1 and EN ISO 19650-2. The aim is to create a common understanding in digital collaboration according to EN ISO 19650-1 and EN ISO 19650-2 within the industry across Europe by fulfilling the following objectives:

- having a framework appropriate and adaptable across Europe for implementation according to EN ISO 19650-1 and EN ISO 19650-2,
- delivering interpretation of EN ISO 19650-1 and EN ISO 19650-2 commonly applied and consistent across Europe.

# Introduction

It is important that this guidance is used as a supporting document to the original EN ISO 19650-1 and EN ISO 19650-2 documents when implementing the standards. However, this guidance has been prepared so that it can be read also as a standalone document to understand the principles of EN ISO 19650-1 and EN ISO 19650-2.

This guidance does not seek to duplicate, contradict or extend the meaning of EN ISO 19650-1 and EN ISO 19650-2.

This guidance helps to describe the journey to a good digital collaboration based on the EN ISO 19650-1 and EN ISO 19650-2 standards, which are targeted at the whole of the built environment included infrastructure as well as buildings. It describes some of the key parts of the journey to establish a common understanding of the digital collaboration. The detailed description of how to achieve this is described in the EN ISO 19650-1 and EN ISO 19650-2 standards.

The principle of EN ISO 19650-1 and EN ISO 19650-2 standards is a pragmatic approach to allow all involved parties to collaborate on information management using building information modelling for projects and built assets as efficiently as possible. There should also be benefits relating to quality from applying the principle of EN ISO 19650-1 and EN ISO 19650-2.

The first section (Clause 5 and Clause 6) of the guidance provides a description of what the key elements of the EN ISO 19650–1 and EN ISO 19650–2 standards are. The second section (Clause 7) explains the EN ISO 19650–2 process, and the examples of Clause 8 are available for European market.

# 1 Scope

The scope of this guidance is deliberately restricted only to refer to EN ISO 19650-1 and EN ISO 19650-2, highlighting and describing the manner in which to use it – and not extending or contradicting the scope and content of the standard. The document aims simply to provide minimum supporting text to achieve a basic understanding and ability to implement EN ISO 19650-1 and EN ISO 19650-2. In each country, each client, each team can use this guidance to provide the best response to information management in each project.

This document explains the terms and definitions, explains the concepts and principles and how to use them, and gives typical examples with clear explanations.

It should be noted that in this guidance, Information Management is considered as a part of the Project Management.

This guidance is intended to demonstrate how the standard works at European level, which is neutral, agnostic, and applicable to any of the following circumstances:

- the nature of contracts: e.g. public; private, alliances, global, partnership,
- the actors' functions: e.g. through the programming, design, construction phases, from small agencies, SMEs to large firms, large companies,
- the types of works: e.g. simple, complex, new, rehabilitated, housing, infrastructure.

# 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.

EN ISO 12006–2, Building construction — Organization of information about construction works — Part 2: Framework for classification (ISO 12006-2)

EN ISO 12006–3, Building construction — Organization of information about construction works — Part 3: Framework for object-oriented information (ISO 12006-3)

EN ISO 19650-1:2018, 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 (ISO 19650-1:2018)

EN ISO 19650-2:2018, Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 2: Delivery phase of the assets (ISO 19650-2:2018)

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 19650-1 and EN ISO 19650-2 and the following apply.

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

- IEC Electropedia: available at <a href="http://www.electropedia.org/">http://www.electropedia.org/</a>
- ISO Online browsing platform: available at http://www.iso.org/obp

NOTE Only necessary supplement terms for this guidance are listed below.

#### 3.1

# task information requirement

#### TIR

information requirement in relation to task team

# 4 Symbols and abbreviations

No symbols and abbreviations are listed in this document.

# 5 Explanation of vocabulary

## 5.1 Appointment, appointing and appointed parties

# 5.1.1 Appointment

EN ISO 19650-1:2018, 3.2.2:

appointment: "agreed instruction for the provision of information concerning works, goods or services

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

Proper understanding of these terms requires consideration of them as a group and also collectively with the terms "BIM Execution Plan (BEP)" and "Exchange Information Requirements (EIR)". Fuller understanding will be achieved through review of Clause 6, Explanation of Concepts and Principles.

Within the context of EN ISO 19650, appointment is used at the level of the appointing party with the lead appointed party and its delivery team, wherein Exchange Information Requirements (EIR) are provided and a BIM Execution Plan (BEP) is provided in response. The agreed instruction will be cascaded to the appointed parties by the lead appointed party.

For a fuller explanation of what is an appointment, refer to 6.1 of this document and EN ISO 19650-1:2018, 5.1.

# 5.1.2 Appointing party

EN ISO 19650-1:2018, 3.2.4:

appointing party: "receiver of information concerning works, goods or services from a lead appointed party

Note 1 to entry: In some countries the appointing party might be termed client, owner or employer but the appointing party is not limited to these functions.

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

In the context of EN ISO 19650, an appointing party has specific information requirements which the party seeks to fulfil by providing clear requests via appointments of appropriate suppliers which set out what, how and when information should be provided.

For a fuller explanation of what is an appointing party, refer to 6.1 of this document and EN ISO 19650-1:2018, 5.1.