

Safeguarding and Promotion of Fragile Archival Material from the Lazić Family Private Library¹

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ABSTRACT: This paper introduces possibilities of using new digital technologies in preservation and presentation of fragile archival material and other library material in the context of smart libraries and it presents a contribution to the draft proposal for standardization of digitization of such materials. Cutting-edge digital technologies and tools provide new possibilities for humanities researchers who can now conduct contemporary and transparent research of rare and fragile archival material. This paper will show that archival material, in the era of Industry 4.0 and the Internet of Things can be an extremely important part of the promotion of a culture in the context of smart libraries. However, the focus will be on standardization of digitization which is currently underway at the University Library.

KEYWORDS: smart libraries, new digital technologies, archival material, library material, digitization, standardization.

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1 Introduction

A smart library concept has been developing in the era of Industry 4.0 where the Internet of Things (IoT) has become all pervasive (Evans, 2011).

¹ The paper was written within the project entitled Safeguarding the fragile collection of the private archive of the Lazić family, coordinated by the University Library “Svetozar Marković” and funded by the British Library Endangered Archives Programme

The role of smart libraries in such a context is to become information hubs where new technology and accompanying concepts are introduced and experimented with. Nowadays, libraries are centers where new technologies are studied and research conducted. The aim of such undertakings is development of more productive, concise, comprehensive and easier research activities. Libraries guide us to the digital world. They are places where new technologies are implemented (Min, 2012; Younis, 2012). Libraries are considered potential business incubators as these technologies can be applied in business and public sector. They embrace new technologies and overcome digital exile. The main goal of the project Safeguarding the fragile collection of the private archive of the Lazić family is to digitize and thus preserve for posterity extremely valuable private collections owned by the non-governmental organization “Adligat” (the Lazić Library). The collection that will be digitized and presented to the public consists of several sub-collections: law books, war publications, periodicals, calendars and archival material. The material has an added historical value in the context of marking the First World War centenary. Moreover, the material is invaluable to the academic libraries as it includes unique and rare publications some of which cannot be found elsewhere in libraries. For the first time the public will be able to see “Pregled listova”, a confidential journal of the Serbian government in exile printed in Geneva, and an overview of news by the allies and enemies. The material is precious to various researchers from historians and sociologists, over anthropologists and philologists, to librarians and archivists. It is especially important to note that the whole project is a collaborative effort between an academic institution and non-governmental sector – the University Library “Svetozar Marković” and the non-governmental organization “Adligat”. This form of cooperation is valuable as a contemporary form of project activities which will be rounded off with the participation of the private sector. Having gone beyond its primary functions, the library meets the needs of other types of organizations and professions, which is – bearing in mind the inevitable multidisciplinary approach – generally important for the advancement of a society, smart cities concept and smart libraries as the main information hubs of the future knowledge society.

2 Initiatives of the University Library towards the smart libraries concept

Bearing in mind the importance of open access approach for attaining the knowledge society and fulfilling the role of academic libraries in knowl-

edge dissemination, this extremely important and fragile material will be presented via the cutting-edge device Magic Box which is suitable for interactive display of such delicate and vulnerable material. The material can be searched through on a transparent touch screen while the physical publication can be seen behind it. In addition to digitized publications, photo galleries, 3D models and films can be displayed in this device. This device provides a unique experience regarding the presentation of rare and fragile publications whose availability is usually restrained. The University Library “Svetozar Marković” is the first institution in the East Europe and the third library in the world to own this device which will become a pulsating window into the world of interests of various experts in humanities.



Figure 1. Magic Box

According to the grant agreement signed between the University Library “Svetozar Marković” and the British National Library, all digitized material will be available at the British Library website² and in the special digital repository of the University Library whose construction is underway. Following the project plan, master files will be stored in tiff format and on a cloud platform – Therefore, owned by the University Library. A digital repository with searchable content is under construction where the documents will be available without contrastive background and calibration cards. Software

² http://eap.bl.uk/database/overview_project.a4d?projID=EAP833;r=9741#project_outcome

docWorks, which is the main model of a programme for organizing contents in Magic Box, will be used for the preparation of the material.

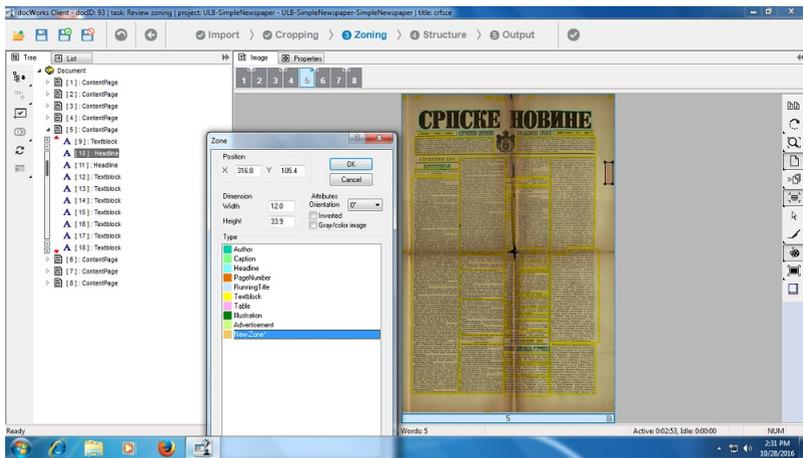


Figure 2. docWorks

Preparation of material in docWorks³ consists of the following steps:

1. cropping page surfaces of some digital objects;
2. zoning objects by segmenting pages into blocks and columns with surfaces defined for OCR (Optical Character Recognition) and determining their type as regards the function in the object: titles, text, author, pictures etc.;
3. arranging the structure of the object (bullet, chapter, article) by connecting titles and contingent text;
4. correcting text and metadata
5. creating ready objects in the form of METS/ALTO files suitable for display in Magic Box and the repository.

All aforementioned steps imply an automatic analysis and then manual correction.

³ <http://content-conversion.com/#docworks-2>

As PDF offers only limited search possibilities by keywords, the University Library has adopted METS/ALTO files. It should be pointed out that the University Library first obtained such files within the Europeana Newspapers project, and then it was the first library with the National Library of Serbia, to produce them without limit. The simplest definition of such files is that institutions can use them to adapt their digital objects so as to get searchable documents. This was also done with the digitized documents within the current project.

METS and ALTO standards were established for the easier description of digitization of printed material. The idea was to separate descriptive information from the content so that digital objects could be handled easily as when all the data are in one XML file (as is the case with TEI – Text Encoding Initiative format), the XML file is too large.

METS (Metadata Encoding and Transmission Standard) is an XML based open standard established by the Congress Library in Washington in 2001. It is used for permanent storing of files which describe digital objects, printed media (books, newspapers, journals), audio and video material etc. METS usually contains several types of metadata standards: descriptive, administrative, structural information, standards regarding physical and logical structure and links to other digital objects, pictures, audio-visual and textual files.

ALTO (Analyzed Layout and Text Object) is an XML based open standard also established by the Congress Library in Washington in 2001. It is used for digital description of the printed page layout so that the original page could be reconstructed. This file comprises content of an individual page of a digital document and can contain tags with more data about the very object. It describes styles, layout and the type of information blocks.

Digital objects structured in such a way will be much more operative and will provide a unique search – in the physical space when it comes to new technologies Magic Box and online when it comes to a specialized digital repository – with the results that will provide a detailed overview of collection contents to the user and fast and easy search by the keyword. In addition to the contents of the digitized object, ready metadata and expert literature accompanying the theme of the object will be provided for users. Thereby the book is not only digitized but also datafied. Books become data sets, i.e. text corpora, and words become data points. Hence, machines become readers.

3 The University Library contribution to the draft proposal of the digital repository of the Republic of Serbia

As the implementation of the project is still underway, project outcomes will be presented at the expert conference in which renowned experts in the field and potential partners from other fields will take part. Thereby wider public will be given an opportunity to participate actively in such activities. An added value of the project is the creation of a wider public discussion on the topic of smart libraries and digital citizenship. At the same time international projects are not only a means to increase funding of public cultural and scientific institutions, but to provide opportunities for professional development and advancement.

Up to now in Serbia digitization has been associated with scanning. Understandably, as a rule, international standards such as Technical Guidelines for Digitizing Cultural Heritage Materials⁴ or standards recommended by UNESCO⁵ are consulted when drafting general recommendations until a wholesome national standard is tailored. In coordination with the British Library, the University Library “Svetozar Markovic” has adopted new digitization concepts which contain new standards.

Several digital repositories have been established⁶ within the projects of digitization of literary material in Serbia, which proved Serbia’s readiness to take up a challenge set by an information technology revolution. Despite the fast development and success in the field, library staff who are skilled in the digitization of literary material have successfully responded to the pace set up by the most advanced centres in the field. The first drafts of standards, which should harmonize the quality of digital objects, have been sketched. Following successful digitization practice of literary material, the University Library strives to meet the digitization standards of the British Library, who is the world leader in the field.

⁴ http://www.digitizationguidelines.gov/guidelines/FADGI_Still_Image_Tech_Guidelines_2016.pdf (accessed 27 Oct 2016)

⁵ http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/mow/digitization_guidelines_for_web.pdf (accessed 27 Oct 2016)

⁶ These are some national digital repositories: Digital Repository of the National Library of Serbia (<http://www.digitalna.nb.rs/>) (<http://www.unilib.rs/istorijske-novine/pretraga>), Digital Library of Matica Srpska (<http://digital.bms.rs/ebiblioteka/>), Digital Repository of the Belgrade City Library (<http://dlibra.bgb.rs/dlibra>)

The purpose of the Endangered Archives Programme (EAP) is safeguarding material by providing appropriate storing conditions and by digitization, which assures long-term preservation and wider access to the digital objects (End, End). To meet the programme demands, it is extremely important to adapt digital copies to archival standards. Some standards, which the British Library sets to its partners, are already on the list of successfully applied digitization practices of Serbian institutions. However, there are standards that pose a challenge which improves digitization practices and motivates institutions which cultivate and promote cultural heritage in accordance with the latest concepts such as Industry 4.0 and smart libraries.

The recommendations for creating digital copies of physical objects refer to the resolution, minimum being 300dpi (dots per inch), or format tiff (Tagged Image File Format). In addition to these widely known and broadly applied standards, by meeting the demands of the Endangered Archives Programme, we were introduced with the new practices and standards which helped us improve our own digitization guidelines.

Above all, work on this project, as a contribution to the draft proposal of digitization standards for old and rare books at the University Library, has brought about two new dimensions: colour and length.

As a geographical map is closely determined by dimensions and colour, a scan or a photograph (a picture of a digitized object) is more precisely determined with a ruler and a color calibration card. Thereby every scan or every photograph provides more precise data about the genuine physical characteristics of an object, by giving unquestionable information about its precise dimensions and colors.

Different sources of light have different temperatures. Photographs which are taken under different conditions do not portray precise colours of an object. To avoid this we use White Balance, which is a source based correction. Colours corrected in such a way change balance between red, green and blue curves (RGB curves), but not their shape nor position. Therefore, what is changed in the photograph is the light not colour shades. Moreover, when photographs are taken with different devices we do not get identical colours. That is why colour management was developed to make such conversions more subtle and to improve the quality of the photograph.

One of the main colour management tools is a calibration card or a colour scheme. Adjusting colours on the photograph to portray genuine colours of an object is a challenge in digital and analogue photography. A Swedish company from Gothenburg QPCards AB developed a cost-effective and efficient

solution which is based on an open correction software and calibration cards which can be bought. There are several versions available.

QPcard is only one of the accepted models of calibration cards. These cards are industrially acquired, i.e. manufactured in factories, usually made of cardboard and cannot be printed through one's own efforts, especially if they should satisfy a particular standard. They usually contain a ruler and a color scheme.

Color correction in pictures with a QPcard is done by calibration software, QPcolorsoft 501, which can be downloaded from the manufacturer's website. This software and a QP card set up in the scanning surface create a reference profile. They should be set up indirectly to the camera sensor, neither at an angle nor in the shade during the scanning. As the white balance is fixed and a suitable colour profile with given parameters created, a reference correction profile is created and all other pictures taken with the QPcard can be calibrated.

Calibration consists of the following steps: the QPcard is selected, it is adjusted to the colours of the card so that every colour takes the right place in the pattern, then a specific colour profile and a reference calibration profile are created. When the profile is created all the pictures taken under the determined conditions and the same white balance can be corrected as a group.

If in addition to tiff, as a suitable format for pictures, 300dpi resolution, as the basic minimum resolution, sufficient and necessary for OCR, completely covered surface of the scanned object, from edge to edge, a colour scheme with a ruler was included. A digital object created in such a way would represent an almost ideal picture of the physical object.

Quality control and evaluation have to be carried out over the whole digitization process and the potential future standard. Within the current project, the University Library followed the EAP guidelines and took the following measures:

1. at the end of every workday it is necessary to carry out quality control of the scans;
2. scans are copied to the external hard drive and stored at separate locations (back up);
3. when the pictures are stored one needs to check if they are rotated properly so that the content can be read;
4. prior to permanent storing of the material MD5 checksum is applied to detect errors.

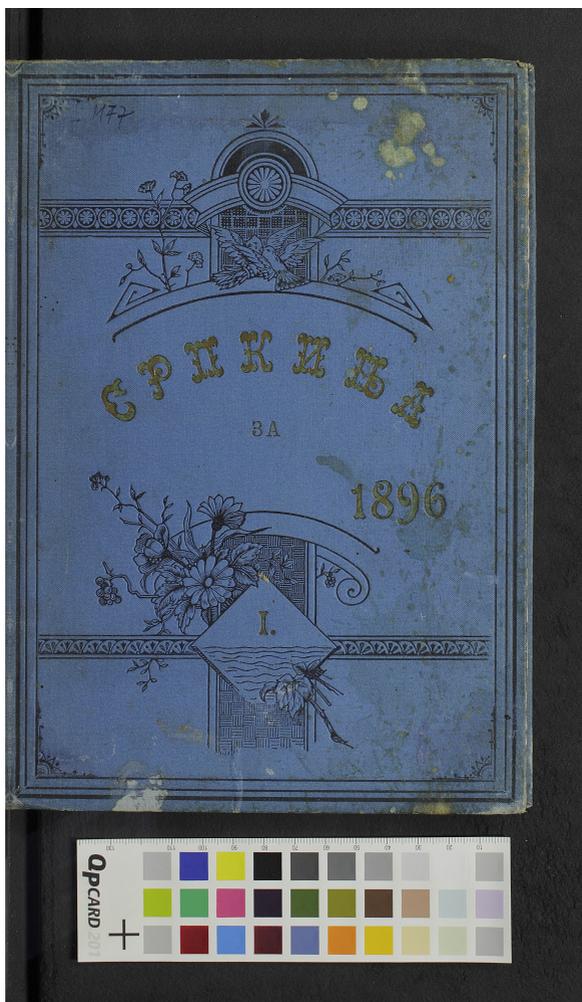


Figure 3. QPcard



Figure 4. An example of colour correction with QPcolorsoft 501

The MD5 checksum for a file is a 128-bit value, something like a fingerprint of the file. There is a very small possibility of getting two identical checksums of two different files. This feature can be useful both for comparing the files and their integrity control.⁷ To understand how this value works, one needs to imagine that there are two physically separated huge files for which it should be determined whether they are the same or different, but which cannot be joined or compared directly. With the MD5 checksum it is sufficient to calculate control sums for both files and then to compare them and determine whether the files are the same or different.

Application of best practice of world leaders in digitization can be a solid foundation for defining standards at the institution level but also the standards regarding digitization of literary material. Thereby, standardized scanning could serve as a basis for harmonizing quality of digitized material of different institutions. Harmonization of digital objects and institutional cooperation would unite somewhat dispersed energy of digitization centres in the country which would result in a unique and conjoint digital repository at the national level.

4 The Importance and Contents of the Digital Collection within the Endangered Archives project

There are several sub-collections in the collection of the Lazić Library which was digitized in the Endangered Archives project by the University Library. The digital collection, created in the project has 50,055 digitized pages.

4.1 Sub-collection “Law Books”

Law books, which have sparked great interest of the British Library award committee, can be divided into two groups: the ones published by Geca Kon and other law publications. Geca Kon was the most important Serbian and Yugoslav publisher at the beginning of the 20th century. Having glorified the victory of the Serbian army, he was imprisoned during the First World War. In the Second World War, being a Serbian Jew, he was held captive in the camp with his family where he died.

⁷ <http://www.fastsum.com/support/md5-checksum-utility-faq/md5-checksum.php>

At certain periods his publishing activity was on a much larger scale compared to all other publishers in Serbia altogether. Many of the most important titles of Serbian literature, history and law were published at the time thanks to this renowned man. However, considering his participation in the First World War against the German and his Jewish origin, his publications were massively destroyed in both world wars. For example, his books were publicly burnt during the Austro-Hungarian military occupation. In the Second World War the German used him as an example of anti-Jewish propaganda especially during 1941. The books from his bookstore were confiscated and transferred to Vienna. During the War his publishing company was taken over by a fascist publishing company "Jugoistok", which, when communists came to power, became "Prosveta", the most important state publishing company between 1950 and 1990. Also, after the liberation, Geca Kon's publications were considered unpopular as they were published by the "class enemy". That is why some of his publications are a rarity nowadays, especially some law books which have never been digitized and whose physical condition is poor. Considered expert literature, these publications were not printed in large circulation. Due to the fact that their topics describe pre-war capitalist legal regulation, they were massively destroyed and represent a rarity nowadays. This collection stands out as a number of books came from the personal libraries of people or institutions which were important for the Serbian state and law. Notes on books, stamps and Ex Libris, usually the only trace of their existence, are in themselves invaluable and quite rare. Here we list only some of them:

1. *Political and Legal Discussions*, 460 pages, by Slobodan Jovanović published in 1910. This is an extremely rare document as the author was the president of the Press Bureau in the Serbian government in exile during the First World War, the president of the Government in exile during the Second World War, the president of the Serbian Royal Academy, rector of the University of Belgrade, Public Law Professor at the Faculty of Law and its dean. As works of a member of old establishment, his literature was destroyed after the Second World War. Back at the time, anyone who was reported to have kept his works in their house would risk police interrogation. He was exculpated in 2007. This copy belongs to the legacy of professor Petar Bingulac (1897–1990) which is now owned by the Lazić family.
2. *Bill of Sale, lectures at the Faculty of Law*, 149 pages by Živojin M. Perić published in 1920. This is an extremely rare publication by the

most renowned Serbian lawyer between the two world wars. This copy of the book has a stamp of the Supreme Court Library.

3. *Original Slavic Law before the 10th century*, 130 pages by Dr Karlo Kadlec is an extremely rare study on law.

The total number of publications in this sub-collection is 132. None of them has ever been digitized so their digitization is justified and will be welcomed by scientific, expert and general audience. The second part of the sub-collection of law books consists of 29 rare law books which were not published by Geca Kon. Some of them are mentioned here:

1. “Amendments of the regulations on disabled veterans and other regulations on the disabled” 130 pages published in Belgrade in 1938. This is an extremely rare publication which is especially important for the retrospective overview of the position and treatment of a great number of war veterans.
2. “Law on the Ministry of Foreign Affairs and diplomatic and consular offices of the Kingdom of Yugoslavia abroad” 32 pages, published in Belgrade in 1929 by the State Printing House of the Kingdom of Yugoslavia. This is a very rare publication for the official use, which was used by all Serbian consular offices in Europe, where renowned Serbian writers such as Ivo Andrić, Miloš Crnjanski and Jovan Dučić worked. This copy belongs to the legacy of professor Petar Bingulac (1897–1990).
3. “Collection of laws of the new age, proclamation of His Royal Highness the King as of January 6 1929”, 67 pages, printed by Dr. Časlav M. Nikitović in 1929. This is one of the very rare publications as the laws in it remained in force even after the introduction of dictatorship. It belongs to the legacy of the judge Slobodan Ćirić.

4.2 Sub-collection “War Publications”

Serbian war publications (1914–1918) are very specific library and archival material considering the tragic events that happened to Serbian people at the time. After winning the battles at Cer and Kolubara, Serbia was attacked on three sides, so after the tough battles it was decided that the Serbian state, government, parliament, military and a large number of Serbian people should retreat to Greece. They retreated via Albanian mountains during winter, so there were less than 200 000 people who survived this tragic journey. Serbian state continued to exist in exile with its government

and the people, but without its territory, which is a specific case in history. One of the most important evidence of the continuity of the Serbian state is the war publishing activity. Therefore, all the publications printed in Corfu (where the seat of the Serbian government was), in Bizerte in Tunisia (where the great number of the wounded was) and in Thessaloniki, are treated as national heritage of great importance according to the Serbian law. This also applied to some of the rare publications of the Serbian emigration printed in Geneva, Nice, London and in the USA. The Lazić Library owns one of the most valuable collections of war publications, 156 of which are digitized within the Endangered Archives project. Some of them are:

1. “English-Serbian Dictionary” by Đorđe A. Petrović, 192 pages, published in Thessaloniki in 1918. This is an extremely rare publication used by the soldiers to communicate with the English medical staff.
2. “Law on the Amendments of the National Bank Law”, 5 pages, published in Corfu in 1916. This is an extremely rare publication as there isn’t a library in Serbia that possesses this document.
3. “Secret subversive organization, a report from the trial at the military court to the officers in Thessaloniki”, 638 pages, printed in Thessaloniki in 1918. This is an extremely rare publication as the same officers WHO HAD previously organized the overthrow and assassination of the royal family Obrenović in 1903 were charged for an attempt to kill Serbian crown prince. This is the most important legal process held during the war.
4. “Serbian school day in France 13/26 March 1915”, 242 pages, published in Niš in 1915. This is a very rare publication written during the retreat of the Serbian army. This publication is considered especially valuable and rare. The role of the publication was to show that Serbian army and people were supported by the Allies.

4.3 Sub-collection “Periodicals”

1. “Pregled listova” is an extremely rare publication which will be presented to the public for the first time. This is a confidential informative journal for the members of the Serbian government in exile, printed in Geneva in low circulation (most probably less than 50 copies, 3 are only known to exist today). It is interesting that the journal was printed on different types of paper, on a hectograph, depending on the war atmosphere. “Pregled listova” is actually an overview of war publications, the selection

of the most important texts of the allies and enemies with the aim to inform the Serbian government about the media picture of Serbia and current war activities. Marked “confidential”, it was available only to the highest state and war officials. The majority of copies were destroyed. If this periodical is digitized, that would be the first time that 4500 pages of this journal owned by the Lazić family became available to the general public.

2. “Misao” is an extremely rare Serbian war journal published in England. There were only four volumes, all owned by the Lazić family. They were edited by the then Serbian intellectuals in England. All four volumes are digitized.
3. “Krfske novine”, 500 pages. This is a very important publication as Serbian literary works were published in it, poetry in particular, later considered a classic and the most important work created during the war. The publication comes from the legacy of Stevan Bešević who was one of the editors.

4.4 Sub-collection “Calendars”

According to the British Library Award Committee this is a very valuable collection. Calendars were once favourite periodicals, published once a year, on a low quality paper, in a form of a book covering different popular science topics and entertainment, to be read throughout the whole year. In addition to low quality paper, the calendars were not preserved but thrown away at the end of the year which is why they are extremely rare nowadays. Digitization of some calendars from the 19th century is a real challenge considering the fragility of the paper. That is why the owners would not make them available in physical form to wider audience, not even under restricted conditions. This is the first time some of them will become available to the public.

1. “Vardar: a calendar for 1898”, 62 pages, printed by the bookstore Lj. Jokisimović in 1897. This is an extremely rare calendar which cannot be found at the National Library of Serbia.
2. “Orao: an illustrated calendar for 1889 which has 365 days”, 176 pages, printed in Novi Sad. This is a very rare publication as the texts of Serbian writers can be found there.
3. “Pastime calendar for 1855” by Svetozar Stojadinović published in Zemun, 67 pages, written before the reform of the Serbian alphabet in 1868.

It is extremely rare and it is considered national treasure according to the Serbian law.

4. “Srpkinja: an illustrated calendar for women from 1896”, 168 pages, printed in Kikinda. This is one of the rarest publications from this collection written exclusively for women.

Overall, there are 32 publications in this collection.

4.5 Sub-collection “Archival Material”

Archival material about the First World War includes several letters, notes, postcards and other documents such as an original war poster - a call for help to Serbia in 1916, a photograph of a soldier on the day of Bulgarian capitulation, several short letters, extremely rare war postcards-photographs of Serbian Refugee Theatre from Bizerte (Tunisia), etc. From the perspective of the First World War centenary this material is invaluable. There is an extremely valuable collection of letters and telegrams addressed to the family of Field Marshal Živojin Mišić (predominantly to his wife Lujza) sent on the occasion of his death in 1921. This sub-collection includes the speech held on Živojin Mišić’s funeral. The majority of these materials have never been published and the wider and scientific public is not familiar with their content. The total number of publications digitized within this collection is 105.

5 Conclusion

All things considered, it is clear that promotion and presentation of national heritage by using modern technologies and in the context of new concepts of smart libraries, the Internet of Things and Industry 4.0, cannot be carried out without a framework or standards at the national level. A contribution of the University Library to the draft proposal for standardization of digitization is only the first step towards reviving valuable archival and library material in Serbia. It emphasizes the importance of the heritage and being a part of an international project it presents the material comparatively and transparently in the framework of joint European heritage.

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