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THE MONUMENTS AND SITES OF TOPLICA DISTRICT OF SERBIA IN DIGITAL CATALOGUE OF CULTURAL MONUMENTS

Abstract. Guided by the wish to briefly, clearly and completely introduce to the world the history, archaeology, art, tradition and the natural beauty of the Monuments and Sites of the Toplica District of Serbia, that great writers such as Evliya Çelebi and Felix Kanitz have described in their works, we, as a part of the multidisciplinary research team, have digitized them in the Catalogue of Cultural Monuments. In this paper we are presenting the obtained results, as well as the problems that were encountered in this process. Since there is no national strategy and standards dedicated to the issue of the digital preservation of cultural heritage, we have given the proposal for the process of digitization of any Monuments and Sites, in order to preserve and store the existing data, as well as leave the possibility for their future updates. We will also try to answer at the questions which, at first glance, might seem trivial: is there a need for digital preservation of Monuments and Sites, who do we preserve them for, who are the "stakeholders" of digitization, etc? Comparing to the national and world contributions in this field, our approach proved to be functional, efficient and significant.

Keywords: Digitization of Monuments and Sites, Digitization and Personalization, Digitization and Global ethics

Specification

Digitization of stationary cultural properties is a relatively new field of research and due to its dynamic development, it isn't, as of yet, generally defined. Since in its early stages it was determined and conditioned as a technical field, it was generally observed first and foremost as a tool or means of converting the analogue forms into digital ones. However, it has, in the meantime, outgrown the purely technical problems of conversion and now, roughly speaking, it represents a synergy and a cross between various theoretical and practical knowledge. For example, it includes knowledge and disciplines that had previously been developing independently, such as librarianship, archiving, museum science and informational sciences, and is also enriched by philosophical, social, cultural, political, management and economical aspects [1]. In analyzing the digitization of stationary cultural properties, it should be kept in mind that its domains are currently more experimentally established than theoretically explained.

The theoreticians of the digitization of cultural properties mostly point out the "preservation, protection, promotion and usage of digitized materials in a digital world" as its essence [2]. If digitization is observed as a method of protection and preservation, a question of purpose of such a method can be posed. The famous Stonehenge complex which is located in Wiltshire County in England and estimated by the archaeologists to be about 3800 years old has been added to the list of World Heritage Sites in 1986. This estimation, as well as the fact that storing the data onto modern media cannot last longer than about a hundred years (the exact expiry date for certain media has not been determined yet) lead to the impression that the centuries-long complex of standing stone will outlive any of its conversions into bytes. Thus, in order to justify the process of digitization, its

theoreticians point to the destructive forces of nature and men and the disappearance of cultural properties in real world, so the virtual surroundings come as a handy alternative, a step towards securing immortality, an Erichfrommian finger pointed at the Moon.

A digital document represents a new paradigm because the barriers existing in the real world (for example, in the form of a printed book and a monastery complex) disappear in the digital one. Each piece of data is represented and stored as a line of bytes that do not have either color, weight or size, but can be corrected, added to, combined… all for the purpose of saying something more. In that light, the "digital surrogates" are often better (more purposeful, available, and linguistically and meaningfully more processed) than the originals. Digitization of cultural properties therefore strives towards a holistic approach while questioning some traditional concepts and principles on, for example, authenticity, preservation and conservation.

The process

The process of digital preservation and presentation of stationary cultural properties presents a long-term activity based on knowledge and skills of multiple scientific and technical disciplines and, according to the theoretician recommendations, includes the following steps: 1) strategic planning, 2) development and implementation, 3) monitoring, 4) sustainability and 5) presentation; and the following questions: what is the digitization's leading idea, what are its main and specific goals, how to realize them and how to evaluate them? Thus, it is supposed to answer the current needs of society and therefore considers primarily: its target audience; its importance for stake holders; its long-term significance; intellectual property; preservation problems and technical possibilities.

When answering the question of who is, the digitization of cultural heritage actually meant for then?, the Irish professor Mícheál Mac an Airchinnigh, instead of giving priority to humanity in general, gives it to the common man and his philosophy, using the term "practical philosophy" [3]. He deems that digitization enables one man to face the philosophy of another in such a way that said philosophy is not forced upon him but rather, everything is a matter of personal choice, which eventually contributes to the awakening of his humanistic awareness. This, in part, correlates with the observation of Mr. Nicholas Negroponte, an ideologist of digital existence, that post-information age recognizes the audience of one and that everything is highly personalized [4]. In accordance with that, in answering the question of who, then, are the stakeholders of the digitization process, it is correct to say that that would be the state and its institutions through national and international projects as well as tourism economy, but also that it can be any ordinary man who has the needed technology and knowledge at his disposal.

Digitization carries within itself a potential for democracy, and since there are no uniform national strategies, standards or sanctions, taking part in it is free. It is true that among the states and the intellectual elite there is an initiative to limit the influence of ordinary people by invoking various copyrights, under the excuse of their possible abuse – one of the examples of that was the recent voting to pass the American SOPA (Stop Online Piracy Act) law that has been judged by the public as censorship of free thinking and spreading of knowledge [5]. Thus, individual thinkers suggest an alternative solution in place of rigid laws, such as, for example, the law on protection of intellectual property: the development of the so-called global ethics in digitization. During the nineties of the previous century German theologist Hans Küng introduced the term "global ethics", pertaining to certain norms of conduct of everyone who is a part of the global community. Though the academic circles have formally accepted this idea, the effort to reach a consensus between the nations appeared utopist. Two Chinese theoreticians, Zonghao Bao and Kun Xiang, claim that such an ideal is achievable in a digital surrounding. Digital space is open and infinite, and it offers a possibility of universal and equal communication in real time between different sciences, technologies and cultures, which should be based on the following principles: honesty, tolerance,

respect, justice and safety [6]. Apparently, both the Chinese philosophers and professor Mac an Airchinnigh see digitization as non-violent means of developing human consciousness about, for example, the importance of cultural heritage in general, as well as means of development of international communication and cooperation. In digital environment, it is possible to achieve legally determined roles of cultural and scientific institutions which, most of the time, are not practically implemented: creative commons, open access and support of exchange of knowledge and skills. Thus far every effort regarding the development of humanity's awareness was short-lived, and only time will tell if digitization might have more success in that.

Nicholas Negroponte leans towards the opinion that the digitization is one of the few processes in which it is detrimental to insist on fixed rules and "despotic" standards [4]. Being dependent on the fast development of technology, whose path is difficult to predict, digitization is an elastic and essentially changeable process. It assumes the awareness of the fact that it has to keep changing and improving itself. It can be assumed that that, too, is one of the reasons why there are generally no unique national and international strategies or standards on digitization of cultural heritage, so the actual process differs from country to country, from organization to organization. True, it is often the case that smaller stakeholders connect with one another and cooperate with larger (mostly international) platforms, not only for the sake of material help but also in order to acquire their strategies, that is to say "knowledge essential for successful realization of digitization" [7]. Thus, for example, cultural and scientific institutions in Serbia make connections with European platforms such as EUROPEANA, DARIAH or ICOMOS which appear as instructors for digitization as well as aggregators and providers of all digital documents. There is also a national platform of NCD (National Center for Digitization), founded in 2002, which includes several reputable local institutions from the fields of culture and science, and by recommending its standards, this platform attempts to act independently. The very tendency to pose rules and regulations of digitization of cultural heritage goes to show that digitization has long stepped out of the role of a simple "tool", and is becoming a phenomenon in its own right.

French professor Bertrand Lavedrine noticed at some point that digitization of cultural properties as a financially demanding process would be among the first to come to question during the economic crises [8]. His pessimistic predictions came true for Greece which, due to its ongoing economic crises had to revoke its participation in international digitization programs (for example in project EMBARK). And truly, the process of digital preservation of stationary cultural properties is a relatively expensive endeavor. It implies education and maintenance of a multidisciplinary team composed mainly of experts in informational sciences, engineering, telecommunications and humanistic and fundamental sciences, as well as providing access to the cultural properties while respecting the concept of global ethics and copyrights. Having the appropriate technology and software at its disposal as well as providing resources for local and public presentations is also a requirement. It is exactly due to the demanding nature of the process that the selectors and stakeholders are usually state institutions, and perhaps some organizations with national and international funding, rather than individual persons. Thus, we have yet to wait for digitization of cultural properties which will be immune to „the decision makers' level, ways of financing, bureaucracy in the administrative and legal segments, territorial, ethnical or any other division." [2].

Short history of development

The term "digitization" first appeared on the territory of Serbia and the former Yugoslav countries during the sixties, mostly in the works and publications of technical sciences and disciplines. The first projects dedicated to digitization of cultural properties appeared during the nineties. The free online encyclopedia, *Wikipedia*, for example, mentions project Rastko, started in 1997 as a "non-profitable and independent cultural project" as the first project of digitization of Serbian culture [9]. The historian Slobodan Mandić, however, testifies that the first project of

digitization of cultural heritage under the name "Pandora" started back in 1995 as a result of inter-institutional cooperation of the university of Architecture and Mathematical Institute SANU [10]. It should be noted, however, that in those early stages we cannot yet speak of systematical digitization of cultural and scientific materials. An important step in that direction was made in 2002 with the forming of the National Center for Digitization which, as an unofficial national platform for digitization of cultural and scientific heritage, encompassed multiple public institutions. The Center started international cooperation, proposed the first standards and took part in multiple digitization projects financed by the institutions themselves as well as by the state. The result of its work and the state support served as stimulation to the cultural, educational and scientific institutions to form their own digital libraries and collections. Today, digitization of cultural heritage is defined as one of the priorities of the national Ministry of Culture.

Digitization of stationary public properties in Serbia is developing as a part of the process of digitization of cultural heritage as a whole, though it is somewhat sidelined by the digitization of the non-stationary cultural properties. Aiming to briefly, clearly and completely introduce the general public to the history, archaeology, art, tradition and natural monuments of Serbia, a group of enthusiasts gathered around the Republic Institute for the Preservation of Cultural Heritage, Archaeological and Mathematical institutes SANU, started the initiative at the beginning of the 21st century to have Serbia's monuments and localities digitized. The initiative was faced with difficulties from the start as there were no official national strategies or standards regarding the question of digitization of stationary cultural properties, so the foreign initiatives' standard recommendations were used on the one hand and on the other, the process relied on previous knowledge, experience and even "artistic freedom". This last bit is inevitable, since the existing standards recommendations mostly pertain to non-stationary cultural properties, which can serve as sound bases but, due to the specificity of the themes that are being processed, some deviations, adjustments and additions cannot be avoided. The initiative also faced difficulties with the lack of good network and very modest inter-institutional cooperation. The result of that is today reflected in the variety and inconsistency of the existent digital catalogues that present digitized material. The undertakings regarding systematic digitization of the monuments heritage of Serbia that should be mentioned are: the Republic Institute for the Preservation of Cultural Heritage's project of creating a base of stationary cultural properties (http://www.heritage-db.org/cir/pretraga); the Institute for Preservation of Cultural Monuments of Belgrade's Base of stationary cultural properties on the territory of Belgrade (http://beogradskonasledje.rs/aktuelnosti/katalog-nepokretnih-kulturnih-dobara); the Digital catalogue of cultural monuments which was started by the initiative of the National Centre for Digitization (http://spomenicikulture.mi.sanu.ac.rs/); the archaeological project Viminacijum (http://www.viminacium.org.rs/Architecture/index.html?language=srpski).

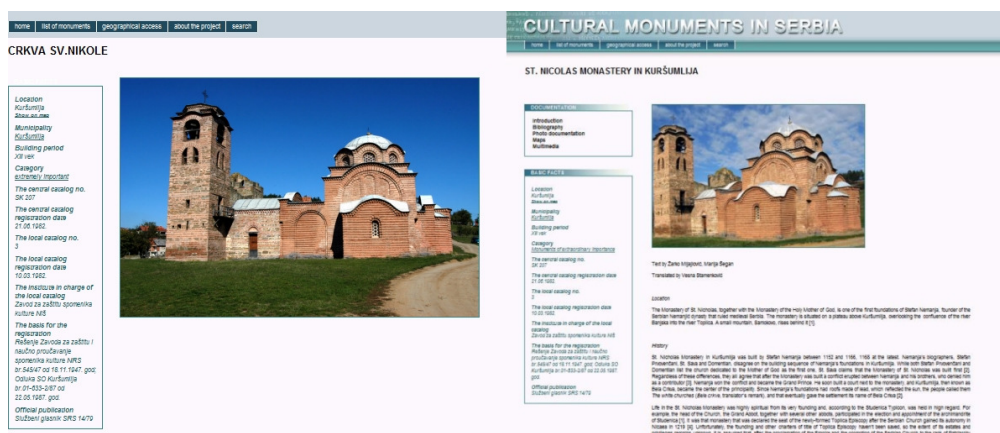**The Digital Catalogue of Cultural Monuments and Toplica project**

In February 2011, a multidisciplinary team of researchers was formed with the task of realizing the project of digital preservation and presentation of the cultural heritage of the Toplica region within the Digital catalogue of cultural monuments. The presentation represents an effort to make a part of the cultural heritage previously unavailable in digital format available to public, and for the time being it contains the descriptions of seven cultural properties in both Serbian and English language, appropriate digital documents (maps, plans, and photographs) as well as documentation with remarks. The presentation is largely based on the material (digital photographs and GPS data) gathered in the field during the previous decade.

The seven cultural monuments of the Toplica region, classified by most experts as cultural monuments of high and exceptional importance, are:

1.The Monastery of St. George in Ajdanovac, the only preserved medieval monastic church in the Toplica region;

2. The Monastery of St. Nicholas in Kuršumlija, one of the first foundations of Stefan Nemanja, founder of the Serbian Nemanjić dynasty, which ruled medieval Serbia;

3. The Monastery of the Holy Mother of God in Kuršumlija, also one of the first foundations of Stefan Nemanja;

4. The Monastery of St. Procopius in Prokuplje, one of the oldest Serbian Orthodox churches;

5. The Latin Church Complex in Prokuplje, which includes three buildings: an antique temple, an early Christian basilica and a medieval church, so called Jug-Bogdan's or Latin Church;

6. The Log Church of St. Tsar Lazar in Prolom, according to legend built by Serbian nobleman Lazar Hrebeljanović, and

7. The Monastery of St. Menas in Štava, the only church in the area of Kuršumlija where frescoes are almost completely preserved.

There is an extensive body of papers about these monuments, and some of them have already been described in a Digital catalogue of cultural monuments. Now, however, they have been approached in a slightly different manner in accordance with the contemporary trends. The best way to demonstrate this is to compare the old and the new description in the Catalogue. The old description contains only a processed photograph of the monastery on the front page, a modest text taken from another publication, sometimes an English translation of the text, and no documentation. On the other hand, the new description contains more processed photographs, an extensive text divided into sections, a professional English translation and the documentation with additional remarks (Picture 01).


Picture 01: The old and the new description of the St. Nicolas Monastery in Kuršumlija
in the Digital catalogue of cultural monuments

Primary sources, relevant scientific literature and up until now unpublished results obtained during the research expeditions in 2008 and 2009 under the supervision of Mathematical Institute of the Serbian Academy of the Sciences and Arts were used in describing the monuments. The descriptions themselves are not strictly scientific, but rather scientifically-based popular texts. Regarding that, every description of monument was divided into six sections: topography, history, architecture, interior design, archeological finds and literature. This concept is quite different from the concepts one can see in other national digital catalogues.
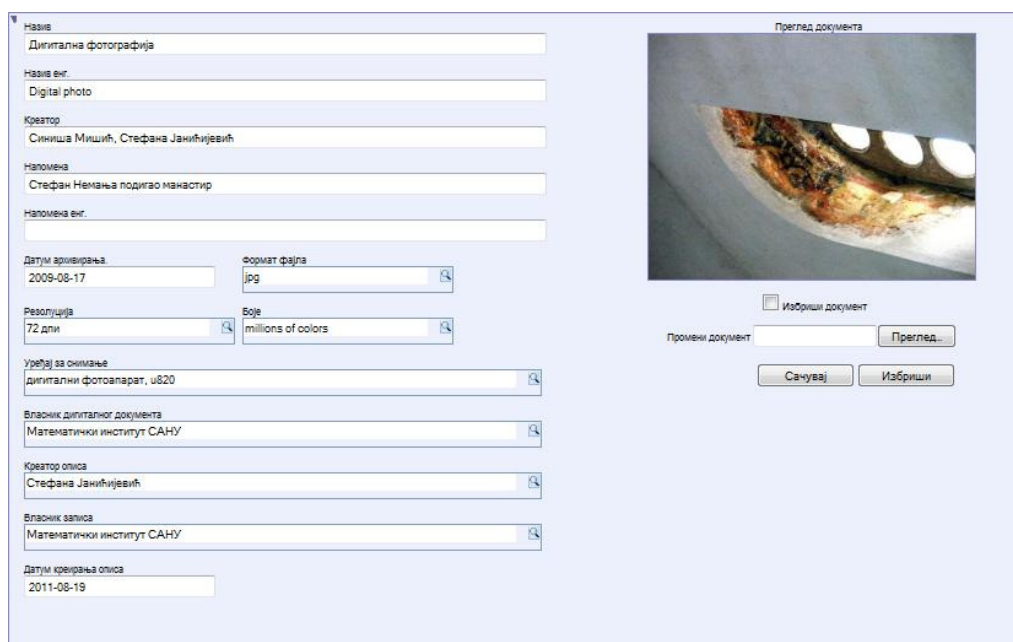
Cultural properties such as, for example, historical sources and artifacts are only partly self-explanatory. Digitized and digital cultural heritage thus must be accompanied by the appropriate metadata in order to be identified and then usable. Digital catalogue of cultural monuments is

organized so that, in addition to the home page (which contains the description and basic data of the monument), also contains the so-called supporting "documentation". This documentation is divided into five sections: introduction, bibliography, photo documentation, maps and multimedia, and each section into four categories: architecture, painting, movable cultural values and other. Each category can also contain one or more digital documents referring to the monument (Picture 02).
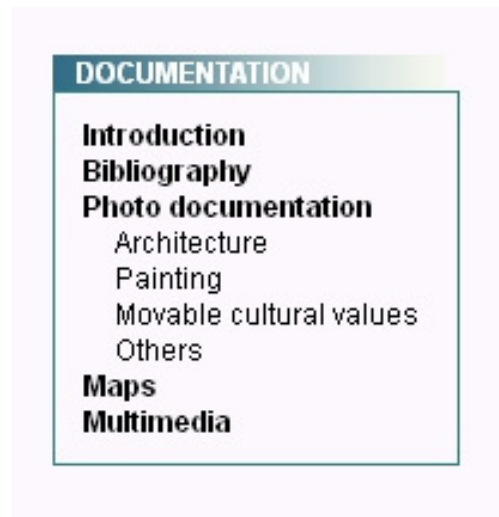
Picture 02: The supporting documentation to the description of the Monuments and Sites
in the Digital catalogue of cultural monuments

Unique process of data entry within these sections and categories didn't exist, and we had to consult relevant literature and instructions. For instance, for the classification of photo documentation within architecture categories we used the appropriate publication from architecture. Thus under the term spatial and basic structure we imported photos and appropriate metadata about altar apse, altar depot, narthex, turret, pirgue and porch. Unfortunately, some fields of metadata remained empty because scientific and research expeditions, by whom the data was obtained, failed to give adequate descriptions of photography contents (Picture 03).

Picture 03: The entry of metadata in the Digital catalogue
of cultural monuments

More than 400 digital photos were processed and stored in Digital catalogue. Technical editors worked on the Pentium IV computers, in the Photoshop CS3 software and main aim was to create the encyclopedic photos from the existing content. There were several phases of studying and creating the appropriate structure of the photos: 1) analysis of image characteristics, 2) color correction, 3) highlight composition and 4) digital restoration.

Conclusion

Our project is only a proposal for description of the monument and sites, a working draft, that still awaits for its approval. During our work we faced some problems, for example: in catalogue there is no automatic adjustment of photography dimensions, so it must be done manually; some metadata fields don't contain an entry in English (this is provisionally solved by importing the text in Serbian and in English in the same field: for example 19. Vek/19th century; Kraljevina Srbija/Kingdom of Serbia); etc. Currently, steps are being taken to update the Digital catalogue and remove this mistakes. Regardless of that, compared to the national contributions in this field, our approach proved to be functional and efficient.

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