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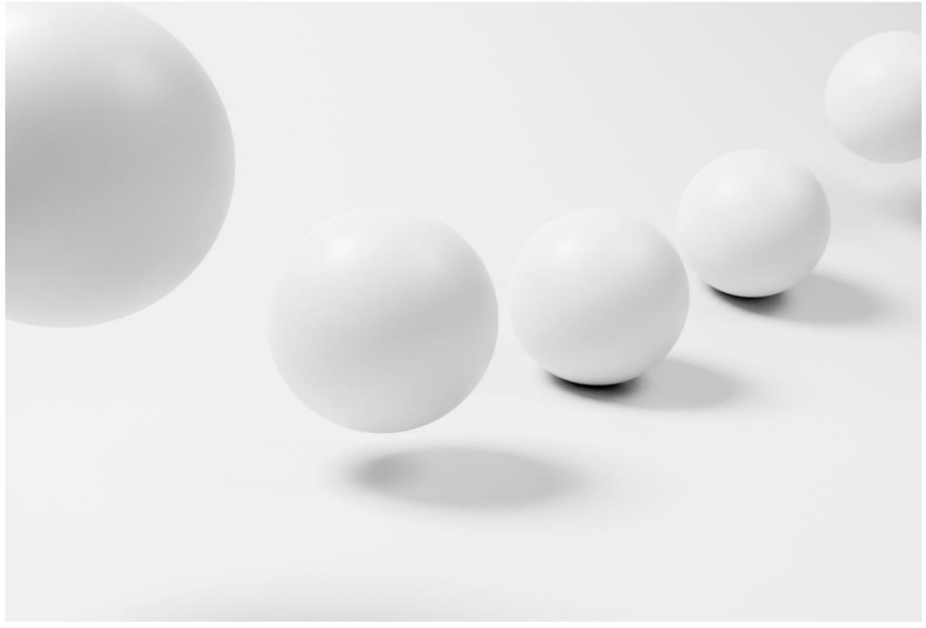
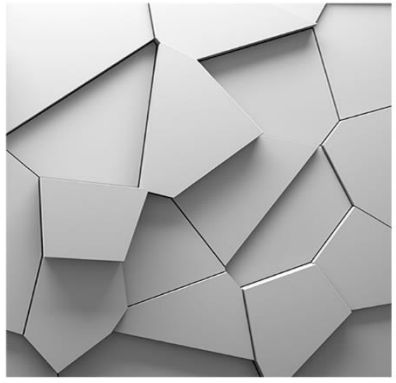
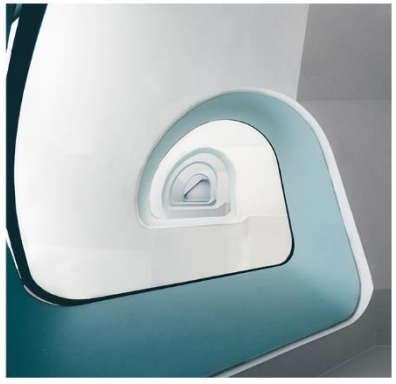
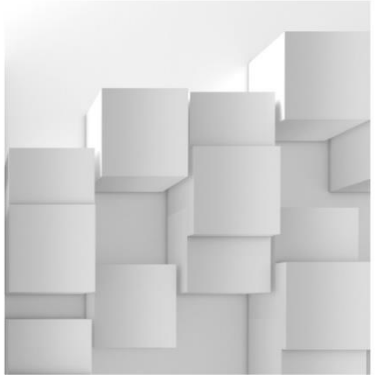


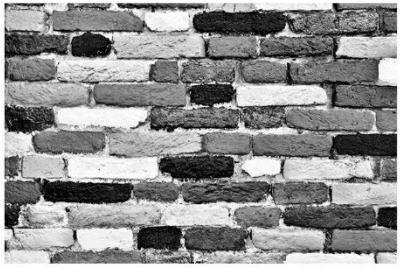
BIM

STANDARDIZATION IN SERBIA









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BIM Standardization in Serbia

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BIM Standardization in Serbia

This publication was prepared within the implementation of the Czech program for the development of cooperation „Support for Improvement and Development of Serbian Quality Infrastructure Sector" in cooperation between the Institute for Standardization of Serbia (ISS) and Czech Office for Standards, Metrology and Testing (ÚNMZ).

The main goal of this project activity is to support the digital transformation of the construction industry by promoting standards in the field of Building Information Modelling – BIM and raising awareness on the importance of standardization as the best tool for exchanging good practice and presenting contemporary technical and technological development.

The Institute for Standardization of Serbia has prepared an overview of the activities of the national, International and European technical bodies for standardization, as well as the list of Serbian standards and basic terms in the field of Building Information Modelling – BIM.

Contents

Foreword

The publication „BIM Standardization in Serbia" is a concise and clear presentation of the basic information on the Building Information Modelling (BIM) with clearly indicated specifics of the construction industry. In addition, the importance of standardization was emphasized, as the key element for facilitating efficient digital transformation with the aim of increasing productivity and bringing the construction industry closer to other industries.

An overview of the current state of standardization at the global and European levels points to the basic and most important standards that are generally accepted and are crucial for the effective implementation of BIM. By presenting national activities in standardization conveyed the initiative of the economy and higher education institutions to regulate the field of BIM with a common and generally accepted framework. This can be supported by the provided list of Serbian standards, as well as the determination of the competent National Technical Committee to adopt key standards in the Serbian language.

We can say that this publication is a set of the most basic information that effectively leads the reader into the world of BIM, introduces him to the basic terminology and refers to the most important standards.

dr Igor Peško, Associate Professor
Faculty of Technical Sciences, University of Novi Sad

This publication is intended for:

The legislator, in order to have an overview of Serbian standards that could be the support to public policy

Investors, engineers and contractors in the construction industry

Construction products manufacturers

Those who want to learn about BIM Standardization

1 INTRODUCTION

Industrial revolutions, one after the other, have changed the way we work and continuously removed the barriers between people and technology. Modern technologies are erasing the traditional boundaries between the physical, digital and biological worlds, and standards that ensure the compatibility and interoprability of new technologies play a crucial role in the transition to a new age. In addition, standards are present in every aspect and segment of our lives and directly or indirectly help to improve the quality and safety of products, processes and services, so the application of standards is inevitable.

Building Information Modelling represents the transformation of data into information, that enables the digitalization of the value chain of the construction industry into the asset life cycle. Widely used term for Building Information Modelling is the abbreviation BIM, which originates from the term in English language „*Building Information Modelling*".

BIM primarily refers to the exchange of all types of information, from geometric to functional and technical data, to data on costs and maintenance during the asset life cycle. What BIM standardization can provide are positive changes in the construction industry by facilitating the application of BIM digital technology and contributing to the creation of optimal cooperative processes in the design, construction and maintenance phases.

The subject of this publication is the review of European and International standardization in the field of Building Information Modelling, as well as in national standardization in the Republic of Serbia.

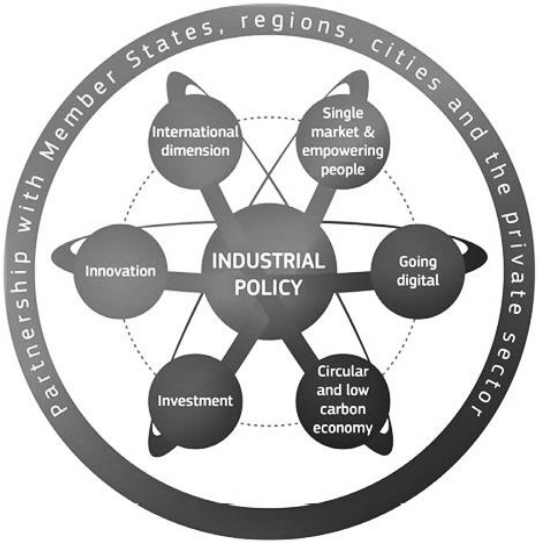
At the national level, BIM standardization is dealt with by one of the expert bodies of the Institute for Standardization of Serbia ISS, National Technical Committee KS U442, *Building Information Modelling* – BIM, at the European level, it is the European Technical Committee CEN/TC 442, *Building Information Modelling* (BIM) of European Committee for Standardization (CEN), while at the International level it is the International Sub-Committee ISO/TC 59/SC 13, *Organization and digitization of information about buildings and civil engineering works, including building information modelling* (BIM) of the International Organization for Standardization (ISO).

2 BUILDING INFORMATION MODELLING – BIM

The main triggers of the accelerated changes in the world are the changes in the environment and geopolitics, as well as technological innovations.[1] The impact of these changes varies, from market unpredictability to opportunities for growth, development and innovation. In the construction field, Building Information Modelling – BIM is not just a new digital technology, but a strategic and comprehensive methodology for more efficient management of construction and infrastructure projects at significantly reduced costs.

2.1 CONSTRUCTION INDUSTRY – CHALLENGES AND OPPORTUNITIES

The construction industry is considered a strategic sector for the development of the economy, because it is one of the largest industrial businesses and employment generators. It faces identified problems, which affect the implementation of the projects, refering to the level of mutual cooperation of project actors, insufficient investment in technology, innovation and development, as well as poor information management.[2] Current practice indicates that in traditional construction procedures there is frequent loss of information, especially between the design, construction and operational stages. Also, due to partial application of digital technologies, i.e. when digital and manual processes are combined, there is a lack of communication, repetition of the same data in several systems/software packages and consequently loss of information and increased costs by process separation. Duplication of activities, increasing costs and extending deadlines for the implementation of construction projects can be reduced and/or eliminated by the use of digital technologies and processes that improve the management of relevant information, which leads to increased efficiency, profitability and competitiveness of the construction industry.



Picture 1 – Fields for intervention in the new European Industry Strategy

(*Reference*: *Strategy of the Industry Policy of the Republic of Serbia from 2021 till 2030*)

In the SWOT analysis, which represents an integral part of the Strategy of the Industry Policy of the Republic of Serbia from 2021 till 2030, as an opportunity for the industry, the broader use of the contemporary digital technologies in industry and the improvement of the digital infrastructure and digital transformation of the industry, were recognized as the opportunities for the industry.[3] Picture 1 shows that the digitalization is recognized as one of the fields for intervention in the new new European Industry Strategy, which classifies construction as one of the 14 industrial ecosystems.[4]

The essence of BIM technology is the digital transformation of data into the ***right information available*** *to the* ***right people in the right way at the right time****.*

Even though the application of the digital technologies is considered to be the industry trigger, it also represents a big change in the way we live and communicate as a society, in the way we work and do business. Collecting and converting data into a large number of digital solutions provide unique opportunities for companies to make better decisions, become more efficient and develop innovative products and services. Digital transformation carries with it costs and risks and at the same time raises issues related to transparency, privacy and security issues. Unique tool which ensures that the digital solutions developed and used by the construction industry, are safe and reliable, are the standards developed by the International, European and national standardization bodies. Building Information Modelling (BIM) represents the digital information management approach adopted by the construction industry to improve productivity and quality in construction and infrastructure projects, reduce final losses during construction and provide a basis for the development of future services.[5] The use of BIM technology is growing rapidly in the largest construction markets, but it is achieving the greatest success in the countries where the mandatory application of BIM for public facilities, based on regulations and standards, has been introduced. The implementation of BIM is supported by the EU Public Procurement Directive, that encourages public entities to use BIM when procuring construction projects.[2]

2.2 INTEGRATED BIM

Building information modelling is a way of structuring information about infrastucture and construction. The standard defines BIM as the use of shared digital representation of constructed assessets to improve design, construction and operation processes in order to create a reliable decision-making basis.[6]

In order to achieve the full implementation of BIM and the benefits it can provide, it is necessary to raise the competencies of the employees (through additional training) and invest in upgrading the IT equipment, which is indeed a great challenge for small companies. Slow acceptance of BIM technology is characteristic for project owners, because they do not comprehend the benefits of BIM. In addition, another issue that arises when using BIM is data ownership and accountability, as a consequence of collaborative way of creating and sharing data. For that reason, data sharing or interoperability, is a complex process during which effective rules and controls need to be defined to ensure the security and reliability of the transmission. The easiest way to accomplish efficient interoperability is to use three groups of standards, i.e.:

- standards for data models (so-called Data Model standards) – determining the data structure for the entity, geometry and related properties, as well as the classification for data exchange models;
- standards related to data dictionaries (so-called Data Dictionary standards) – which determines the data structure for defining the data – semantic concepts (entity, properties, classification, etc.) and the relationships between them;
- standards for process (so-called Process standards) – which determines how to describe the required information that supports a particular process.[7]

The abrupttransition from the traditional modeling approach to the open BIM approach is not possible, but is associated with BIM maturity. Improving quality, repeatability and predictability within the available BIM potential is a change that is managed progressively. The identified indicators are used to assess four aspects: scope, digitization, interoperability and collaboration (joint cooperation).[8]

3 STANDARDIZATION – NEED AND/OR OPPORTUNITY TO EXCHANGE GOOD PRACTICE

Standards are a good tool that supports the digital transformation of the construction industry and helps to accomplish high goals related to achieving higher productivity and competitiveness in the market. Due to their role, the importance of cooperation and synchronization of actions between standards technical bodies working at different levels (International, European or national), as well as in different standardization fields (general fields of standardization or electrotechnical standardization fields), has to be emphasized.

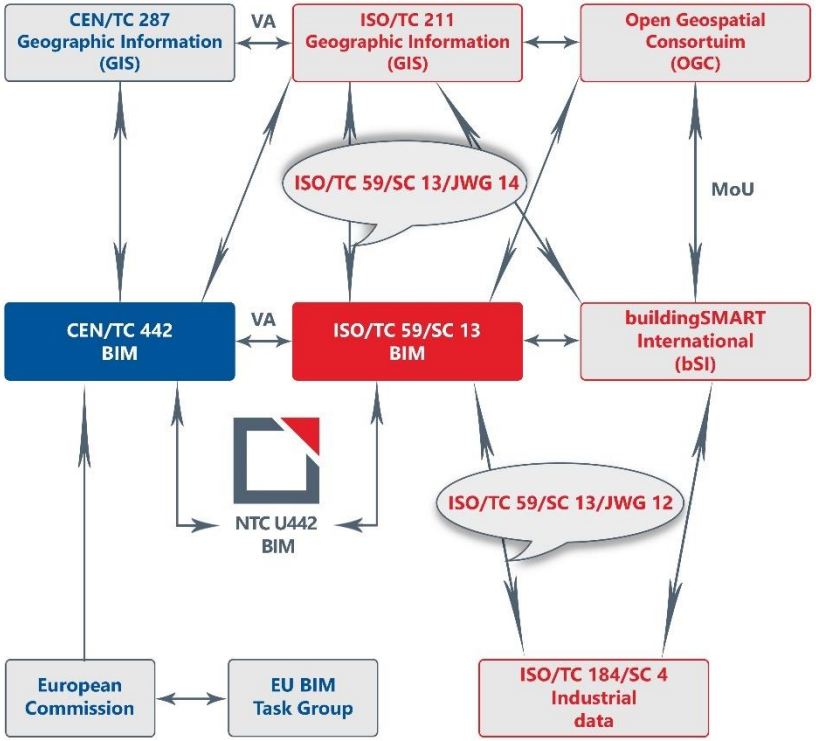
If we look at the development of the documents from the point of view of a simplified approach and regardless of the level at which the document is developed, we can identify three most important stages. The first stage will begin with the work of experts on forming the text of the document, followed by the approval of the standardization technical bodies and the participation of the public in the so-called public enquiry, and at the end, its final shaping and publication. Once the document is published, the obligation of the standardization body is to maintain it and revise its adequacy within a maximum of five years for standards, or three years for technical specifications and, if necessary, other related documents. In this way, it is ensured that the document always corresponds to the current technical and technological development.

As the full member of the European and International organizations for standardization, the Institute for Standardization of Serbia represents the interests of the stakeholders in the Republic of Serbia related to standardization issues and as such has specific rights and obligations. One of the ISS obligations is to adopt European standards within the prescribed deadlines into the national standardization system, i.e. to publish Serbian standards based on European standards, and to adopt International standards and national standards of other countries only upon the specific request of the interested parties. ISS expert bodies, i.e. ISS National Technical Committees (NTCs) have the right to delegate national experts to the European and International technical bodies who will participate in the development of the new standards, attend the meetings of these bodies or make proposals for new standards. NTC members vote on the documents during their development as well as in the systematic review stage, i.e. during the revision of their adequacy within the set deadlines. Based on the votes of the NTC members, the so-called national position is formed, and it is forwarded from ISS to the European and International standardization organizations.

Institute for Standardization of Serbia – ISS is the only recognized national standardization body in the Republic of Serbia. It represents the interests of the Serbian stakeholders regarding the standardization issues at the European and International levels.

Those who are not ISS NTC members can also contribute to the development of standards. By opening an account on ISS web site, the texts of standard drafts in the public enquiry stage (stage 40.20) are available for reading and commenting on them. The comments are submitted via ISS web site by completing the Commenting Form. After the defined deadline expires, all received comments are being considered by the responsible NTC, which evaluates them, i.e. accepts or rejects them with an explanation. It is also possible to contribute to the quality of the translation of standards texts by reading and commenting on the standards drafts in Serbian language.

3.1 INTERNATIONAL BIM STANDARDIZATION



The picture shows:

MoU Memorandum of Understanding
VA Vienna Agreement

Picture 2 – International BIM standardization

International subcommittee *ISO/TC 59/SC 13, Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)* of the International Organization for Standardization (ISO) is responsible for the development of international standards in this field. The Picture 2 shows the complex process of International BIM standardization, which includes the cooperation of a large number of technical committees, as well as relevant interested parties with whom various agreements have been established. International subcommittee SC 13, in addition to the cooperation with a large number of other ISO technical committees/subcommittees, e.g. ISO/TC 211, *Geographic Information (GIS)*, ISO/TC 184/SC 4, *Industrial Data*, closely cooperates on the development of standards with the international standards organization *Open Geospatial Consortium (OGC)* and the international organization that deals with the improvement of information exchange between software applications used in construction „*buildingSMART International*" (bSI).

A very important agreement between the International Organization for Standardization (ISO) and the European Committee for Standardization (CEN) is the Vienna Agreement, which regulates the joint work of these two organizations and enables the adoption of ISO (International) standards as EN (European) standards (EN ISO), when it is appropriate. When the European standardization adopts an International standard, all of its members are obliged to adopt these standards into their national standardization systems. Thus, one International standard replaces 34 national standards and its prevalence and influence are significantly larger.

3.2 EUROPEAN BIM STANDARDIZATION

Technical committee CEN/TC 442, *Building Information Modelling* (BIM), of the European Committee for Standardization (CEN) is responsible for the development of European standards in this field. This technical committee was established in 2014, and from the beginning, it set out as one of its priorities to adopt relevant International standards and technical specifications, with the aim of expanding it to infrastructure, as well as to the records management (recording). The first standards at the European level belonging to the BIM field were published in 2016. Today, there are nine working groups within CEN/TC 442, that are preparing standards and related documents in the more professional fields such as terminology, competence, information exchange, data vocabulary, infrastructurs, etc.

The priorities in the work of this technical body are:

- ✓ to ensure that the dynamics of transformation enable the construction sector and all members of the value chain to adapt to the changes and increase capacities without radical market interventions;
- ✓ to facilitate the implementation of security-oriented approach and to support the use of digital technologies and better cooperation together with the protection and management of sensitive data;
- ✓ to comprehend the current activities and standards already used in the European market;
- ✓ to adopt relevant ISO standards and technical specifications, and then extend them to new fields including infrastructure, as well as record management;

- ✓ to develop new standards as the support of process management and related guidelines, such as standards that allow BIM to use European sustainability standards;
- ✓ to develop relations with the key actors, including European Commission.[4]

Technical committee CEN/TC 442 has launched new projects (that still do not have designations) with the following titles:

- ✓ *Building information modelling (BIM) – Data templates for construction objects used in the life cycle of built assets – Data templates based on European standards and technical specifications;*
- ✓ *BIM in infrastructure – Standardization need and recommendations;*
- ✓ *Professions and competence related to the Building Information Management;*
- ✓ *Common Data Environments (CDE) for BIM projects – Open data exchange between platforms of different vendors via an open CDE API;*
- ✓ *Building Information Modelling – Level of information need – Part 2: Guidance for application ;*
- ✓ *Building Information Modelling – Level of information need – Part 3: Data Schema;*
- ✓ *Framework and Implementation of Common Data Environment Solutions, in accordance with EN ISO 19650.*

3.3 NATIONAL BIM STANDARDIZATION

INSTITUTE FOR STANDARDIZATION OF SERBIA

One of ISS NTCs that has the largest number of members, NTC U442, *Building Information Modelling* – BIM, is responsible for the development and adoption of standards in the field of BIM. The real evidence of the relevance of BIM standardization at the national level for ISS was the launching of the initiative from the economy sector, with the full support of the civil engineering, architecture and mechanical engineering faculties, as well as the professional association, to exclude the field of building information modelling from the NTC U059, *Buildings and civil engineering works*, as a separate specific field that would be within the responsibility of a special ISS NTC. The pioneers of BIM standardization in Serbia are 24 experts representing 20 companies.

The scope of work of the recently established NTC corresponds to the fields of work of the International subcommittee ISO/TC 59/SC 13 and the European technical committee CEN/TC 442, and its scope is the standardization in the field of structured semantic life cycle information for the built environment; the development of structured groups of standards, specifications and reports that determine methodologies for defining, describing, exchanging, monitoring, recording and safe handling of asset data (designed and constructed buildings or their components), semantics and processes, with the links to geospatial and other external data.

The first Serbian standards in the field of BIM were published in 2017. The primary task of the NTC U442 is to establish and improve terminology in the field of BIM in Serbian language and to translate standards. The priority for translation is the umbrella series of standards SRPS EN ISO 19650, and the first standards in Serbian language can be expected at the end of 2021.

3.3.1 Review of some important standards for BIM

✓ Standard series SRPS EN ISO 19650

Through the international cooperation in the development of the SRPS EN ISO 19650 standard series, a common information management process has been identified, and it can be applied to assets and organizations of different sizes and complexities and to the different types of appointments.

Part 1 of SRPS EN ISO 19650 provides concepts and principles related to the implementation of the requirements for business processes within the built environment sector to support information management and their creation during the life cycle of built assets (better known as „information management“) when using Building Information Modelling (BIM).

Part 2 of SRPS EN ISO 19650 enables the appointing party to establish its information requirements during the delivery phase of the asset and to provide a good commercial and collaborative environment within which (multiple) appointed parties can create information in an effective and efficient manner.

Part 3 of SRPS EN ISO 19650 enables the appointing party to determine its information requirements during the operational phase of the asset.

The security aspect of asset management is given in the Part 5 of SRPS EN ISO 19650. This document provides framework to assist organizations in understanding the vulnerability issues and the nature of controls required to manage consequent security risks to a level acceptable to the relevant parties.

✓ Standard series SRPS EN ISO 12006

Part 2 of the standard SRPS EN ISO 12006 defines the framework for the development of the built environment classification systems and identifies a set of recommended classification table titles for a range of information object classes according to particular views, e.g. by form or function.

Part 3 of the standard SRPS EN ISO 12006 specifies a language-independent information model which can be used for the development of dictionaries used to store or provide information about construction works.

The document consists of a specification of the taxonomy model, which provides the possibility to define concepts using properties, group concepts, and define relationships between concepts.

✓ Standard SRPS EN ISO 16739-1

Industry Foundation Classes – IFC is an open international standard for Building Information Modelling (BIM) data that are exchanged and shared among software applications used by the various participants in the construction industry sector or facility management industry sector.

3.3.2 Useful links

- National regulations and standards https://iss.rs/en/regulation
- ISS Terminology Daatabase https://iss.rs/en/term

4 BIM BASIC TERMINOLOGY

Term in English	Term in Serbian	Definition in English
responsibility matrix	матрица одговорности	chart that describes the participation by various functions in completing tasks or deliverables
space	простор	limited three-dimensional extent defined physically or notionally
actor	учесник	person, organization or organizational unit involved in a construction process
appointment	именовање	agreed instruction for the provision of information concerning works, goods or services
appointed party	именована страна	provider of information concerning works, goods or services
appointing party	страна која именује	receiver of information concerning works, goods or services from a lead appointed party
client	клијент	actor responsible for initiating a project and approving the brief
delivery team	достављачки тим	lead appointed party and their appointed parties
task team	радни тим	individuals assembled to perform a specific task
asset	имовина	item, thing or entity that has potential or actual value to an organization
project information	информације о пројекту	information produced for, or utilized in, a particular project
life cycle	животни циклус	life of the asset from the definition of its requirements to the termination of its use, covering its conception, development, operation, maintenance support and disposal
delivery phase	фаза испоруке	part of the life cycle, during which an asset is designed, constructed and commissioned
operational phase	оперативна фаза експлоатације	part of the life cycle, during which an asset is used, operated and maintained
trigger event	покретачки догађај	planned or unplanned event that changes an asset or its status during its life cycle, which results in information exchange

Term in English	Term in Serbian	Definition in English
key decision point	тачка кључне одлуке	point in time during the life cycle when a decision crucial to the direction or viability of the asset is made
information	информација	reinterpretable representation of data in a formalized manner suitable for communication, interpretation or processing
information requirement	захтев за информацијама	specification for what, when, how and for whom information is to be produced
organizational information requirements **OIR**	захтеви за организационим информацијама OIR	information requirements in relation to organizational objectives
asset information requirements **AIR**	захтеви за информацијама о имовини AIR	information requirements in relation to the operation of an asset
project information requirements **PIR**	захтеви за информацијама о пројекту PIR	information requirements in relation to the delivery of an asset
exchange information requirements **EIR**	захтеви за размену информација EIR	information requirements in relation to an appointment
information exchange, verb	размењивати информације	act of satisfying an information requirement or part thereof
information model	информациони модел	set of structured and unstructured information containers
asset information model **AIM**	информациони модел имовине AIM	information model relating to the operational phase
project information model **PIM**	информациони модел пројекта PIM	information model relating to the delivery phase
information container	информациони контејнер	named persistent set of information retrievable from within a file, system or application storage hierarchy

Term in English	Term in Serbian	Definition in English
building information modelling **BIM**	информационо моделирање објеката BIM	use of a shared digital representation of a built asset to facilitate design, construction and operation processes to form a reliable basis for decisions
common data environment **CDE**	заједничко информационо окружење CDE	agreed source of information for any given project or asset, for collecting, managing and disseminating each information container through a managed process
level of information need	ниво потреба за информацијама	framework which defines the extent and granularity of information
capability	способност	measure of ability to perform and function
capacity	капацитет	resources available to perform and function
acceptance criteria	критеријум прихватања	evidence required for considering that requirements have been fulfilled
project team	пројектни тим	appointing party and all delivery teams
plan of work	план рада	document that details principal stages in the design, construction work and maintenance of a project and identifies the main tasks and people
BIM execution plan	план спровођења BIM-а	plan that explains how the information management aspects of the appointment will be carried out by the delivery team
information delivery milestone	кључни тренутаку испоруци информација	scheduled event for a predefined information exchange
master information delivery plan **MIDP**	главни план испоруке информација MIDP	plan incorporating all relevant task information delivery plans
task information delivery plan **TIDP**	план испоруке информација о задацима TIDP	schedule of information containers and delivery dates, for a specific task team
asset management	менаџмент имовином	coordinated activity of an organization to realize value from assets
facility management **facilities management**	менаџмент одржавањем објеката и опреме FM	organizational function which integrates people, place and process within the built environment with the purpose of improving the quality of life of people and the productivity of the core business

Term in English	Term in Serbian	Definition in English
metadata	метаподаци	data about data
need-to-know	потреба за знањем	legitimate requirement of a prospective recipient of information to know, to access, or to possess sensitive information
risk appetite	склоност ка прихватању ризика	amount and type of risk that an organization is willing to pursue or retain
safety	безбедност	state of relative freedom from threat or harm caused by random, unintentional acts or events
security	сигурност	state of relative freedom from threat or harm caused by deliberate, unwanted, hostile or malicious acts
security breach	нарушавање сигурности	infraction or violation of security
security incident	безбедносни инцидент	suspicious act or circumstance threatening security
security-minded	сигурносни/заснован на сигурности	understanding and routinely applying appropriate and proportionate security measures in any business situation so as to deter and/or disrupt hostile, malicious, fraudulent and criminal behaviours or activities
sensitive information	осетљива информација	information, the loss, misuse or modification of which, or unauthorized access to, can: – adversely affect the privacy, security or safety of an individual or individuals; – compromise intellectual property or trade secrets of an organization; – cause commercial or economic harm to an organization or country; and/or – jeopardize the security, internal and foreign affairs of a nation
residual risk	преостали ризик	risk that remains after controls have been implemented
threat	претња	potential cause of an incident which may result in harm
top management	највише руководство	person or group of people who directs and controls an organization at the highest level
vulnerability	рањивост	weakness that can be exploited to cause harm

5 LIST OF SERBIAN STANDARDS IN BIM FIELD

5.1 Published documents

No.	Document designation	Referent document	Document title
1.	SRPS CEN/TR 17439:2021	CEN/TR 17439:2020	Guidance on how to implement EN ISO 19650-1 and -2 in Europe
2.	SRPS EN 17412-1:2021	EN 17412-1:2020	Building Information Modelling – Level of Information Need – Part 1: Concepts and principles
3.	SRPS EN ISO 12006-2:2020	EN ISO 12006-2:2020, ISO 12006-2:2015	Building construction – Organization of information about construction works – Part 2: Framework for classification
4.	SRPS EN ISO 12006-3:2017	EN ISO 12006-3:2016, ISO 12006-3:2007	Building construction – Organization of information about construction works – Part 3: Framework for object-oriented information
5.	SRPS EN ISO 16739-1:2021	EN ISO 16739-1:2020, ISO 16739-1:2018	Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries – Part 1: Data schema
6.	SRPS EN ISO 16757-1:2019	EN ISO 16757-1:2019, ISO 16757-1:2015	Data structures for electronic product catalogues for building services – Part 1: Concepts, architecture and model
7.	SRPS EN ISO 16757-2:2019	EN ISO 16757-2:2019, ISO 16757-2:2016	Data structures for electronic product catalogues for building services – Part 2: Geometry
8.	SRPS EN ISO 19650-1:2019	EN ISO 19650-1:2018, 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
9.	SRPS EN ISO 19650-2:2019	EN ISO 19650-2:2018, 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

No.	Document designation	Referent document	Document title
10.	SRPS EN ISO 19650-3:2020	EN ISO 19650-3:2020, ISO 19650-3:2020	Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) – Information management using building information modelling – Part 3: Operational phase of the assets
11.	SRPS EN ISO 19650-5:2020	EN ISO 19650-5:2020, 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
12.	SRPS EN ISO 21597-1:2021	EN ISO 21597-1:2020, ISO 21597-1:2020	Information container for linked document delivery – Exchange specification – Part 1: Container
13.	SRPS EN ISO 21597-2:2021	EN ISO 21597-2:2020, ISO 21597-2:2020	Information container for linked document delivery – Exchange specification – Part 2: Link types
14.	SRPS EN ISO 23386:2020	EN ISO 23386:2020, ISO 23386:2020	Building information modelling and other digital processes used in construction – Methodology to describe, author and maintain properties in interconnected data dictionaries
15.	SRPS EN ISO 23387:2020	EN ISO 23387:2020, ISO 23387:2020	Building information modelling (BIM) – Data templates for construction objects used in the life cycle of built assets – Concepts and principles
16.	SRPS EN ISO 29481-1:2017	EN ISO 29481-1:2017, ISO 29481-1:2016	Building information models – Information delivery manual – Part 1: Methodology and format
17.	SRPS EN ISO 29481-2:2017	EN ISO 29481-2:2016, ISO 29481-2:2012	Building information models – Information delivery manual – Part 2: Interaction framework

5.2 DOCUMENTS IN PREPARATION

No.	Document designation	Referent document	Document title
1.	prSRPS EN 17549-1:2020	prEN 17549-1	Building information modelling – Information structure based on EN ISO 16739 1 to exchange data templates and data sheets for construction objects – Part 1: Data templates and configured construction objects
2.	dnaSRPS CEN/TR 17654:2019*	CEN/TR 17654:2021	Guideline for the implementation of Exchange Information Requirements (EIR) and BIM Execution Plans (BEP) on European level based on EN ISO 19650-1 and -2
3.	dnaSRPS CEN/TR 17741:2019	FprCEN/TR 17741	Guidance for understanding and utilize EN/ISO 29481-1 Building information models – Information delivery manual – Part 1: Methodology and format
4.	naSRPS EN 17632:2020	prEN 17632	Building Information Modelling (BIM) – Semantic Modelling and Linking (SML)
5.	naSRPS EN ISO 12006-3:2018	prEN ISO 12006-3, ISO/DIS 12006-3	Building construction - Organization of information about construction works – Part 3: Framework for object-oriented information
6.	naSRPS EN ISO 19650-4:2019	prEN ISO 19650-4, ISO/DIS 19650-4	Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling – Part 4: Information exchange
7.	naSRPS EN ISO 29481-3:2020	prEN ISO 29481-3, ISO/DIS 29481-3	Building information models - Information delivery manual – Part 3: Data schema and code
8.	prSRPS EN 17549-2:2019	prEN 17549-2	Building information modelling - Information structure based on EN ISO 16739 1 to exchange data templates and data sheets for construction objects – Part 2: Configurable construction objects and requirements
9.	prSRPS EN ISO 19650-6:2021	prEN ISO 19650-6, ISO/AWI 19650-6	Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) – Information management using building information modelling – Part 6: Health and Safety

* to be published.

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[7] Business Plan CEN/TC 442 Building Information Modelling, Version 2020-12-15, https://standards.cencenelec.eu/BP/1991542.pdf

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