Digitizing of old maps and on-line tools for using them

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Motivation

- Today's modern methods of digitization and on-line accessing of old maps allow much more than just making copies for viewing them.

- These modern methods allow to fully exploit the potential of old maps as cartographic works with all of their specific characteristics.

- This contribution will show good practice for digitization and on-line accessibility of old maps.
Good practice by digitizing of old maps and atlases
(requirements for proper digitization)

Maps and atlases – precise cartometric scanner (e.g. ScannTech 800i)

- format A0+,
- optical resolution 800 dpi,
- color depth 24-bit, ICC profile,
- maximal deviation in positioning 0.2 mm,
- maintaining cartographic map properties,
Accuracy Testing of Cartometric Scanners

- Testing by scanning of special template – rectangular grid of points with known real coordinates
- **Absolute Accuracy** - Differences between reproduction and original (Good accuracy is < 0.3 mm difference)
- **Relative Accuracy** - Differences between multiple reproductions of original (change of accuracy over time), detects sudden loss of accuracy (scanner defect)
Good practice for using of on-line available old maps

**MapComparer** - web application for comparing old maps, tools for measuring distances and areas, layering associated with opacity
Good practice for using of on-line available old maps

**MapComparer** - dividing the window into 2 or 4 sections, synchronization
Map symbols - web application for automated search of map symbols on maps III. Military Survey

Map symbols of 3rd. Military Survey

3rd Military Survey 1 : 75 000 are one of the most important and attractive mapsets covering the territory of the Czech Republic. The importance of these maps lies in their rich set of map symbols, detailed coverage of the Czech Republic (and Slovakia) and long period of use.

This application shows the positions of map symbols of 3rd Military Survey. These positions were found out by certified technology for map symbol detection on scanned images of maps from the collection of The Institute of History, Academy of Sciences of the Czech Republic. The maps were scanned with 400DPI resolution.

The image below shows the map layout of 3rd Military Survey, each sheet pointing to a detailed view showing the map symbol positions.
Good practice for using of on-line available old maps

Map symbols - web application for automated search of map symbols
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**Zoomify to WMS** - web application for Georeferencing of your own maps accessible in Zoomify
Good practice for using of on-line available old maps
display WMS or TMS in 3D view - web application for displaying of your own georeferenced old maps accessible in WMS or TMS on 3D terrain model
Good practice for using of on-line available old maps

Classification of digitised old maps - Practical example - Estimating the surface area of former lake Štíatarský in the first half of 19th century from II. Military Survey maps
Good practice for using of on-line available old maps

Classification of digitised old maps - Practical example - Lake Štíatarský, result of classification with training areas selection
Good practice for using of on-line available old maps

Classification of digitised old maps - Practical example - Lake Štítnarský, classification result displayed over contemporary map source

Conclusion

- User are no longer satisfied only by simple digitization and on-line publication of old maps for viewing them.

- Users demands more, some added value, that would simplify the use of digitized old maps and allow to gain more information than from classic use of paper maps.

- The future life of old maps is to shift their understanding from nice pictures (artifacts) to an online service available.
Thank you for your attention

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