

Reinventing Geological Maps: the Polish Geological Cartography Platform

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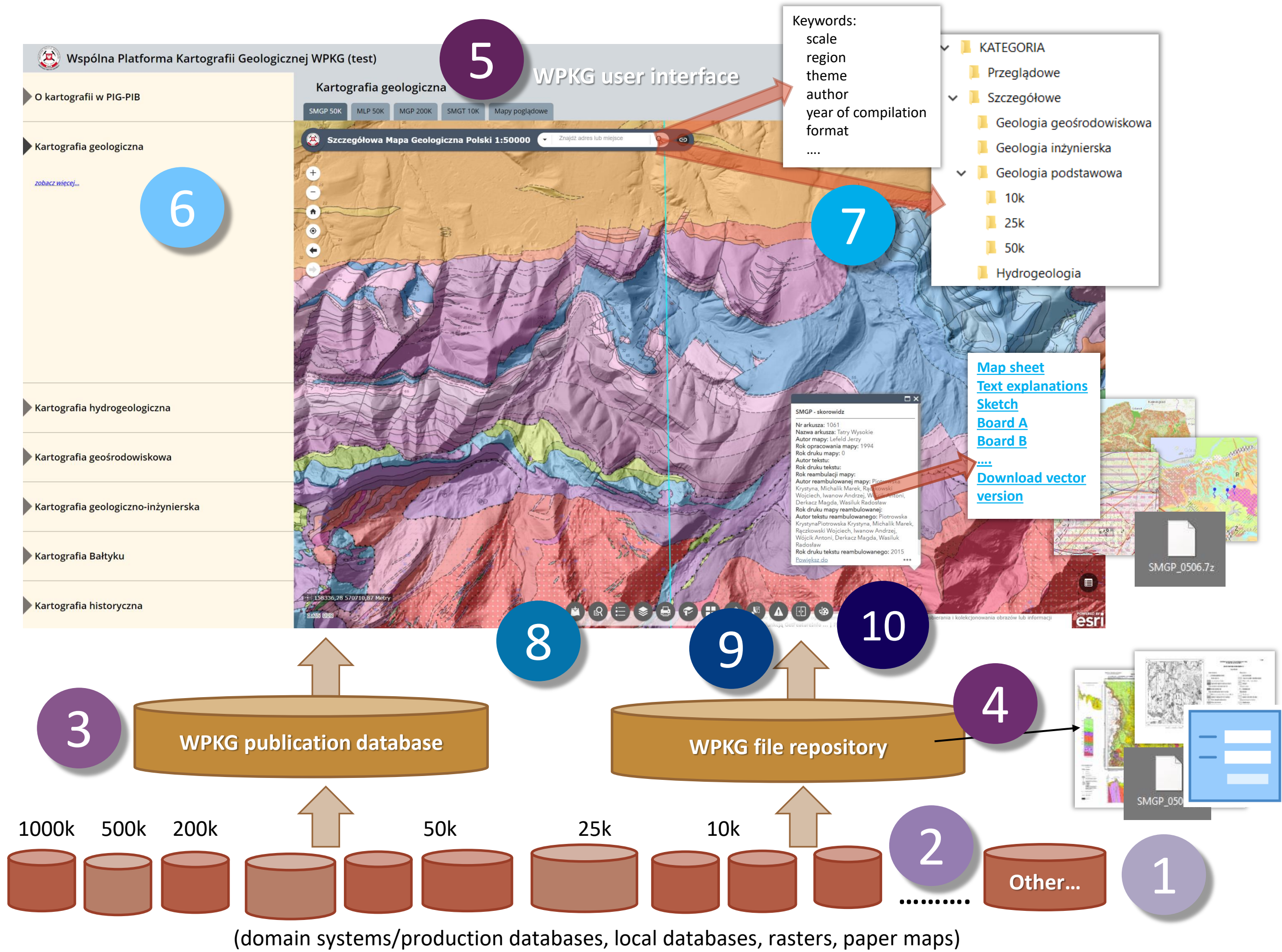
Polish Geological Institute – National Research Institute (PGI-NRI)

PGI-NRI has been the key provider of geological and hydrogeological maps in Poland for over a century, and has compiled hundreds of maps dedicated to a variety of domain specific issues. In the frame of the Polish Geological Cartography Platform (pol. Wspólna Platforma Kartografii Geologicznej - WPKG) these rich and valuable map collections are being digitized, systematized, gathered in one integrated data resource (file repository and spatial database), and made available through one central access point – web application based on the ArcGIS technology.



WPKG
WSPÓLNA PLATFORMA
KARTOGRAFII GEOLOGICZNEJ

www.pgi.gov.pl/wpkg



1 QUERY AND SYSTEMATICS

The aim of the query is preparation of an inventory of all known products of the Polish geological cartography. The query searches through production GIS databases, local vector data repositories, raster and paper maps along with cross-sections, sketches, text explanations etc. Besides compiling an inventory of the PGI-NRI cartographic products, the objective of the task is to develop their systematics and naming - logically consistent and technologically optimal.

2 DIGITALIZATION

Additional valuable maps (identified through the query of cartographic products) are being scanned and secured in the digital form. Some of them have not been known nor available to public ever before, therefore digitalization will lead to both increase of digital cartographic data resources as well as the increase of the number of online services. The application of the relevant quality standards will be ensured in order to support data integration.

3 INTEGRATED SPATIAL DATABASE

Vector data from the production databases of individual maps will be uploaded to the integration database (Oracle/ESRI SDE) and then replicated to the publication database (MS SQL/ESRI SDE) and made available through the web application as spatial data services. Specially designed tools for data synchronization will also enable integration with databases in different technologies (PostgreSQL/PostGIS) maintained for the purposes of INSPIRE and other international projects.

4 STRUCTURED FILE REPOSITORY

Repository will store file data such as: raster images of map sheets and cross-sections, text explanations as well as vector data packages and other attachments. Internal PGI's users will be able to download files directly from the repository whereas for public users data will be made available through web application as online (view and download) services. The structure of the repository will be based on the systematics developed in the query of cartographic products.

5 RESPONSIVE USER INTERFACE

The user interface of the web application will automatically adapt to the user's device, it will change its resolution, menus etc. to ensure full usability on both desktop computers and mobile devices. The functionality of the web application will be customized to meet the identified needs of various stakeholders.

6 THEMATIC TABS

The application will present cartographic products in various thematic tabs such as: basic geological cartography, hydrogeological cartography, environmental cartography, geological-engineering cartography, cartography of the Baltic Sea, historical cartography and more. Every tab will contain a set of predefined compositions for the basic thematic maps with the possibility to add any user-preferred data to each.

7 MULTIPLE SEARCH POSSIBILITIES

Each thematic tab will offer the ability to browse, view and download data from the spatial data geoportal (map viewer), as well as search for data by specific keywords or predefined categories without defining a spatial context. In addition to basic resource information such as scale, author, year compiled, etc., product/map owners will define other keywords to help optimize search mechanisms.

8 CITATION GENERATOR

A standard for citing PGI-NRI maps and cartographic products will be developed for the convenience of all who use PGI-NRI cartographic resources on the Internet. An appropriate description ("cite as") for each map/product will be ready for download in the web application, along with the map itself. The next step will be to ensure that resources/maps can be uniquely identified on the Web (implementation of appropriate data and/or metadata standards).

9 ADVANCED ANALYSIS TOOLS

A number of advanced functions and tools for data analysis will be available to all users directly from a web browser. In addition to simple options such as object identification, selection, attribute information, it is planned to provide such functionalities as: data crossing/collision, determining buffer around objects, generating statistics from area and point data, redirection from spatial data to attribute data stored in database tables, generating results in the form of charts, reports and maps, and more.

10 SAVE AND SHARE OPTIONS

Each user will be able to save their own compositions and "take with them" a unique link automatically generated by the application that will allow them to call up in the future exactly the map they have previously configured. The user will also have the ability to share their configured map or analysis results via the electronic medium of their choice.