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Cartographic Collection of National Library of Serbia throughout History until the Digital Present

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Summary: This paper presents the Cartographic Collection of the National Library of Serbia (NLS) on the basis of a few aspects. It outlines a historical and chronological overview of the Cartographic Collection development after the Second World War. The principles and priorities of procurement applied for the restitution of the Collection which was completely destroyed during the bombing in 1941, have been illustrated in it. Cultural and historical examples of the most valuable and important copperplate atlases and maps that are part of the national fund are also presented in this paper.

Special attention is related to the part of the Collection available in digital form, and its accompanying metadata. Furthermore, new concept and plan for the future development of NLS Digital Cartographic Collection is presented, as well as the metadata describing the Collection and the subject material. This metadata is based on mapping of data encoded in COMARC B format (used in COBISS cataloging system) into NLS schema, specially developed for the purpose of cartographic material. The particularities of this schema are depicted in the paper, and we give a suggestion for utilisation of special fields from COMARC B format, that have not been traditionally used in the cataloging practice in Serbia. By applying this practice, we are certain that metadata of digitised cartographic material is adequately displayed and searchable, enabling the users to acquire full experience in an on-line environment.

Introduction

“One of the most significant cultural and education institutions, the National Library of Serbia (NLS), has inherited an one hundred eighty year old tradition of preserving national entity, cultural, scientific and ethnological uniqueness of our nation and represents our cultural heritage to domestic and foreign researchers.”

In NLS, apart from the general collections, containing usual printed and periodical production, special non-book materials are collected, preserved and given to use. Since 1947, when officially formed, Special Collections Department has collated and joined all this specific and diverse materials making special collections. One sort of such material is the Cartographic Collection.

This collection is exceptionally diverse and rich regarding content, purpose and dimension, as well as in the view of a different mode of production and appearance of cartographic publications. More than 40,000 map sheets of all kinds – from sections, thematic, topographic map of different scales, settlement plans, to navigation and astronomical charts and more than 1,200 titles of different types of atlases (general, historical, on different subjects etc.) are preserved in this collection.

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1 Vraneš, Putevi i raskršća Narodne biblioteke Srbije, 1.
The largest part of the Cartographic Collection relates to the publications presenting the area of south Slavic countries, South and southeast Europe and it testifies on cultural identity and historical continuity of these countries.

Cartographic collection perished during the First World War, but the most precious exhibits were burned during the bombing of National Library of Serbia in 1941. „Intentional, deliberate criminal actions of bombing the National library on 6th of April 1941 with the aim, unfortunately, to destroy all written monuments of Serbian people’s culture, i.e. the national memory, caused a devoted action consisting of gathering of printed words of the entire Serbian nation, not just of the cultural representatives.‖

Reconstruction of the fund, after such a loss, was a work of the highest priority. The main aim of this venture was to gather cartographic material which is the most important and the most valuable part of the Cartographic Collection and represents national fund referring to the territory of Serbia, regardless of the origin of the author, collector or country where published, as well as it relates to Serbian cartographers. The significant part of this important work has been completed until today. The reconstruction of the 19th century Serbian cartographic fund is entirely completed. The most valuable items both in cultural and material aspects were purchased, gifted or exchanged, but the largest part of the material comes through the legal deposit.

The complete Overview of Maps, Charts and Plans of Wien War Archive referring to Yugoslavia by Rudolf Smit, which became part of the Collection through a present is of the greatest importance for the reconstruction of the lost fund and gathering of Serbian cartographic history. The Catalogue of Cartographic Publications Referred to the Territory of Serbia and Kept with British National Library by Tihomir Djordjevic, whose legacy is kept in NLS, was also donated.

The most valuable items of Cartographic fund of Serbian National Library

Old and rare maps, atlases and manuscript maps have special historical, documentary and graphic value and cultural-historical significance. These cartographic publications faithfully reflect the period from which they originate, and testify about the manner of comprehension and perception of the world in that era. Old maps and atlases of NLS Cartographic Collection, originate from the 16th, 17th and 18th century and were crafted using techniques of copperplate and woodcuts, representing the works of the utmost artistic value. There are valuable items of every significant cartographic school and the most famous cartographers of Europe. Such material demands special attention and enjoins special protection and treatment in NLS.

The oldest map on which Serbia is shown is woodcut New Grichenlandt mit anstossenden Ländern from the year 1580 (Fig. 1).

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Another one of the oldest is the sheet with the title *Kriechisch Wyssenburg*, woodcut made by German cartographer Sebastian Münster, representing the view of Belgrade in the middle of XVI century (Fig. 2)
The map of Belgrade, made by military engineer Joan Baptista Gumpp *La Fortezza e la Città di Belgrado, assediata dal Serenissimo Massimiliano Emmanuelle... ed espugnata a di 6 di Settembre dell' anno 1688*, holds the eminent position. This is one of the most beautiful and most complete visual presentations of ancient appearance of the city and it belongs within the most famous and detailed topographic representations of the fortress, town and Belgrade surroundings. The map constitutes harmonious unity of south and north view of Belgrade, of appropriate symbolic pictures and maps combined with scenes of army motions, of refugees and drawings of significant buildings. The first Austrian occupation of Belgrade, after 167 years of constant Ottoman possession of Belgrade since the fall under Turkish government in 1521, has been presented on the map\(^3\) (Fig. 3).

\(^3\) Škalamera, Beograd 1688. na planu J. B. Gumpa, 1.
Amongst the recent maps in the Collection, special significance has *Special Map of Serbia* in scale 1: 75000 and 94 sheets, published in Belgrade in 1894. This map was based on the survey of the Kingdom of Serbia, executed by Serbian general-staff officers in the period from 1880 to 1892. The map consists of geometrical points defined with the method of graphic triangulation, starting from the points of the Russian trigonometry triangulation along the Serbian-Turkish border, Bessel’s ellipsoid, Cassini projection and the prime meridian. The *Special map of Serbia*, as the first special Serbian military map, printed in our country, signified the very entrance of Serbian cartography in European cartographic tracks. The map had also improved geographic knowledge of Serbia and had very significant role especially in the Balkan wars and the First World War (Fig. 4):
There is a large number of map sheets in the Cartographic Collection, published during the First World War. Those printed in Corfu and in Thessaloniki by the Aspiotis Brother Agency (see e.g. Fig. 5), crafted in cartographic workshop of high command topographic section in the period between 1916 and 1918 have special significance.
“In NLS Cartographic Collection the great epoch of atlases is represented by its most significant works, starting with exquisite craftsmanship of Dutch school through German interpretation to the works of French cartographers atlases of which beam with logical approach and larger purity.”\textsuperscript{4} Items by the most famous world cartographers and their schools are present in the Collection. Among the

\textsuperscript{4} Stefanović, Stari atlasi kartografske zbirke Narodne biblioteke Srbije, 67.
most significant items is the second edition of the atlas *Atlas Minor by Gerardus Mercator* from 1631 (Fig. 6).

Figure 6: *Atlas Minor by Gerardus Mercator* (1631) is part of the collection.

Another significant item in this group is the first Serbian atlas printed in Venice in 1804, work of Serbian literate Pavle Solaric *Пешнîй землеписникъ* (Fig. 7).
One more example in this category is the manuscript atlas *Festüngen Dalmatiens und Albens nebst vorliegenden Inseln, und Beschreibung*, of colonel and cartographer Maximilian *De Traux* from 1805. Old maps and atlases, besides geographic, also contain variety of other data about cultural and civilization accomplishments, political aspirations, beliefs and delusions, representing the image of historical and political movements of times from which they originate.

*Use and availability of Cartographic Collection*

Maps from Cartographic fund have great importance as a research source for historical geography, history of cartography, development of settlements and towns, traffic etc. They are used for the purpose of making programs and plans for special development, but also for publishing – monographs, studies, debates, reprints of old editions and a diffusion through electronic and printed media.

Thus, the Cartographic Collection offers a wide spectrum of possibilities to researchers from different areas, which implicates the extended need to make the large part of the Collection available in electronic form. Current expansion and continuous advancement of contemporary information and communication technologies support the capacity and potential of the Library in enabling the access to the funds through creating digital collections and tools for their efficient search and browsing.
“Digitalisation of material belonging to the special collections of National Library of Serbia is of the utmost importance for the institution, its users, and also for the protection and presentation of the cultural treasure which lays in its funds.”

Digital National Library of Serbia is currently available through the portal of the Mathematic institute of Serbian Academy of Sciences and Arts, and consists of twelve collections, including a digital cartographic collection. This collection consists of three subcollections: Atlases, Belgrade on old maps and Special Map of Serbia. The first unit – Atlases contains four digital copies of old original atlases printed abroad in the period between the 16th and 19th century. Belgrade on old maps contains seventeen digital copies of maps and plans on which Belgrade was presented in a different historical period from the 16th to 19th century. The third digital copy represents the complete Special Map of Serbia printed in Belgrade in 1894, in 94 sheets with topographic legend in scale 1:75000.

Apart from these, there is one more NLS digital cartographic collection online. This collection is available through the digital library Veliki rat (Great War), putting into availability the material from the period of First World War, held by NLS and other institutions. This digital library is formed due to NLS participation in the Europeana collections 1914-1918 project, aiming to digitise and represent the publications made during the First World War from the collections of nine national libraries around the Europe. The NLS Cartographic Collection in this digital library currently represents above-mentioned Map of Yugoslav Countries, published on Corfu during the First World War.

The plan for further development of the cartographic collections of National Library of Serbia

Although the existing digital collections contain some of the most valuable items of NLS Cartographic Collection, their extent is rather modest and insufficient to meet the needs of modern researcher wishing to get familiar with maps and atlases preserved in the library via the Internet. The most valuable items of the Collection are at the same time the oldest and the most damaged items, which need special protection from frequent moving from the vault, where located. This is just another fact emphasizing pressing necessity for digitalisation of the material.

Firstly, process of improvement of digital cartographic collections would consist of enlargement of existing collections.

Digital collection Atlases should be enriched with other items from the same period and organised by centuries in which they were created. Furthermore, the most valuable items of every leading cartographic school from the particular periods should be represented. Belgrade on the old maps should be extended to the first half of the XX century because a large number of user inquiries received for the plans formed in that period. The collection should be divided into two smaller: Belgrade fortress and Belgrade, and within these collections, organisation of subcollections should be according to the century of origin.

Secondly, digital cartographic collections could be improved by the creation of new subcollections. Special Map of Serbia should become a part of the new digital collection, called Serbia on the Old Maps. Apart from this collection within Serbian Towns and Districts two smaller collection should be

5 Aleksandrović, Digitalizacija građe posebnih fondova Narodne biblioteke Srbije, 107-120.
6 Available at http://serbia-forum.mi.sanu.ac.rs/Webbook.jsp
7 Available at http://www.velikirat.nb.rs
formed: Serbian Districts and Serbian Towns. Those collections could be again organised according to the period i.e. century of origin. According to the actual insight in necessities and demands of Cartographic fund users, it is necessary to form another collection called Military Maps which would include maps of war operations and also the maps created in the time of the war for the military purposes. These maps created for the military needs should be divided into smaller collections that would be named by the war, military operation, battle etc. to which they relate to.

The third step in improvement of digital cartographic collections is forming the tools that would enable searching and browsing of digital cartographic collections through several parameters. It is necessary to enable users to browse within every collection according to the century of origin of the certain cartographic publication, according to the language and the place of map creation.

Finally, during the creation of digital collections and features suporting their usage, necessities of users should always be considered. “Use, regarded as a criterion for evaluation, implicates manners and statistics of use, and users’ behavioural analysis: who, in which situations, what and why is using”. Given plan for the development of digital cartographic collections represents the synthesis of noticed necessities of the Cartographic Collection users, and the possible solutions for improvement of discovery of digitised material will be given in the following text.

**Metadata in the National Library of Serbia**

Metadata, or so called “data about data”, is used for assigning relevant information to digital objects, so they can be easily found in a digital library, repository or other surrounding, but also through Internet search engines. Matadata present the basis for providing the above mentioned features for users.

At the moment, the National Library of Serbia is in the process of making a new Web presentation for the Digital National Library of Serbia, and metadata are yet not complete and searchable. However, there is an initiative to make quality metadata for all of the digitised collections, Cartographic included. A team of librarians and catalogers are working on defining the metadata schema (working title NLS schema), that would encode all of the information about digitised objects considered to be of value for users’ search and display experience. The idea is to use the data from the catalogue records for the physical units, encoded in COMARC B format. COMARC B is a UNIMARC based schema, used in COBISS.SR union catalog system, utilised by more than 160 libraries in Serbia, but also in many other countries, especially in the Balkan area. Therefore, COMARC B is mapped to NLS schema, which should result in automatic conversion of particular records from the union catalogue.

NLS schema is developed to accommodate description of various types of material held by NLS. However, considering that in cataloging practice certain fields are used to encode different information, suitable to that particular type of material, sub-schemas are developed for each of this types, Cartographic included. Structurally NLS schema is set of fields holding wanted information about digitised object, currently presented as an application profile made of fields from Dublin Core.

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8 Stokić-Simončić G. and Ž. Vučković, Koliko koristimo digitalne bibliotekne, 114.
10 [http://www.cobiss.net/](http://www.cobiss.net/)
schema (to be precise Dublin Core Metadata Initiative Terms\textsuperscript{11}) and –TEI: Text Encoding Initiative\textsuperscript{12} fields. While working on this mappings, the NLS team had made notes regarding changes that could be implemented in the traditional cataloguing practice in Serbia, for the purpose of having good metadata through automatic conversion (i.e. language of the Parallel title (encoded by field 510 subfield z) and alternative/previous/contemporary name of the Place of publication, or all of the places of publication for periodicals (encoded by field 620 subfield d)). Furthermore, the \textit{NLS schema} provides space also for other information, that is not recorded by cataloguing, but considered as equally important in digital surrounding, such as Related item, Rights of usage etc, but also some administrative metadata.

\textit{Metadata for WWI Cartography Collection in NLS}

Such conversion of COMARC B format to simpler Dublin Core format can be seen on the example of the Cartography Collection available on-line through Veliki rat digital library. Except for the data taken from catalogue record, and accordingly mapped to appropriate fields of Dublin Core format, some extra information is added in metadata record, which is not traditionally used in cataloguing practice, but is considered as valuable in the Internet environment. For example, the field called \textit{Spatial Coverage} is usually mapped to the COMARC B field 607 used for Subject Added Entry - Geographic Name, having a particular string as a value (in this case Београд). However, instead of a string it was decided to use a permanent identifier or Uniform Resource Identifier (URI) for the geographical location of Belgrade\textsuperscript{13}, as the value of the \textit{Spatial Coverage} field in the metadata records. URIs used in this digital library are from one of the Internet geographical databases, called \textit{GeoNames}\textsuperscript{14}. If a user follows this URI link, he/she can get much more information about the respective geographic location, than the catalogue record provides in the first place (e.g. data on population, region, geographic coordinates, all of the name variants etc). Such practice is considered to be metadata enrichment, as this data is of outstanding significance for particular user groups, especially because library authority files for geo-locations do not exist in Serbia at the moment. Also, such practice is used for the normalisation of metadata in big repositories aggregating metadata from various sources and for the Linked Data applications.

Access to digitised material is usually available for users all around the World, but the metadata from the catalog record is usually available only in one language, which can be a limiting factor. Using URIs for the field’s value is considered to be one of the solutions for the language barrier problem in digital library systems. However, due to various limitations, the geographical name variations that are available through the \textit{GeoNames} data base could not be used for search in the Great War digital library. Still, as the interface is available in English language, which is considered to be lingua franca on the Internet, English translations for the most of the titles are provided (in the Alternative title field). Through this practice, English speaking users are allowed to search and retrieve maps using the place names in English language.

Furthermore, we wanted to give the user experience in search and browse on another level, by

\begin{itemize}
\item \textsuperscript{11} \url{http://dublincore.org/documents/dcmi-terms/}
\item \textsuperscript{12} \url{http://www.tei-c.org/index.xml}
\item \textsuperscript{13} \url{http://www.geonames.org/792680/belgrade.html}
\item \textsuperscript{14} \url{http://www.geonames.org/}
\end{itemize}
providing the Map view and access to all of the material available. This functionality will give a map display, showing the material according to its publication place or place of geographical subject heading. This feature is still under development. Technically, usage of geographical coordinates for places in the metadata records allows this feature. Not only will the users be allowed to browse the material through map display, but filtering will be available through the criteria of the year of the publication, type of material and language of the publication.

These are only some of the examples showing in which way libraries can enrich the metadata for their digitised material, and consequently use this as a basis for many services and functionalities. Such practice can allow for quality experience and better information to the users of digitised Cartographic collections.

References


