

## **A Toolkit for Optimizing Cartographic Production from a Global Database**

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### **Abstract**

Generating maps on demand from global datasets requires a chain of technically advanced processing tasks, regardless of whether the end product is needed in a planning department, placed on an organization's home page, or sold in a bookstore to a customer. Production can be facilitated by establishing an intelligently designed geoprocessing environment: the aim is to have a systematic, standardized work flow, consisting of effective methods and toolsets in all production phases from database organization all the way through product finishing.

On the example of the production of world atlases, this paper describes a geoprocessing toolkit that has been developed for effectively utilizing global databases at scales between ca. 1 : 500,000 and 1 : 4 Mill. This toolkit, in turn, is part of a production scheme based on work flow standards common to a wider range of products and, though being devised specifically for commercial map publishing, might serve as a repository of successfully tested methods with the capacity for streamlining the data handling infrastructure in an extended spectrum of mapping applications

At the outset, an outline of the overall production framework is given, indicating where tools provided by standard software packages reach their limits. The core part consists of a description of the production steps in which geoprocessing is applied, followed by a discussion of a representative selection of the tools in more detail. Emphasis is on explaining the functionality rather than on software architecture. The procedures encompass all major production activities, such as database and product editing, data verification, map preparation, product generation, and updating (i.e. synchronizing the activities taking place on the database and on the product sides), plus a set of general process handling functions. Throughout the system, the principle is that work performed during processing of a particular product may be, totally or partially, re-utilized for related products, thus keeping the amount of duplication of tasks to a minimum. In conclusion, a summary of the experiences in working with the system will be given, and some of the misconceptions in toolkit configuration will be pointed out.