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**Organizacija in digitalizacija informacij v gradbeništvu - Upravljanje informacij z BIM - 5. del: Varnostni pristop k upravljanju informacij (ISO 19650-5:2020)**

Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling - Part 5: Security-minded approach to information management (ISO 19650-5:2020)

Organisation von Daten zu Bauwerken - Informationsmanagement mit BIM - Teil 5: Spezifikation für Sicherheitsbelange von BIM, der digitalisierten Bauwerke und smarten Assetmanagement (ISO 19650-5:2020)

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Organisation des informations concernant les ouvrages de construction -- Gestion de l'information par la modélisation des informations de la construction (ISO 19650-5:2020)

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91.010.01	Gradbeništvo na splošno	Construction industry in general

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Organisation et numérisation des informations relatives aux bâtiments et ouvrages de génie civil, y compris modélisation des informations de la construction (BIM) - Gestion de l'information par la modélisation des informations de la construction - Partie 5: Approche de la gestion de l'information axée sur la sécurité (ISO 19650-5:2020)

Organisation von Daten zu Bauwerken - Informationsmanagement mit BIM - Teil 5: Spezifikation für Sicherheitsbelange von BIM, der digitalisierten Bauwerke und des smarten Assetmanagements (ISO 19650-5:2020)

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Contents	Page
European foreword.....	3

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[SIST EN ISO 19650-5:2020](https://standards.iteh.ai/catalog/standards/sist/5bebd267-ac43-4727-aed1-821790239944/sist-en-iso-19650-5-2020)  
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## European foreword

This document (EN ISO 19650-5:2020) 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of an identical text or by endorsement, at the latest by January 2021, and conflicting national standards shall be withdrawn at the latest by January 2021.

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**Organization and digitization of  
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Information management using  
building information modelling —**

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Part 5:

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**Security-minded approach to  
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# Contents

Page

<b>Foreword</b> .....	<b>v</b>
<b>Introduction</b> .....	<b>vi</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Establishing the need for a security-minded approach using a sensitivity assessment process</b> .....	<b>3</b>
4.1 Undertaking a sensitivity assessment process.....	3
4.2 Understanding the range of security risks.....	4
4.3 Identifying organizational sensitivities.....	4
4.4 Establishing any third-party sensitivities.....	5
4.5 Recording the outcome of the sensitivity assessment.....	5
4.6 Reviewing the sensitivity assessment.....	5
4.7 Determining whether a security-minded approach is required.....	5
4.8 Recording the outcome of the application of the security triage process.....	6
4.9 Security-minded approach required.....	7
4.10 No security-minded approach required.....	7
<b>5 Initiating the security-minded approach</b> .....	<b>7</b>
5.1 Establishing governance, accountability and responsibility for the security-minded approach.....	7
5.2 Commencing the development of the security-minded approach.....	8
<b>6 Developing a security strategy</b> .....	<b>9</b>
6.1 General.....	9
6.2 Assessing the security risks.....	9
6.3 Developing security risk mitigation measures.....	10
6.4 Documenting residual and tolerated security risks.....	10
6.5 Review of the security strategy.....	11
<b>7 Developing a security management plan</b> .....	<b>11</b>
7.1 General.....	11
7.2 Provision of information to third parties.....	12
7.3 Logistical security.....	12
7.4 Managing accountability and responsibility for security.....	13
7.5 Monitoring and auditing.....	13
7.6 Review of the security management plan.....	13
<b>8 Developing a security breach/incident management plan</b> .....	<b>14</b>
8.1 General.....	14
8.2 Discovery of a security breach or incident.....	14
8.3 Containment and recovery.....	15
8.4 Review following a security breach or incident.....	15
<b>9 Working with appointed parties</b> .....	<b>15</b>
9.1 Working outside formal appointments.....	15
9.2 Measures contained in appointment documentation.....	16
9.3 Post appointment award.....	17
9.4 End of appointment.....	17
<b>Annex A (informative) Information on the security context</b> .....	<b>18</b>
<b>Annex B (informative) Information on types of personnel, physical, and technical security controls and management of information security</b> .....	<b>20</b>
<b>Annex C (informative) Assessments relating to the provision of information to third parties</b> .....	<b>24</b>
<b>Annex D (informative) Information sharing agreements</b> .....	<b>26</b>

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**(standards.iteh.ai)**

SIST EN ISO 19650-5:2020

<https://standards.iteh.ai/catalog/standards/sist/5bebd267-ac43-4727-aed1-821790239944/sist-en-iso-19650-5-2020>

## 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)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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](http://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).

A list of all parts in the ISO 19650 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](http://www.iso.org/members.html).

## ISO 19650-5:2020(E)

### Introduction

The built environment is experiencing a period of rapid evolution. It is anticipated that the adoption of building information modelling (BIM) and the increasing use of digital technologies in the design, construction, manufacture, operation and management of assets or products, as well as the provision of services, within the built environment will have a transformative effect on the parties involved. It is likely that to increase effectiveness and efficiency, initiatives or projects that are developing new assets or solutions, or modifying or managing existing ones, must become more collaborative in nature. Such collaboration requires more transparent, open ways of working, and, as much as possible, the appropriate sharing and use of digital information.

The combined physical and digital built environment will need to deliver future fiscal, financial, functional, sustainability and growth objectives. This will have an impact on procurement, delivery and operational processes, including greater cross-discipline and sector collaboration. It will also lead to an increased use of digital tools and availability of information. The use of computer-based technologies is already supporting new ways of working, such as the development of off-site, factory-based fabrication and on-site automation. Sophisticated cyber-physical systems, by using sensors (the cyber or computation element) to control or influence physical parts of the system, are able to work in real-time to influence outcomes in the real world. It is anticipated that such systems will be used to achieve benefits such as increases in energy efficiency and better asset lifecycle management by capturing real-time information about asset use and condition. They can already be found in transportation, utilities, infrastructure, buildings, manufacturing, health care and defence, and when able to interact as integrated cyber-physical environments, can be used in the development of smart communities.

As a consequence of this increasing use of, and dependence on, information and communications technologies, there is a need to address inherent vulnerability issues, and therefore the security implications that arise, whether for built environments, assets, products, services, individuals or communities, as well as any associated information.

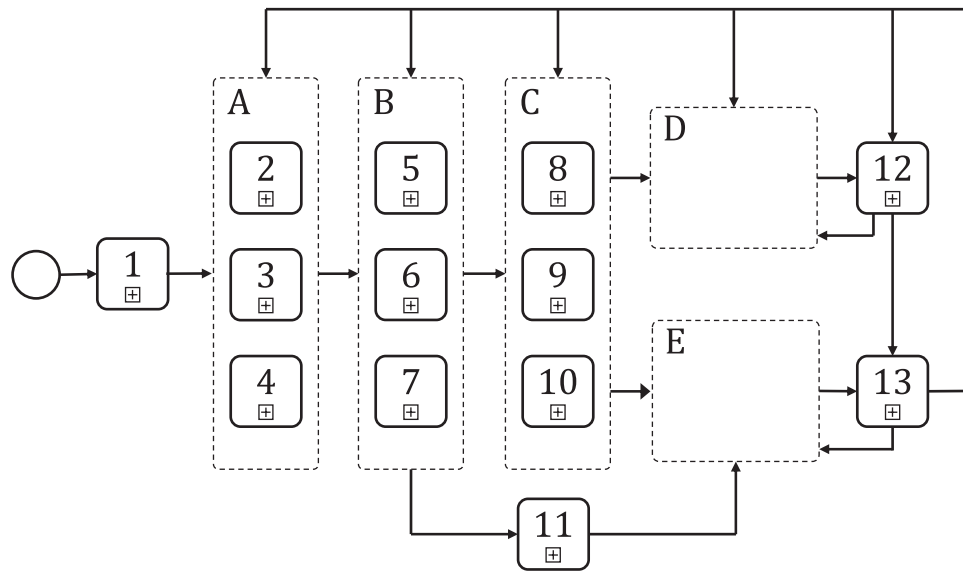
This document provides a framework to assist organizations in understanding the key vulnerability issues and the nature of the controls required to manage the resultant security risks to a level that is tolerable to the relevant parties. Its purpose is not in any way to undermine collaboration or the benefits that BIM, other collaborative work methods and digital technologies can generate.

The term organization captures not only appointing parties and appointed parties, as defined in ISO 19650-1, but also demand-side organizations who are not directly involved in an appointment.

Information security requirements for an individual organization, organizational department or system are set out in ISO/IEC 27001 but cannot be applied across multiple organizations. BIM and other digital collaborative work methods and technologies generally involve the collaborative sharing of information across a broad range of independent organizations within the built environment sector. Therefore, this document encourages the adoption of a security-minded, risk-based approach that can be applied across, as well as within, organizations. The appropriate and proportionate nature of the approach also has the benefit that measures should not prohibit the involvement of small and medium-sized enterprises in the delivery team.

The security-minded approach can be applied throughout the lifecycle of an initiative, project, asset, product or service, whether planned or existing, where sensitive information is obtained, created, processed and/or stored.

[Figure 1](#) shows the integration of this security-minded approach with other organizational strategies, policies, plans and information requirements for the digitally-enabled delivery of projects, and the maintenance and operation of assets, using BIM.

**Key**

- A coordinated and consistent strategies and policies
- B coordinated and consistent plans
- C coordinated and consistent information requirements
- D activities undertaken during the operational phase of assets
- E activities undertaken during the delivery phase of the asset (see also ISO 19650-2)
- 1 organizational plans and objectives
- 2 strategic asset management plan/policy (see ISO 55000)
- 3 security strategy
- 4 other organizational strategies and policy
- 5 asset management plan (see ISO 55000)
- 6 security management plan
- 7 other organizational plans
- 8 asset information requirements (AIR)
- 9 security information requirements (which form part of the security management plan)
- 10 organizational information requirements (OIR)
- 11 strategic business case and strategic brief
- 12 asset operational use
- 13 performance measurement and improvement actions

NOTE No order is implied by the numbering in A, B and C.

### Figure 1 — The integration of the security-minded approach within the wider BIM process

NOTE Refer to ISO 19650-1 for concepts and principles including OIR and AIR to assist further understanding of security-mindedness within the context of the ISO 19650 series.

The process for deciding on the need for and, where appropriate, implementing a security-minded approach in relation information management is summarised in [Figure 2](#).