



Swiss geological maps vectorisation process

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Today Swiss geoscientists have access to rasterized geological maps for their studies and analyses. Up to now, only few vector maps are available. Based on this report, creation of geological vector maps started within a joint venture project involving FOWG, IGAR and Canton Vaud. The method used for creating a geological vector map is based on CREALP's research on GIS. It involves the manual drawing of all geological lines in a single GIS layer. At each intersection a new line is started. Two attributes, used for polygon construction and line description, are assigned to every line. Once all the lines are drawn and rigorously checked, scripts are used to extract and build polygons automatically. They get their attributes from a superposed point layer containing lithological and tectonic descriptors. The main problem was to obtain a product of constant high quality. To allow a high accuracy drawing a reference scale was selected and maintained, then a checking process was set-up containing: control of the line snapping with a visual and a semi-automatic verification. Line attributions are visually controlled, then polygons are checked to ensure that all polygons were created and correctly attributed. As final control, the entire map is examined searching for inconsistencies and errors. About two weeks for a three people team are needed to achieve the vectorization of a standard size map of 200 square kilometers, implying drawing of lines, creation of polygons and complete verification. In addition to the vector data, created paper maps are as similar as possible to the original.