

Eva Novotná *

Database of digitized map collections of the Czech Republic

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Summary: A database of digitized map collections of the Czech Republic is open to all digitized map funds and it is used primarily by their administrators but also by researchers and scientists. It was launched in 2017 as one of the initiatives of an open platform for cartographic documents in the National Committee of UNESCO. It is operated and managed on the server of the Faculty of Science. It was updated and filled in through questionnaires in 2018 and 2019. It is continuously updated in the internal interface either directly by the curators of the collections or by Eva Novotna from the Map Collection of the Faculty of Science of Charles University. The fields with the information about the collections are filled in detail. They include physical and web addresses, information about collections, a brief description of physical and digital fund, specification of descriptive metadata and image files, of services and aggregation to higher units. The data update is carried out by authorized administrators or database administrators. Currently it contains information about 14 Czech and Moravian digitized map collections. The collection search is also possible on an underlying map. Available methodologies have been added to process and to make cartographic works available.

Introduction

Cartographic heritage is one of the most threatened and unheeded national document heritage. The first step to protect and preserve it is not only to describe it but also to make it available. Digitization of map collections is today inseparable part of memory institutions. It also allows specialists' feedback. What we lack, is a list of these institutions, quick access to the digitized collections; information about their content, accessibility, metadata and last but not least about the licences and price lists for the publication of the work. The database of digitized map collections of the Czech Republic tries to fill this gap.

Database

This database is open to all map funds and it serves primarily administrators but also researchers and scientists. It is useful in terms of structured contribution on its own digitized collection but also for searching and obtaining specific information. It was made available in 2017 as one of initiatives of open platform for cartographic documents at the UNESCO National Committee.¹ Based on long-term surveys of digital map collections (Novotná, 2016, 2017) a structure was created and successively also a web application, for the Database of the digitized map collections². E. Novotná submitted a proposal to create a database and she also introduced proposal on fields that would form its basis at one of the meetings of the UNESCO working cartographic group.

* PhDr. et Mgr., Map Collection and Geographical library, Faculty of Science of Charles University, Albertov 6, Prague 2, 128 43, Czechia [novotn48@natur.cuni.cz]

¹https://www.mzv.cz/jnp/en/foreign_relations/international_organisations/unesco_united_nations_educational_czech_commission_for_unesco/index.html

² <http://dms.euweb.cz/en/index.html>

Fields that most of the participants considered to be meaningful were selected after a stormy discussion. The author of the web presentation, which is operated on server of the Faculty of Science, is Miroslav Čábelka and his student Michal Jakl, both from the Department of Cartography of the Faculty of Science of Charles University.



Figure 1. Web interface of digitized map collections of the Czech Republic (Source: <http://dms.euweb.cz/>)

The database structure

The digital map collection consists of a web (server) and a database section. The web part is created in PHP language that allows adding and editing collections, user management and search in the database. Graphic design and layout of the web is created in HTML and CSS. View of a geographical location of a collection is created with JavaScript library Leaflet over the map background OpenStreetMap. The basis of the database part is a relation database MariaDB. The database consists of two tables. The first one is used for description of the map collections, the second one for registration of authorised users.

Update of data is done either by collections managers themselves, by authorized users or by database administrators. Last update of all collections took place in February this year on the basis of Eva Novotná's questionnaire survey. It was completed by pen and paper interviews.

Search for the collections is possible both in the basic search field as well as on the base map since the collections complete their physical location with coordinates. Search engine inspects the field name, address and contact of the map collection.



Figure 2. Search bar and basic search map (Source: <http://dms.euweb.cz/>)

Content

The database currently contains information about 18 Czech and Moravian digitized map collections. The information includes physical and web addresses, short description of physical and digital fund, and specification of descriptive metadata and image files, services and also aggregation into higher units. An English version, where a simple search map collection of the Czech Republic is possible, has been available since 2019.

The first part of detailed information about the collections consists of name, contact, quotations from important publications about the collections and other web links to important information about the collections. It is complemented by a national institution identifier according to archives, library, museum or another subject. A scientific field is also included based on the current division of scientific areas for assessment of science and research. Data on the processed physical fund and the estimate of the percent of the total quantity are also added. Libraries usually state data in registration units, archives in common metres.

The middle section deals with digitized fund of map collections. It informs about the total number of digitized (also unpublished) images. The numbers of files-objects for multi-part maps, map works or atlases are also given, if they can be found. Probably the most interesting is the number of on-line available images. Attention is also paid to metadata, used formats, methodologies and rules used for description.

Specification of image files informs whether the maps are made available with watermarks, if they download in tiles, in what resolution and, if relevant, in what programme. It is interesting that this data is sometimes difficult to determine as number of collections have acquired digital images by external scanning and makes them available also as external subject, therefore the administrators often do not know how the images reach the users.

Services

In addition to basic services related to making the collection available and the possibility of digitized images previews, the information about the possibility to use free data by downloading them is very important for the researches. Unfortunately, not many Czech collections offer this possibility, although many curators realize that this would facilitate the work at the subsequent administration proceeding related to licence agreement.

Some collections make available georeferenced maps, others allow on-line georeferencing for users.

All the collections offer a digitizing service on demand. Research library in Olomouc even makes facsimile of cartographic work on hand made paper on demand.

One of the most interesting and most used items is a way of providing licenced data. This means using a licence agreement or an application thanks to which the map collections provide their digital images for publication. Collections have different policy but mostly they distinguish if the digital images are used for study, scientific or commercial purposes. This then corresponds to the free licences or to prices for the use of the work that can be found in on-line price lists.

Aggregation into higher units

The user of the web can also learn where in union catalogues or databases can be data from the collection found. They are mostly national databases Register of Digitization, Staremapy.cz, Lesnickemapy.cz, Manuscriptorium, e-collections, Virtual map collection or international Oldmapsonline.org, EUROPEANA, Portafolium.eu. None of the Czech collection contributes into World Digital Library.

Methodologies

On-line methodologies have been added not only to cataloguing of cartographic collections but also to digitization and accessibility of old maps, atlases and globes.

Methodologies for the display of maps in 3D model. And last but not least there are also procedures for the georeferencing of old maps.

Conclusion

An information campaign is currently under way and a broader use by institutions GLAM, by professional and lay public, as well as their feedback are expected. The fundamental idea is to provide quick access to information on digitized map collections.

Currently they have different types of web pages and somewhere, at larger offices in particular, it is difficult to find relevant information in real time. The advantage of the database is its uniform structure and an offer of quick search as well as information comparison in a single access point. Probably the most important items are current URL addresses, contacts, information on services, licence agreements and price lists.

| The Map collection | URL |
|--|---|
| 1. Cartography of the Museum of National History in Olomouc | http://www.chartae-anti-quae.cz/cs/maps?name=&author=&pubyear_min=&pubyear_max=&scale_min=&scale_max=&owner=28&nad=any&type=any&page=5&search=search |
| 2. Central Archive of Surveying and Cadastre | https://archivnimapy.cuzk.cz/uazk/pohledy/archiv.html |
| 3. Collections of Maps and Atlases of the Library of the Benedictine Abbey in Rajhrad | http://www.chartae-anti-quae.cz/en/maps?name=&author=&pubyear_min=&pubyear_max=&scale_min=&scale_max=&owner=5&nad=any&type=any&page=0&search=search |
| 4. Collection of Maps and Plans of the National Archive | http://www.chartae-anti-quae.cz/en/maps?name=&author=&pubyear_min=&pubyear_max=&scale_min=&scale_max=&owner=9&nad=any&type=any&page=0&search=search |
| 5. Collection of Maps and Plans of the National Museum of Agriculture | http://www.starelesnimapy.cz/ |
| 6. Collection of Maps and Plans, State District Archives Most | http://www.chartae-anti-quae.cz/en/maps?name=&author=&pubyear_min=&pubyear_max=&scale_min=&scale_max=&owner=23&nad=any&type=any&page=0&search=search |
| 7. Digital Map Archive of the Czech Geological Survey | http://www.geology.cz/app/archiv/mproz.php?l=e |
| 8. Map Collection of the Department of Geography of Masaryk University | https://mapy.geogr.muni.cz/ |
| 9. Map Collection of the Faculty of Science of Charles University | http://www.mapovasbirka.cz/index_en.html |
| 10. Map Collection of the Moravian Land Archive | https://www.mza.cz/indikacniskici/?lang=en |
| 11. Map Collection of the National Library of the Czech Republic (Department of Manuscripts and Early Printed Books) | http://www.manuscriptorium.com/ |
| 12. Map Collection of the National Technical Museum | http://chartae-anti-quae.cz/en/maps?name=&author=&pubyear_min=&pubyear_max=&scale_min=&scale_max=&owner=11&nad=any&type=any&page=0&search=search |
| 13. Map Collection of the Research Library in Olomouc | http://kramerius.kr-olomoucky.cz/search/?language=en |
| 14. Map Collection of Strahov Library | http://chartae-anti-quae.cz/en/maps?name=&author=&pubyear_min=&pubyear_max=&scale_min=&scale_max=&owner=17&nad=any&type=any&page=0&search=search |
| 15. Maps in archive files of the State Regional Archive in Litoměřice | http://vademeccum.soalitomerice.cz/vademeccum/MenuBar.action |
| 16. Maps in archive files of the State Regional Archive in Zámorsk | http://www.chartae-anti-quae.cz/en/maps?name=&author=&pubyear_min=&pubyear_max=&scale_min=&scale_max=&owner=10&nad=any&type=any&page=0&search=search |
| 17. Moll's Map Collection, Moravian Land Library in Brno | https://mapy.mzk.cz/en/ |
| 18. State Regional Archive in Třebon | https://digi.ceskearchivy.cz/maps_and_technical_drawings |

Tab. no. 1 List of digitized map collections in the database (Source: <http://dms.euweb.cz/en/database.html>)

| | |
|--------------------------|---|
| Register of Digitization | http://registrdigitalizace.cz/rdcz/home |
| Staremapy.cz | https://staremapy.cz/ |
| Lesnickemapy.cz | http://www.starelesnimapy.cz/ |
| Manuscriptorium | http://www.manuscriptorium.com/ |
| e-collections | http://en.esbirky.cz/ |
| Virtual map collection | http://www.chartae-antiquae.cz/en |
| Oldmapsonline.org | https://www.oldmapsonline.org/ |
| EUROPEANA | https://www.europeana.eu/portal/ |
| Portafontium.eu | http://www.portafontium.eu/ |

Tab. No. 2 List of higher units (Source: author)

References

Novotná, E., 2017. Czech portals for visualisation of Cartographic culture heritage. In: *Proceedings 12th ICA Conference Digital Approaches to Cartographic Heritage*. Thessaloniki: Aristotle University of Thessaloniki, 196-203.

Novotná, E., Müllerová, M., Kašparová, P., Šonková, A., Haraštová, S. and Smejkalová, B., 2017. Online Availability of Selected Czech Digitized Map Collections in the Czech Republic. In: *KNIHOVNA: Knihovnická revue*. Prague: The National Library of the Czech Republic. In digital form, <http://knihovnarevue-en.nkp.cz/archives/2017-1/reviewed-articles/online-availability-of-selected-czech-digitized-map-collections-in-the-czech-republic>.

Novotná, E., 2016. Digitalizované české mapové sbírky. In: *Knihovny současnosti* 24: 94-118. In digital form: http://sdruk.mlp.cz/data/xinha/sdruk/2016/KKS/sbornik/Knihovny_soucasnosti_2016.pdf