

Development of Electronic Map Resource in Russian State Library

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Abstract. The paper deals with one of the ways to provide remote users access to the Russian State Library map collection. A new retrieval service for RSL cartographic materials is being developed. Digitizing of RSL map collection is being carried out in order to form a retrieval service database. The electronic map resource will provide a free access to full bibliographic descriptions, advanced search for maps and atlases and an opportunity to receive electronic copies of maps.

Keywords: Cartographic collection, Electronic catalogue, Search for maps

1. Availability of cartographic collections in Russia

Maps and atlases from library collections, also called archive maps (Beryant 2005), can provide basic information for different geographical, geological, historical researches and many others. Today, the world largest libraries tend to use the Internet to increase availability of their cartographic collections. The issue could be split into two aspects: availability of bibliographic information and availability of cartographical representations as such (Kildushevskaya & Zinchuk 2007).

The two biggest national libraries in Russia have large cartographic collections: Russian State Library in Moscow (RSL) and National Library of Russia in Saint Petersburg (NLR). Both of them have already begun to develop electronic map catalogues and electronic map libraries. Electronic map libraries development enables them to provide an access to cartographic representations.

In recent years, a number of cartographic web resources with electronic copies of old maps (e. g. www.retromap.ru, www.etomesto.ru, www.raremaps.ru and others) have appeared in Russia like in other countries. They offer viewing or downloading of electronic copies of printed

maps. Some of these resources also give users an opportunity to compare their content with modern maps and satellite images.

However there is still a number of unresolved issues pertaining to map collections availability.

First of all, the available electronic map catalogues provide a limited set of search functions and partially retain a structure and outdated rules of traditional card catalogues (for example, in map descriptions a lot of acronyms are still in use). Users of RSL and NRL map catalogues cannot limit their search by adding a scale or chronological filter. The catalogues do not provide an up-to-date search for cartographic documents.

In map catalogues of private Internet services, one can see a mismatch between the terminology and map describing principles, on one hand, and the basics of traditional cartography and map bibliography, on the other (Golysheva 2012).

2. Map Collection of Russian State Library

The cartographic collection of Russian State Library is one of the largest in the world. It contains about 250 thousand storage units including valuable, rare and manuscript maps and atlases. The items range in date from XVI century to the present. The collection holder in RSL is the department of cartographic publications.

In late 1990s, the electronic catalogue development was started in the Library, however the catalogue mainly reflects recent cartographic acquisitions. The major portion of maps and atlases issued both in the USSR and Russian Empire is still accessible only via the traditional card catalogue.

In recent years, RSL has carried out a systematic digitization of cartographic materials. Initially the process of electronic map database creation began with the work on the individual thematic projects such as joint Russia -USA Meeting at the Borders project (Kildushevskaya & Zinchuk 2007). In some cases digitization can be fulfilled during the process of material restoration.

Frequency of document use and its historical and cultural value are used as the criteria according to which the Library selects maps to be converted into an electronic form (Kildushevskaya & Zinchuk 2007).

As stated above, the existing RSL map catalogue cannot provide a full-function search for cartographic materials. Therefore, RSL started the development of a new electronic resource for searching cartographic items available in the library collection. Moreover the resource will serve as an

electronic map library i. e. will provide an access to electronic copies of cartographic publications.

3. Providing Web Access to RSL Cartographic Collection

The development of the electronic map resource has started with a thorough study of the best world online map catalogues, libraries and services such as:

- Copac Map Search (catalogues of over 70 major UK and Irish libraries, <http://copac.ac.uk/search/form/map>),
- Library of Congress Map Catalogue (<http://www.loc.gov/maps>),
- David Rumsey Historical Map Collection (www.davidrumsey.com),
- CartoMundi (<http://www.cartomundi.fr/site>),
- Old Maps Online (<http://www.oldmapsonline.org>)
- and others (Golyasheva 2012, Golyasheva 2013).

On the other hand, the experience in map bibliography description and card catalogues creation accumulated in Russia was also carefully studied so that the new service could satisfy the existing terminology of map description, bibliographic rules and traditions.

The main principles of the RSL retrieval service are as follows:

- the service shall be accessible for remote users via the Internet;
- every map (even being a part of an atlas or series) shall have a full description and a thumbnail image;
- atlases and series shall have their own descriptions (*generalized level*) with links to their content (maps from the atlas or series);
- additional maps which contain important information shall have a short description (*analytical level*);
- descriptions shall be interconnected via hyperlinks;
- a set of numerous characteristics shall be provided for searching by keywords, authors, edition data, scale, projection, etc.;
- users shall be able to filter the search results by using, for example, a chronological filter or filter by scale;

– the service shall provide an opportunity to search for cartographic materials by geographical location in a special window where an interactive base web map is displayed.

Figure 1 shows the service database structure. All the cartographic materials whether it is a map, an atlas, a series, a set of map or an additional map have individual bibliography descriptions. The descriptions are expanded in comparison with the standard ones that are now in use in RSL. A generalized description of an atlas (set of maps or series) shall have some hyperlinks to allow users going to descriptions of any map from its content. Using hyperlinks will also make it possible to search cartographic materials with the same characteristics (author, location, etc.)

Almost every atlas along with maps contains additional information: texts, graphics, diagrams, images, etc. Some maps also have additional information, such as appendices. All copies of such additional materials shall be available via hyperlinks (although additional materials shall not have individual descriptions).

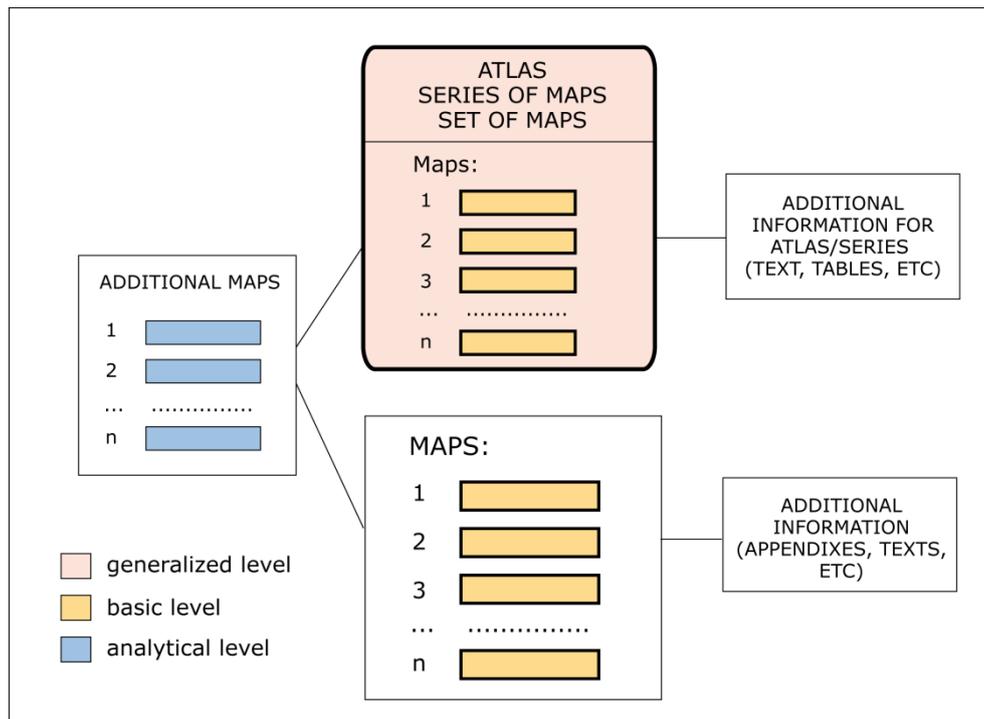


Figure 1. Different types of cartographic materials in the RSL web-service database

A set of retrieval functions was developed to provide a map search in a variety of ways.

Various uses of search fields will be possible, including:

- input of one or more values into the appropriate search field (keywords, title, author, place name, subject, year of publication, etc.)
- search by adding a year range or a scale range (by inputting an interval "from ... to ...");
- selection of one or more options from a drop-down list;
- search for cartographic materials by their geographical location in the window where an interactive web map is displayed.

Figure 2 shows an example of using an interactive web map as a base for searching cartographic materials in the collection of RSL. Below, the coverage of maps from the Atlas of the White Sea is demonstrated. By the hyperlinks (blue-colored text) users can pass on to full bibliographic descriptions of all the maps and also to a description of the atlas as a whole.

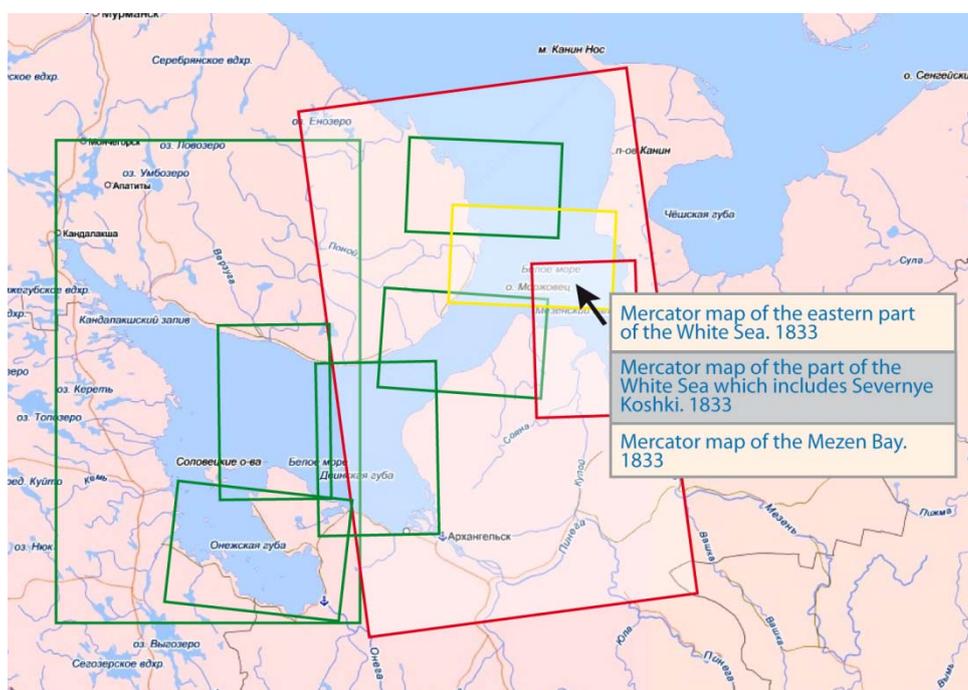


Figure 2. Location of the maps from the *Atlas of the White Sea* on a basic interactive map.

Maps from the RSL collection already available in electronic copies (made for exhibitions, conferences and individual projects) will form the electronic resource database.

Digitizing of the RSL map collection in order to further populate the database will start from the old Russian maps and atlases which are the most popular and demanded items.

In course of theoretical researches, a set of technical instructions was developed. A retrieval mechanism for cartographic materials is being created. The first version of the RSL electronic map resource is already working in test-and-debug mode.

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