

Article

# Cultural Heritage Digitization in Serbia: Standards, Policies, and Case Studies

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**Abstract:** The paper identifies necessary steps to create a national information system for management and preservation of cultural heritage documentation. The Republic of Serbia, where the digitization of cultural heritage is recognized as a segment of cultural development and officially accepted as one of the methods for preservation and presentation of heritage documentation, is taken as a case study. The paper describes the evolutionary path of the digitization process in Serbia and analyzes the importance of the adoption of a legal framework and establishment of national standards in the process of achieving the uniqueness in cultural heritage long-term sustainable documentation management and preservation across cultural institutions.

**Keywords:** cultural heritage digitization; cultural heritage documentation management; cultural heritage metadata

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## 1. Introduction

In the Republic of Serbia, digitization of cultural heritage has been defined as a comprehensive procedure of cultural heritage management in a digital setting, encompassing but not limited to translation of an analogue to digital form, establishment of a metadata system and description of digitized and digital content, development of tools, electronic catalogs, and information systems, and long-term preservation, presentation, and provision of accessibility to the contents [1,2]. This procedure has been recognized as a part of a complex system of cultural heritage preservation and management in cultural institutions in the territory of Serbia (the term “cultural institutions” designates museums, archives, libraries, and institutes for the protection of cultural monuments) [2,3]. The recommendation is that every cultural institution, in accordance with official guidelines [2], should establish a system for managing digital assets or collections, as well as a descriptive metadata format for documentation [1]. It is expected that these systems will become a part of the national information system for management and preservation of cultural heritage documentation [1]. The importance of such a joint system is that it ensures accessibility of information on cultural heritage, enables exchange of data among cultural institutions, creates new and complements existing cultural heritage documentation, promotes and displays cultural heritage, increases the number of users, creates new contents, and introduces new services.

In this paper, by reviewing the development of the digitization of cultural heritage in Serbia, we will provide an answer to the question why it became necessary to standardize and unify the digitization procedure in Serbia. Starting from an assumption that a systemic and well-thought-out approach to the development of digitization in the field of culture in Serbia is not possible without recourse to appropriate state bodies, we analyze recent efforts by the Ministry of Culture and Information in terms of regulating the procedure of cultural heritage digitization and establishing a common information system. We underline that a necessary step towards establishing the

homogeneous system is the adoption of an appropriate metadata scheme at the national level, and we make a proposal of a national scheme compatible with broadly-accepted international schemes and standards, enabling at the same time interoperability among local cultural institutions. Motivated by a desire to show the practical applicability of the Ministry of Culture and Information guidelines, as well as the proposed metadata scheme, we present a pilot system for managing digitized and digital cultural properties developed with the support of the Ministry of Culture and Information and in cooperation between the Mathematical Institute of the Serbian Academy of Sciences and Arts (MISANU) and several cultural institutions. In this paper, we present two examples showcasing how this system works: one that involves digitized diplomatic and political documents of the Kingdom of Serbia from 1903–1914 and another that pertains to documenting cultural heritage of medieval fortification Bač and its surroundings, testing the potential of official guidelines and the proposed metadata scheme to describe sundry material. We conclude that a common information system in the field of culture in Serbia should be set up and managed by the Government via state administration bodies and in cooperation with cultural institutions. Important steps in the establishment of this system are: making of an appropriate legal framework and adoption of national standards for documenting cultural heritage in a digital environment. These should create a sustainable relationship between the official strategy and policy in the field of culture and individual plans and programs of cultural institutions as budgetary users in charge of implementing this strategy.

The rest of the paper is organized in the following way. In the second section, we give a short overview of development of the digitization of cultural heritage in Serbia. In Section 3, we discuss current national policies for digitization in Serbia. In Section 4, we introduce the national standard for describing digitized heritage in Serbia. We then present two case study examples in Section 4. Section 5 concludes with suggestions for future research.

## 2. A Short Overview of the Development of the Digitization of Cultural Heritage in Serbia

Digitization of cultural heritage is a relatively new field of research, and due to its dynamic development, no general definition has yet emerged. It is a multidisciplinary procedure of cultural heritage management in a technological environment, which encompasses philosophical, social, cultural, and economic aspects and consequences [4]. This procedure differs, particularly in terms of the selection of goals, technologies, and standards or models of financing, across organizations and countries. The challenge is that it is constantly changing, because it depends on swift development of technology, the trajectory of which is difficult to envisage, so it would be counterproductive to insist on fixed rules and standards. Nevertheless, in the past two decades, there has been a tendency to standardize and unify them in order to optimize the outcome, achieve a high level of quality, enable cooperation, overcome obstacles, and prevent misuse. For example, the European Union (EU), recognizing the potential of the digitization of cultural heritage for preservation, education, and tourism, has already in 2000 thought about the mechanisms of coordination among digitization programs of member states and set the enactment of national strategies of the digitization of cultural heritage as one of the priorities [5,6]. Finland, Italy, and Poland very soon established working groups and committees with the task of creating strategies, and in 2009, Lithuania was one of the first EU countries with a national strategy of cultural heritage digitization [7].

In the Republic of Serbia, the first draft of a strategy regarding cultural heritage digitization and specifying of this term as a comprehensive procedure of cultural heritage management in a digital environment was made in 2017 [3], even though the first projects, which are today identified as the first endeavors of the digitization of cultural heritage in the territory of Serbia, appeared in the mid-1990s [8]. At that time, digitization was not considered a comprehensive procedure, so the focus was only on some of its elements, among other things, on electronic analysis of texts or images, on storage and management, as well as on presentation and preservation. Furthermore, in this period, the development of the digitization of cultural heritage overlapped with the development of digital humanities, so the history of the evolution of both of these fields is usually perceived jointly. We have

made an attempt to isolate several moments in its development that illustrate why it was necessary to standardize and regulate this procedure in Serbia, as well as why there was a need to establish a common information system in the field of culture. It should be noted that only a short overview is provided, given that a detailed analysis of the development of the digitization of cultural heritage in Serbia would require separate research.

In the time of development and broader use of personalized computers, the global computer network, and web browsers, and in the time when the Library of Congress in Washington, D.C., for the first time put its digitized holdings on the web [9], the first digitization projects were also undertaken in Serbia. These included “PANDORA”, the objective of which was to create an expert system (equipped with an electronic database of archaeological material) to help with the dating of archaeological material, and the project entitled “Old maps, engravings and photographs from the collection of the City Museum of Belgrade”, the objective of which was to create digitized collections of old maps, engravings, and early photographs from the City Museum of Belgrade, as well as the collected works of prominent Serbian mathematician Bogdan Gavrilović [8]. None of the projects at the time made use of the term digitization and instead used terms such as scanning, electronic archiving, multimedia presentation, and electronic editions. Moreover, participants of these projects did not profess to be digitization experts; they were IT specialists, archivists, librarians, and museologists who explored the possibilities of multidisciplinary cooperation in the creation of infrastructures for the preservation, management, and presentation of cultural heritage in electronic form through joint projects [8]. Finally, these were one-off projects of individual institutions marked by weak or non-existing mutual cooperation [10].

After a meeting of representatives of the European Commission and EU member states in Lund in 2001, where the issues of the digitization of European heritage were discussed [5], cultural institutions in Serbia became more familiar with the notion of the digitization of cultural heritage and started to think about how to coordinate existing and future work on the digitization of national heritage [10]. Already in 2002 (the year the United Nations General Assembly declared to be the United Nations’ Year for Cultural Heritage), a group of cultural and scientific institutions in Serbia proposed establishment of a *National Center for Digitization* (NCD), a platform by key cultural heritage stakeholders tasked with defining standards and coordinating work on the digitization of national heritage [10]. The draft program of this Center was based on the conclusions of the G7 meeting in Brussels in 1995 (At the meeting, it was specified that “culture is a key dimension of the Information Society. The exchange of information on the world’s cultural heritage will help people from different cultures around the world to understand each other better” [11]), as well as on the idea of the pilot project “Multimedia Access to World Cultural Heritage” carried out in cooperation between France and Italy with THE aim to ensure inter-operation of networks for open multimedia access to major museums and galleries, as well as to accelerate THE digitization of collections and ensure their accessibility to the public [11,12]. The NCD was established with THE desire to ensure THE comprehensibility and continuity of the process of THE digitization of cultural heritage. Comprehensibility implied THE inclusion of a broad circle of cultural and scientific institutions, while the requirement of continuity originated from the aforementioned fact that projects of this kind in Serbia were carried out on a one-off basis [10]. Although the idea of the establishment of the NCD was supported by state authorities, they were not able to formalize it at that time [13]. However, the NCD was established as a non-governmental organization and provided the first suggestions regarding the national standard, organized the first scientific conference on digitization of cultural heritage in 2002, and launched the first specialized journal called *NCD Review* [14].

The beginning of the new millennium was marked by attempts by the cultural institutions in Serbia to integrate the process of digitization into their missions and services, and the largest ones such as the National Library of Serbia got involved in large-scope digitization projects (for example, in 2004, the National Library of Serbia hosted the international conference dedicated to the European project “CALIMERA” [15,16], and in 2005, it was a coordinator of the project “Serbian

children's digital library" [17], which came from a wider international project "ICDL—International Children's Digital Library" [18]). In addition, in 2004, the NCD participated in the establishment of an international network of institutions and individuals interested in digitization of cultural heritage in the territory of Southeastern Europe, entitled "South-Eastern European Digitization Initiative" [19] and in 2006 represented Serbia at the convention of EU member states dedicated to digitization within the "MINERVA" and "MICHAEL" networks of the ministries of EU member states in charge of cultural policies (In 2002, a network of the ministries of culture of EU member states was established entitled "MINERVA" with the task to coordinate digitization projects in the field of cultural heritage [20]. Soon afterwards, joint initiatives were launched, such as for example "MICHAEL", in order to create a portal that would enable simple and quick access to digital holdings of cultural institutions in European countries [20], and "EUROPEANA", a common source of cultural heritage of Europe [7] [21,22]. Nonetheless, the work on the establishment of a mechanism of coordination among national digitization projects proceeded slowly. Given the lack of a national strategy and guidelines in the area of the digitization of cultural heritage, cultural institutions proceeded to complete digitization projects either on their own strength (e.g., the Historical Museum of Serbia created its own database for managing museum documentation, which was subsequently adopted by a group of museums [23]) or have sought outside assistance (e.g., the University Library in Belgrade turned to international initiatives such as "EUROPEANA" for the exchange of knowledge necessary for successful realization of projects in the field of digitization of cultural and scientific heritage [24]), while a number of cultural institutions have decided not to engage in digitization projects until clear guidelines have been defined at the state level (in the chronological framework from 1995 to the present, cultural heritage digitization projects by cultural and scientific institutions in Serbia can roughly be classified into the following categories: foundations and definitions (e.g., [25–32]); overviews and surveys (e.g., [10,19,21,33–39]), pilot projects (e.g., [40–42]), projects of presentations of cultural and scientific heritage (e.g., [43–65]), applications in education (e.g., [66–68]), analysis of data stored in developed databases (e.g., [69–71]), and as chapters of MSc and PhD theses (e.g., [72,73])). The consequence of all this was that digitization projects by cultural institutions in Serbia differed in standards and systems for describing and managing cultural heritage they adhered to, presenting a challenge for consistency and the possibility of migration, as well as protection, preservation, and accessibility of digitized and digital content in the future. Furthermore, no mechanism existed through which it could be ascertained how many digitization projects by cultural institutions for which the funds had been granted were indeed carried out, whether a duplication of efforts occurred, and whether the stored information was trustworthy.

In such circumstances, it was necessary to adopt a top-down approach and rely on competent bodies of the state administration to assume a systemic and well-thought-out approach to the development of digitization in the field of culture. The current direction implies that the process of digitization should be approached in a uniform way, rather than through specific fields, in order to build a comprehensive and sustainable system of digital heritage. The establishment of a common information system in the field of culture would, among other things, store valuable information on digitized and digital holdings of cultural institutions in Serbia and vouchsafe their trustworthiness.

### 3. National Policies for Digitization of Cultural Heritage in Serbia

In the last two decades, there has been a growing tendency to create strategies and policies of cultural heritage digitization at the institutional and national level with the goal to standardize and optimize the digitization process and improve the overall quality. Until 2011, the area of the digitization of cultural heritage was not regulated by any legislative act in Serbia, nor did it have its foundation in strategic documents. However, the process of digitization, the use of information and communication technologies in culture, as well as multimedia and digital arts began to assume a strategic position and was given a legal framework within the "Law on Culture" adopted in 2009 [74]. This law defines the process of digitization as a "general interest in culture" and encourages:

- the application of new technologies in culture,
- the use of the process of digitization, and
- the development of digital research infrastructure in the field of the protection of cultural heritage and arts.

It opened the door to the implementation of various software solutions and the development of electronic registers, databases, and information systems in cultural institutions [75]. Furthermore, it had an effect on the allocation of budget funds of the Republic of Serbia, which were now also granted to heritage digitization projects; for example, through open calls of the Ministry of Culture and Information issued by its Cultural Heritage Sector [76].

The next strategic move in policy-making regarding the regulation of the digitization process at the national level was the adoption of the “Law on Library and Information Services”. This law not only regulated the work of libraries, but also specified the importance of digitization, as well as the information systems in library science [77]. It defined the National Library of Serbia as the coordinator of the process of digitization, development, and implementation of a unique information system. Additionally, it made it responsible for the training of librarians. At a given moment, in the absence of a cultural development strategy, this law managed to determine the direction and methods of carrying out the process of digitization in one important segment of culture. It represented the implementation of cultural policy through the work of libraries and the library network in Serbia. Later, the process of digitization in libraries was defined more precisely by the “Rulebook on Detailed Conditions for Digitization of Library Material and Resources”, which entered into force in 2017 [78].

The establishment of the Sector for the Development of Digital Research Infrastructure in the Fields of Culture and Arts of the Ministry of Culture and Information has additionally determined the strategic direction for the digital transformation of cultural institutions [79]. In cooperation with other government departments (telecommunications, education, IT companies, scientific institutes, etc.), the Sector has influenced the development of the digitization process as a multidisciplinary process. This cooperation led to the adoption of the “Law on Electronic Document, Electronic Identification and Trust Services in Electronic Business”, on the basis of which the Ministry of Culture and Information adopted the “Rulebook on Detailed Conditions for the Digitization of Cultural Heritage in 2018” [1].

The Rulebook was the first legislative act in Serbia that determined detailed conditions for the implementation of the digitization process in cultural institutions in Serbia. It defines the procedure of digitization, the work of experts, and how to ensure and preserve digitized and digital data on tangible and intangible heritage. Since it refers to other legal solutions regulating the area of electronic business, technical conditions for data storage and protection, etc., it offers the possibility of the cooperation of different groups of stakeholders in the digitization process, with the goal to optimize material and human resources. Its strategic importance lies in the obligation of cultural institutions to create and adopt their own plans and programs for the implementation of the digitization process, on the basis of which the Ministry of Culture and Information can undertake strategic planning and make budgetary and resource allocations.

The Ministry of Culture and Information is planning to adopt finally the “Strategy for Cultural Development in the Republic of Serbia for the 2019–2029 period”, as well as amend the “Law on Culture”. The goals defined by the Strategy determine more precisely the mechanisms for the implementation of cultural policy. These mechanisms were already specified in the aforementioned normative acts concerning the management of digitized and digital heritage, intersectoral collaboration, the development of a knowledge-based society, the availability of digitized and digital content, and the transparency of the work of cultural institutions. Amendments to the “Law on Culture” will define the process of digitization as an obligation of all employees, in all segments of the work of a cultural institution.

#### 4. National Standard for Describing Digitized Heritage in Serbia

Since 2003, the team of the Mathematical Institute of the Serbian Academy of Sciences and Arts (MISANU), supported by employees from different national cultural institutions, through the National Center for Digitization, started to work on national recommendations for metadata format for describing cultural and scientific heritage. Aware of the availability of numerous formats of this kind, which are usually highly adapted for one class of heritage based on previous practice in a particular field, the team decided to develop a single comprehensive format for all the heritage regardless of their origin.

The team established several principles for that format:

- modularity: the proposed format should be modular to reduce the need for redundant information and to enable different ways to access and combine stored data;
- refinement: the proposed format should be sufficient to describe the contents regardless of the type of the institution of origin;
- extensibility: the proposed format should enable every institution to adapt the format for their specific workflow;
- multilingualism: the proposed format should provide the possibility of a multi-lingual description;
- controlled thesaurus: the proposed format should enable usage of pre-defined dictionaries whenever possible; and
- flexibility: the proposed format should enable mapping into/from the most-used similar international standards (an example of these mappings is provided in Table 1).

For reference standards, the team used widely-accepted standards from different domains. The Library of Congress in Washington, D.C. (USA), established two formats for the purpose of the representation and communication in machine-readable form. The first is “MARC”, used for bibliographic information, and the second is “EAD”, which is used for archival material (the Serbian libraries adopted the schemes based on “MARC” as a standard for representation and communication of bibliographic and related information in machine-readable form, and Serbian archives adopted schemes based on “EAD” as a standard for description). “CIDOC CRM” is also known as the ISO 21127:2006 standard. It is used by the museology community, also to exchange information in machine-readable form. One of the most popular formats in this field is “DC”. It was established in the mid-1990s. It is the first format convenient to describe the cultural heritage of various origin, so it can be seen as the general purpose format. This is because it is simple and easy to use, but the set of elements is quite narrow. On the one hand, it earned its popularity due to this fact, but as a consequence, it is not possible to produce a very detailed description of cultural heritage able to satisfy the needs of all experts and scholars.

**Table 1.** Mappings to/from some international standards.

“NCD”	“DC”	“ISAD”	“EAD”	Library of Congress
Description	description	3.3.1	scopecontent	description summary
Type	type	3.1.5	genreform	original content type
Material	medium	3.1.5	physdesc	
Rights	rights	3.4.2	userrestrict	access rights
Access rights	accessRights	3.4.1	accessrestrict	access category
Note		3.6.1	note, odd	
Capture device(s)			daodesc	capture device ID
MIMEformat(s)	Format		daodesc	Internet media type

Having all this in mind, the team of MISANU used the object-oriented paradigm to develop the recommended format, where the proposed classes were:

- Controlled term: for the entities (entities are digital data, i.e., objects that are instances of the corresponding classes) of the controlled thesaurus;
- Person and group of persons: for the entities that have intellectual or other important contributions to creation or ownership (e.g., authors of cultural properties, translators, persons that digitize cultural properties);
- Digital document: for entities of the digital representation of assets that have been digitized;
- Digitized asset (cultural properties): for entities of movable cultural heritage (the assets with their origin in libraries, archives, and museums) with a common core and domain-specific parts;
- Immovable asset: for entities like monuments and other stationary assets; and
- Collection: for entities that represent sets of digitized assets.

Figure 1 illustrates the complex relationships between classes. For example, the class that corresponds to digitized assets from libraries inherited the class that corresponds to digitized assets (denoted by “KERNEL” in the figure) and enriches it with library-specific data. A description of a book (an instance of the class digitized assets) can be connected to possibly numerous instances of the class Digital object (digital representation of the book and the corresponding metadata about the digital representation). Furthermore, an object representing a book can belong to several collections (instances of the class Collection); instances of the class Controlled term can be used as meta-data for describing the book, etc.

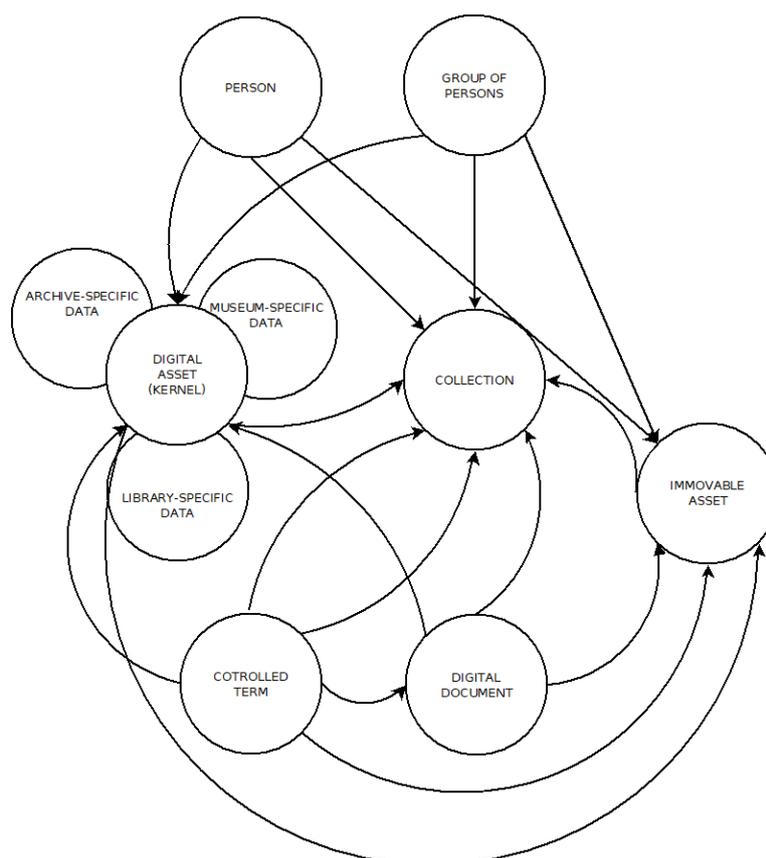


Figure 1. Data model.

This format was accepted as a part of the *Guidelines for Digitization of Cultural Heritage* (for more information on the metadata proposal scheme, please refer to [29,30,32,80,81]) [2].

## 5. Case Study Examples

In the following text, we present two recent examples of the management and preservation of cultural heritage documentation in which the aforementioned national policies and guidelines for digitization (see Section 3) and proposed metadata scheme (see Section 4) have been applied:

- Documents on foreign policy of the Kingdom of Serbia 1903–1914, <http://diplprepiska.mi.sanu.ac.rs/>; and
- Historical place Bač and its surroundings, <http://www.serbia-forum.org/Wiki.jsp?setLang=en&page=GlavnaSpomenici2>

The edition *Foreign Policy Documents of the Kingdom of Serbia 1903–1914* presented a published collection of “preserved Serbian diplomatic and political documents significant for Serbia’s international relations with other states in the Balkans, Europe and the world in the 20th century before World War I” [82]. It consisted of 42 volumes in total, with more than 30,000 pages of documents that were published in the period between 1980 and 2015. Recently, it was digitized and presented on the web thanks to the efforts of the Serbian Academy of Sciences and Arts and the MISANU and with the support of the Ministry of Culture and Information. The procedure of digitization was carried out in compliance with current guidelines for digitization of archival material in Serbia and consisted of the following steps: (1) adjusting the officially-proposed metadata scheme and vocabulary necessary to describe the content, (2) structuring and marking up the text using a specially-developed editor, and (3) designing a digital repository based on the *Serbia-Forum* platform [83]. The result was an easy-to-use web database intended for users “who wish to engage in serious study of the Serbian history, its aspirations and objectives, role, place and significance in the 1903–1914 period, and to research whether Serbia sought war or tried to evade it and whether it was guilty for its outbreak or not” [82]. It presents an invaluable point of reference for their research and connects that research with a broader context. Each document in the database is described and has its own presentation. For example, the presentation of the telegram of Nikola Pasic on the Austro-Hungarian Declaration of War on Serbia encompasses a scanned picture of a published telegram in PDF, a structured text of the telegram, and appropriate metadata [84]. One can notice that the procedure of the digitization of archival material was used as a new method for management and preservation of Serbian diplomatic and political documents, and the aim of the metadata is not only to help users find relevant information, but also to ensure preservation of data in a way that will enable their accurate interpretation over a longer time period (Table 2).

**Table 2.** Example of selected metadata elements for the description of a published telegram.

Element	Description
Document Number	634
Page	710
Gregorian Date	28 July 1914
Julian Date	15 July 1914
Place of release	Niš
Institution sender	Ministry of Foreign Affairs of the Kingdom of Serbia
Institution recipient	All the embassies of the Kingdom of Serbia
Abstract	On the Austro-Hungarian Declaration of War on Serbia
Type	Telegram
Subject	Serbia—Austria-Hungary—Declaration of War Foreign Relations of the Kingdom of Serbia

In addition to digitization of archival and historical documents, we continue by discussing an example on the management and preservation of cultural monuments documentation. *Virtual Presentation of Historical place Bač and its surroundings* was created in 2018 as a result of a joint project of the Provincial Institute for the Protection of Cultural Monuments—Petrovaradin and the MISANU

and with the support of the Ministry of Culture and Information. It presents not only cultural heritage of northwestern Serbia, but also the natural surroundings of this area, where the evidence of human life has existed from eight millennia ago. It consists of the website targeted for a wide audience, a pilot web database, and an application for mobile devices for site visitors. Currently, the database includes documentation on five medieval cultural monuments, as well as archaeological artifacts found in the area of Bač [85]. Each monument is presented as a separate digital collection, which contains, in addition to introductory photograph and text, digital documents grouped in the following categories: movie, panorama, 3D model, and photo. Digital documents are described using the officially-proposed metadata scheme and in accordance with national guidelines for the digitization of cultural properties. For example, the 3D model of bronze book cover from the 15<sup>th</sup> Century, which is a part of an archaeological exhibition of Bač fortress, is described by using the following elements: name, textual description, physical description (dimensions and the measurement unit), building material, the date of the creation of the description, and the creator of the record [86] (Table 3). It should be noted that the creator of the record can decide which elements of the metadata set will be used since the proposed scheme offers a wide range of optional elements.

**Table 3.** Example of selected metadata elements for the description of an archaeological artifact.

Element	Description
Title	Book cover
Textual Description	Bronze, casting, engraving. The shape is deltoid, decorated with floral motifs. 15th Century.
Physical description	Dimensions 80 × 63 × 0.5.
Unit of Measurement	mm
Material	Bronze
Description creation date	22 January 2019.
Document author	TI57/03. Bač, Fortress. Museum of Vojvodina in Novi Sad.

By following these examples, cultural institutions in Serbia could create appropriate systems and data that could easily become part of a common information system. However, even though some of the elements of sustainability are covered (e.g., interoperability), these examples in regards to required resources, such as adequate storage or maintenance technicians, as well as regular updating, could face challenges in a period of budget cuts. To avoid the situation in which Greece found itself in 2010, when it had to withdraw its further engagement in the international digitization projects due to the economic crisis [87], the Ministry of Culture and Information recommended that the cultural institutions in Serbia adjust their individual plans and programs with the national strategy in the field of culture and carefully plan the funds necessary for maintenance of existing and future digitization projects [1] (the management of the digitization process in Serbian cultural institutions was financed by a government budget and through national and international open calls). Furthermore, the common national information system managed by the appropriate governmental body could be a solution to the challenge of providing necessary resources to maintain data and protect them against various attacks.

## 6. Conclusions and Future Initiatives

In the paper, we examined the recent endeavors of the Ministry of Culture and Information in the field of cultural heritage digitization in Serbia. We emphasized that the backbone of its initiative is to regulate the process of digitization and give clear guidelines to cultural institutions on how to preserve digital and digitized heritage and make it available at the click of a button. We conclude that this “top-down” approach is necessary as a coordination mechanism for a more systematic, sustainable, and meaningful process of cultural heritage digitization in Serbia. The important step towards this mission will be adoption of the Strategy for Cultural Development in the Republic of Serbia for the 2019–2029

period and the amendments to the existing Law on Culture. This should be a stepping stone toward a legal framework that will regulate the work of cultural institutions in the digitization process and help them in the implementation of broadly-accepted standards and achievement of interoperability.

Furthermore, we presented a metadata scheme accepted as a part of the Guidelines for Digitization of Cultural Heritage in Serbia, which is compatible with the best-known and widely-used schemes and standards. We suggested its implementation in the process of cultural heritage documentation management to ensure the preservation, presentation, and accessibility of cultural properties over a longer time period. Additionally, we anticipate that it could lead to the development of a national standard, as well as a national information system for management and preservation of cultural heritage documentation.

Finally, we introduced two case study examples where the proposed metadata scheme and official policies and guidelines were successfully applied. Thanks to the support of the Ministry of Culture and Information, we will further analyze the level of applicability of the proposed metadata scheme and official recommendations for the digitization process on the example of the digitization of tangible and intangible heritage of the multicultural and diverse environment of Novi Pazar in Southern Serbia.

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## Abbreviations

The following abbreviations are used in this manuscript:

CIDOC CRM	CIDOC Conceptual Reference Model
DC	Dublin Core
EAD	Encoded Archival Description
EU	European Union
MARC	Machine-Readable Cataloging
MISANU	Mathematical Institute of the Serbian Academy of Sciences and Arts
RS	Republic of Serbia

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