

Lexical knowledge sources for cartography and GIS – development, current status and outlook

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Extended Abstract

The aim of scientific research is *to acquire new knowledge*. It should always be in touch with current knowledge and has no chance of success without an awareness and evaluation of the available knowledge. The same applies to the disciplines of cartography and geoinformatics. As in other sciences, current expert knowledge is documented and published in various forms: as individual articles (papers) about often narrowly defined subjects in periodicals, scientific publication series or other compilations, as independent monographs, systematically subdivided into textbooks for educational purposes and finally also in specialised encyclopaedias. These in turn are especially useful for cartography teachers and students as well as for laypeople who quickly need to look up technical terms.

In response to the publication of the “Encyclopaedia of Cartography and Geomatics” (*Lexikon der Kartographie und Geomatik*, 2001/2002), Stams compiled in 2003 a comprehensive “Review and Comparison” (*Rückblick und Vergleich*) of cartographic encyclopaedias. In the intervening 12 years, we have witnessed developments in lexical knowledge sources that far surpass those of the past century. *The transition to the digital world has been a gradual one*. The great universal encyclopaedias, which contain a selection of the main terms from subject areas that include cartography and GIS, have been no exception. For example, the Encyclopaedia Britannica, which was available on CD-ROM as early as 1994, transitioned to an online edition in 2008/09 and gradually opened the door for anyone to participate in composing keyword articles. In so doing, it hoped to adopt the approach first taken with the launch of WIKIPEDIA in 2001.

Steps in the development of lexical knowledge sources for cartography and GIS since 1990:

- Printed version (available to purchase)
- Printed version and eBook (available to purchase), pdf file (free)

- Offline versions: CD-ROM or DVD-ROM versions and USB stick (available to purchase)
- Online version, fee-based
- Online version, free
- Online version with possible user participation (desirable), free

It should be noted that not all cartographic encyclopaedias have taken the final step (online, free, participation possible) and are available as combination sales (primarily printed+online).

The actual revolution in specialised encyclopaedias for cartography and GIS began in 2001/02. Whilst the three large encyclopaedias of the late 20th century, including the Encyclopaedic Dictionary of the ICA Commission II, were still only published in print, the two-volume edition of the “Encyclopaedia of Cartography and Geomatics” was immediately followed by a CD-ROM edition with identical contents, and the “Encyclopaedia of Geoinformatics” (*Lexikon der Geoinformatik*, Bill and Zehner, ed., 2001) was available online shortly after its publication as a printed book (Geoinformatics Service of the University of Rostock). No new edition of either encyclopaedia has since been published, despite the fact that they have long been out of print. On the one hand, this would seem to indicate that a substantial part of the contents remains valid despite the lack of updating and on the other, that the transition to the digital world is finally complete.

The previously mentioned “*Encyclopaedia of Cartography and Geomatics*” (Bollmann and Koch, eds., 2001/02) provides a typical example of the gradual progression of lexical versions. After sales of the printed and CD-ROM version were suspended, a fee-based online version followed. For the past few years, the encyclopaedia has been available free of charge on the Internet. The publisher has no current plans to update or further develop the encyclopaedia, such as by adding dynamic cartographic illustrations, real 3D maps, etc. Thus the opportunity for development is unfortunately not being exploited. Among the (few) more recent global encyclopaedias, the “*Encyclopedia of GIS*” from US publisher Shekar and Xion has an entirely different style to that of the *Rostock Encyclopaedia of Geoinformatics*, even though both are available digitally as well as in print. Here, an international team of authors composed detailed essays on 41 problem areas and provided extensive literary references, giving the impression of an alphabetically structured manual. Similar characteristics can be found in Volume 6 of the compiled “*History of Cartography*” (“Cartography in the 20th Century”, Monmonier, ed., 2015),

published in 2015, currently unavailable online, but available to purchase as an eBook.

For both printed as well as online encyclopedias is to convey the scientific and conceptual structure of meaning. It goes without saying that as a *unified scientific concept* is applied. This should be based on the foundation of modern science. A largely uniform structure of the texts of keywords facilitates knowledge discovery from the lexicon. In clear and concise definitions to look for. The *knowledge* of encyclopedia should be *reliable, quotable and currently*, access to knowledge and its exploitation as quickly and uncomplicated. In addition, ways must be shown to the broadening and deepening of the limited lexicon knowledge.

In the end, the question remains: does the existence of the “*free encyclopaedia*” *WIKIPEDIA*, which has been collectively maintained by volunteer authors since 2001 and contains ever increasing numbers of keyword texts on cartography and GIS, make the maintenance, further development and new development of all types of independent specialised encyclopaedia redundant? Currently and in the near future *they are not yet obsolete!* The ideal version of an encyclopaedia for cartography and GI sciences should be dynamic, interactive and optimally adapted to users, thereby facilitating their work in conjunction with a modern editorial environment (content management system). Main contents should be still developed collaboratively by experts.

References

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