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## INFORMATION SYSTEM OF IMMOVABLE CULTURAL PROPERTY AS AN INSTRUMENT FOR THE PRESENTATION OF THE ARCHAEOLOGICAL HERITAGE OF SERBIA

## **ABSTRACT**

The Information System of Immovable Cultural Property (IS NKD) is one of the five basic information systems for the digitization of the cultural heritage of the Republic of Serbia. In the framework of this information system, data on the protected immovable cultural heritage of the Republic of Serbia (immovable cultural property) is stored. The IS NKD contains data on the legal protection of property, other obligatory documentation that legally must accompany any protected site or object, as well as auxiliary documentation related to the history, values, features, condition or undertaken conservations, restorations and other works of cultural property. One type of immovable cultural property are archaeological sites, but archaeological localities may also be one of the remaining four types of immovable cultural property, or part of them. Within the IS NKD there is a special space provided for the entry of data on carried out archaeological research concerning a specific site or object. The presentation of existing information on the archaeological heritage of the Republic of Serbia is not intended solely for experts from the cultural heritage protection service. One of the goals of the IS NKD is to make cultural heritage more familiar and more accessible to the broader public.

KEYWORDS: IMMOVABLE CULTURAL PROPERTY, ARCHEOLOGICAL SITE, DIGITIZATION, INFORMATION SYSTEM OF IMMOVABLE CULTURAL PROPERTY.

## INTRODUCTION

Digitization of documentation and information of the immovable cultural heritage of the Republic of Serbia is carried out for three reasons. The first is the long-term retention of documentation and information about immovable cultural heritage (which is, at the same time, a form of backup of them). The second is to facilitate the work of employees in all institutes for the protection of cultural monuments (some information will now be "just a few clicks away"). The third, but no less important than previous two, is to allow a greater

visibility of cultural heritage to the public.

The Information system of Immovable Cultural Property (Serbian: Informacioni sistem nepokretnih kulturnih dobara, abbreviated: IS NKD) is one of the five basic information systems for the digitization of the cultural heritage of the Republic of Serbia.1 The IS NKD was created in 2016, and has been continuously upgraded since. It was

<sup>&</sup>lt;sup>1</sup> The other four obligatory systems are for movable cultural heritage, which is kept in museums (IMUS), the archives (ARHIS), libraries and the National Film Archive of Republic Serbia in Jugoslovenska Kinoteka (Правилник 2018:, Article 3).

developed in cooperation with the Institute for the Protection of Cultural Monuments of Serbia (who prepared the project tasks and goals) and Mega Computer Engineering of Belgrade (who designed the software).2 During the process of creation, conversations were conducted with other institutes for the protection of cultural monuments in Serbia, in an attempt to gather their previous experiences on similar tasks. The creation, development and maintenance of the IS NKD are all financed by the Ministry of culture (and information) of the Republic of Serbia (Лајбеншпергер 2018: 30). It is designated by the Ministry of Culture as the main information system used by institutes for the protection of immovable cultural heritage in Serbia (Rulebook on detailed conditions for the digitization of cultural heritage) (Правилник 2018, Article 3, paragraph 1, point 2). All institutes for the protection of cultural monuments from the territory of the Republic of Serbia participated in populating the IS NKD with data regarding immovable cultural assets.

A number of cultural and scientific institutions, faculties and enthusiasts have tried to create some kind of information system of immovable cultural properties in Serbia. However, some of the previously developed systems are not fully functional today. In some of them the data entry has not been completed, some systems do not exist anymore, or are only used internally by a single organisation (Ognjanović et al. 2019: 2-4, 8-9; Šegan-Radonjić and Tepavički-Ilić 2020: 208-218). Among them, probably the most important is the system called Cultural Monuments of Serbia (Serbian: Споменици културе у Србији). Detailed information about all the former systems does not exist. For some of them we only have information that the systems were prepared, but the results themselves cannot be seen. Often, we cannot be sure if they were really a system, or if they were closer to some form of database. As a result, any attempt to adequately represent all these previous efforts within this work would be unsuccessful. For the stated reasons, this paper aims to review the IS NKD, as a system that is currently successfully used in their work by institutions for the protection of cultural monuments in Serbia.

## WHAT IS THE IS NKD?

The IS NKD is a software for digitization, a web-based application that can only be accessed via the internet. It has two separate parts. One for the employees in the service for the protection of immovable cultural properties, and another for the public. The two separate parts are made for better protection of the stored information. The public part has less information, but includes all basic and necessary data for an elemental introduction to some cultural property. The public part of the IS NKD can be accessed via the following address: nasledje.gov.rs. An English version of the public part of the IS NKD is also available, but not all of the descriptions have been translated yet.

The basic idea for making the IS NKD web based and not a desktop application was the requirement for information about immovable cultural properties to be available to experts from institutes for the protection of cultural monuments in any location from where they can access the internet, and not only in their offices. This also allows information to be transferred quicker to other governmental institutions and to the owners and users of the cultural heritage.<sup>3</sup>

# WHAT DOES THE IS NKD INCLUDE?

Digitization of data in the IS NKD is carried out for documentation and information defined as obligatory according to *Law on Cultural Property* (Закон 1994: Article 79, paragraph 2, point 5),<sup>4</sup>

<sup>&</sup>lt;sup>2</sup> The first author of this paper is the main creator of IS NKD, while the second author has been working on it for a couple of years.

<sup>&</sup>lt;sup>3</sup> The process of creation of any publicly available database of archaeological sites is a very sensitive task. Namely, there can be many possible human threats to non-excavated, not well-known archaeological sites, or those in remote areas, especially by making data on their exact position available to everyone. However, these problems are not the consequence of the availability of the information in the database itself. This paper's description of the IS NKD points to the great advantages that come from gathering so much information on the sites in one place, and notes the attempts by its creators to ensure its secure use. However, the further discussion on these topics is not the aim of this paper.

<sup>&</sup>lt;sup>4</sup> The development of the IS NKD started while the article 79 from the Law on Cultural Property was in force, and continued on the basis of the article 74 from the Law on Cultural Heritage.

Law on Cultural Heritage (Закон 2021: Article 74, paragraph 1, points 15 and 16) and Rules on the Data that are entered into the register, method of keeping the register and central register of immovable cultural property and on documents related to such cultural property (Правилник 1995). Besides the aforementioned, other documentation is also added.

According to the Law on Cultural Heritage (Закон 2021: Articles 15 to 19), there are five types of cultural property - monument of culture, archaeological site, significant site, spatial cultural-historical area, and cultural landscape. An archaeological site is defined as a part of the space on the surface of the soil and in the ground, in caves and under water, that contains the remains of individual buildings, complex building entities and other artefacts, constructions and their parts, burial units and necropolises, hoards, movable artefact, anthropological, paleontological and geological material, as well as the entire stratigraphic context in which they are found (Закон 2021: Article 18). Some archaeological localities are inscribed in the Central Register of immovable cultural properties as a monument of culture. That is usually the case for fortresses from the Middle Ages and modern periods (for example: Maglič medieval town, Zemun Fortress, or Niš Fortress). However, there are also a number of other archaeological localities inscribed as this type, such as several Roman tombs (for example: Late Roman tomb in Brestovik), or remains of churches (for example: Church of Mrnja, in Bačevica near Knić), etc. Besides that, archaeological remains can be incorporated into three other categories - significant site, spatial cultural-historical area, and cultural landscape. Among these three types, we may mention one more spatial cultural-historical area that is, in most of its characteristics, a fortress, but also has other values. It is the Petrovaradin Upper and Lower Fortress and its suburb. Many immovable cultural properties become archaeological localities when there is a need for archaeological research of them or their surroundings.

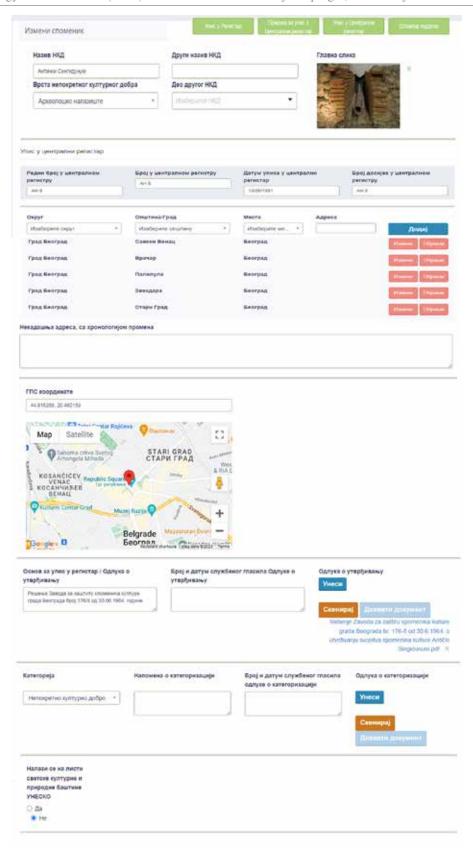
Currently (June 2023), 2,635 immovable cultural properties have been determined. Of that number, the Central Register and the IS NKD contain information on 196 archaeological sites and slightly more than 60 archaeological localities that are included in another type of immov-

able cultural heritage. It is difficult to determine exactly how many archaeological sites are part of the areas that are protected due to other values, but it is certainly a large percentage of the total number of those areas.

The information on archaeological sites held in the IS NKD is the same as the information for the other four types of immovable cultural heritage. Besides the name of property, and its type, there are these main pieces of information: its location (region, municipality/city, place (town or village), street, street number and GPS coordinates), name of the institutes that have jurisdiction for the protection, number and date of entry in the register, number and date of the entry in Central Register, Decision on the recognition of the immovable cultural property, number and date of the Official Gazette of the Decision of the recognition, category,<sup>5</sup> number and date of the Official Gazette of the Decision of the categorisation, numbers of cadastral parcels of immovable cultural property and its protected zone, measures related to guarding, maintaining and use of cultural property and its protected zone and a short description of the immovable cultural property. Also, the following scanned documents are included: Decision on the recognition of the immovable cultural property, Official Gazette of the Decision of the categorisation, copy of the cadastral plan, excerpt from the land register, public announcement of the intention to protect the object or site, Act that a note in the land register was made, photo documentation (general appearance and appearance of characteristic details) and technical documentation (situation, the basis of the object, cross sections of the object and appearance of characteristic details). There are some other files that offer more information about certain properties and their conservation and protection (Figure 1).

Besides the aforementioned, other information is also included. Such as: date or period of origin, proposal for the recognition, reports on the condition of the object or site, measures of technical protection, information about the UNESCO World Heritage List (if cultural property is on it), information about nature protection (if cultural

<sup>&</sup>lt;sup>5</sup> Which can be: Immovable Cultural Property, Immovable Cultural Property of Great Importance or Immovable Cultural Property of Exceptional Importance.



**Figure 1.** Appearance of part of the page of one immovable cultural property in the IS NKD (the page was accessed by the author of the paper, as the authorised person) (accessed on November 27<sup>th</sup> 2023).

property is part of it), literature, multimedia, additional descriptions, other photo and technical documentation, etc. There is also a special section just for documentation from archaeological excavations. However, it is not intended only for archaeological sites. As there are archaeological locations in other types of immovable cultural properties, and each immovable cultural property can become a site where archaeological research can be carried out, or archaeological remains can be found, this section exists in every immovable cultural property in the IS NKD. It is predicted that this documentation is inserted by archaeological campaigns. Information in text form that is included in this section includes: name of the institution that is the job holder; name of the field conductor; year of excavation; number of the Decision of the competent authority that issues the excavation permit; and the source of finance. The predicted scanned documents are: excavation report; field excavation diary; levels measurement register; photo diary and photo sheets; inventory of finds; special finds; drawings, plans, situations; documentation of conservation of finds; and a file for other documentation (anything that is not covered within the previously mentioned fields).

The part for the public contains: name of cultural property; its location [municipality/city, place, street and street number, and a map with the location marked]; name of institute that has territorial jurisdiction for the protection; name of institute that has jurisdiction for issuing technical protection measures; number and date of entry in the register; number and date of the entry in Central Register; Decision on the recognition of the immovable cultural property, number and date of the Official Gazette of the Decision of the recognition; PDF of Decision on the recognition of the immovable cultural property; category; number and date of the Official Gazette of the Decision of the categorisation; PDF of Decision of the categorisation; information about the UNESCO World Heritage List; description of cultural property; literature; and multimedia and photo documentation (Figure 2).

Part of the data in the IS NKD is entered in text fields, and part is uploaded as scanned documentation that was created on paper or documentation that has already been created in digital form, so it only requires transfer to the system.

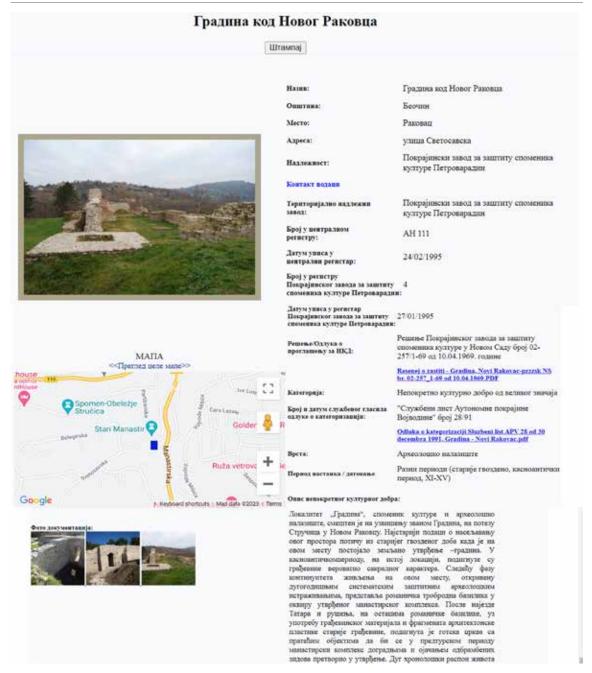
Scanned documentation is created and stored in PDF format. Documentation that has previously been created digitally is in the format in which it was created or transferred to PDF, JPG or some other format specified by the *Guidelines for digitization of cultural heritage of the Republic of Serbia* (Смернице 2017, part 6.1), depending on the need and case

On the first page of the IS NKD is a map of Serbia with the locations of immovable cultural properties (Figure 3). For all five types of immovable cultural property there are different labels (rectangle - archaeological site; rhombus - monument of culture; triangle - significant site; circle - spatial cultural-historical area and hexagon - cultural landscape). The category of immovable cultural property is marked with three different colours (red - immovable cultural property of exceptional importance; blue immovable cultural property of great importance; yellow - immovable cultural property). Clicking on one of the labels, visitors can obtain information about the name of the object/landscape, along with its type and category. From that information they can proceed to additional information about that cultural property. Also, they may use other tools that are available on Google maps, such as directions or street view. A detailed search is available for the desired object or locality in the IS NKD. They can be searched for based on one or more terms, or just on a part of a term. Searches can be conducted by the name of immovable cultural property, as well as by location, type, category, territorial jurisdiction, etc. (Figure 4).

Part of the IS NKD for Property under Preliminary Protection has also been developed. However, the input of data has not started yet, since the initial emphasis has been on compiling data for immovable cultural properties. It is expected that the upload of data into these parts of the IS NKD will start soon. Among the Property under Preliminary Protection are many archaeological localities (Закон 2021: Articles 29-35).

#### IMPORTANCE OF IS NKD

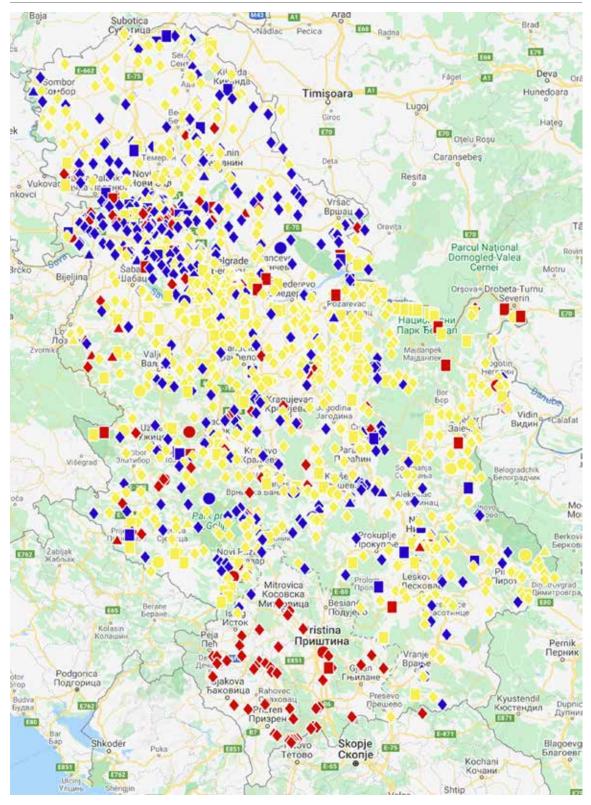
The IS NKD is an important tool for the work of the service for the protection of immovable cultural properties. Through it, one can access all the important information that exists about a



**Figure 2.** Appearance of the public part of the IS NKD, https://nasledje.gov.rs/index.cfm/spomenici/pregled\_spomenika?spomenik id=44077 (accessed on November 27<sup>th</sup> 2023).

cultural property. Given that archaeological localities are also an important part of cultural heritage, everyone interested, not only employees of the protection service or scholars, but also the general public, can access basic information about the protection of an area as a cultural property. Additionally, more information can be found. In this way, the job of employees in the protection service and scientific workers has become easier. Also,

the popularisation of archaeological heritage has been broadened to a wider circle of citizens. For the visitors, obtaining information about the location of the sites can be of special importance, so that they can inform themselves better on particular sites before and during their trip, also gaining knowledge on sites that are not well known to the public, not adequately accessible, or not visible (underground), all of which will result in a better



**Figure 3.** Map of Serbia indicating locations of immovable cultural property, https://nasledje.gov.rs/index.cfm/index/index/ index (accessed on November 27th 2023).

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**Figure 4.** Appearance of the detailed search facility of the IS NKD in English, https://nasledje.gov.rs/index.cfm/spomenici/pretraga\_spomenika\_new (accessed on November 27<sup>th</sup> 2023).

understanding of the historical development of the area they visit.

Part of the data from the IS NKD was incorporated into the Cultural Heritage Browser (Serbian: Agregator kulturnog nasleđa) (Агрегатор), a unified portal for the cultural heritage of the Republic of Serbia (Правилник 2018, Articles 2 and 12; Šegan-Radonjić and Тераvički-Ilić 2020: 218). In addition, part of the data is included in the National Spatial Data Infrastructure GeoSrbija (ГеоСрбија). In this way, scholars, experts, and people interested in archaeology can see more information related to a variety of localities.

#### CONCLUSION

Designated as one of the five basic information systems for the digitization of the cultural heritage of the Republic of Serbia, the Information system of Immovable Cultural Property successfully fulfils its task. It stores data and documentation on the immovable cultural heritage of Serbia, including archaeological sites and localities. The visibility of cultural heritage is provided to experts, as well as to the public through free access to part of the data that exists within it.

Further development of the IS NKD is ahead of us. It should be expanded with fields for new types of documentation, and new software solutions will be sought to facilitate additional work with documentation. The IS NKD was formed based on the legislation of the Republic of Ser-

bia. That legislation defines the documentation that is created and preserved about every cultural property. Also, the system for the protection of immovable heritage in Serbia is different from other countries in the region, and in the rest of the world (only the Republic of Srpska [as an entity of Bosnia and Hercegovina] still has a system like Serbia). Therefore, it is not easy, nor in most cases possible, to use ready-made solutions that exist in the world. The comparison of the IS NKD with different information systems from around the world, and their eventual harmonisation, would also entail researching the differences in the legislation of the countries in which they are applied. This could represent a long-term task, which would not necessarily result in favourable outcomes. All of this speaks to the complexity of such a system and the need to involve experts from various fields in the work on its future improvement and development.

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## REZIME

INFORMACIONI SISTEM
NEPOKRETNIH KULTURNIH
DOBARA KAO JEDAN
OD INSTRUMENATA ZA
PREZENTACIJU ARHEOLOŠKOG
NASLEĐA SRBIJE

KLJUČNE REČI: NEPOKRETNO KULTURNO DOBRO, ARHEOLOŠKO NALAZIŠTE, DIGITALIZACIJA, INFORMACIONI SISTEM NEPOKRETNIH KULTURNIH DOBARA

Informacioni sistem nepokretnih kulturnih dobara (IS NKD) je jedan od pet osnovnih informacionih sistema za digitalizaciju kulturnog nasleđa Republike Srbije. U okviru njega se čuvaju podaci o zaštićenom nepokretnom kulturnom nasleđu Republike Srbije (nepokretnim kulturnim dobrima). Sastoji se od dva dela. Prvi je namenjen stručnjacima u oblasti zaštite nepokretnih kulturnih dobara i sadrži veći broj podataka. Drugi je namenjen javnosti i sadrži neophodne osnovne podatke, uključujući i mapu sa lokacijama nepokretnih kulturnih dobara. U IS NKD se nalaze podaci o pravnoj zaštiti nasleđa, druga obavezna dokumentacija koja po zakonodavstvu mora da postoji uz svaki zaštićeni lokalitet ili objekat, kao i prateća dokumentacija koja govori o istorijatu, vrednostima, svojstvima, stanju, obavljenim konzervatorsko-restauratorskim i drugim radovima na njima, itd. Jedna od vrsti nepokretnih kulturnih dobara su arheološka nalazišta, a arheološki lokaliteti mogu biti i jedno od preostale četiri vrste nepokretnih kulturnih dobara, ili njihov deo. U okviru IS NKD postoji i posebna celina predviđena za unos podataka o obavljenim arheološkim istraživanja na predmetnom lokalitetu ili objektu. Podaci koji se unose su tekstualni, skenirani (najčešće u PDF formatu, a zatim u JPG i drugim formatima), ili oni koji su nastali u digitalnoj formi. Prezentovanje postojećih informacija o arheološkom nasleđu Republike Srbije nije namenjeno samo stručnjacima iz službe zaštite kulturnog nasleđa, već je jedan od ciljeva IS NKD da nasleđe približi i učini dostupnim i široj javnosti.

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