The automatic generalisation of building polygons: A case study based on the 1:50`000 Swiss National Map Series

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Abstract. Within cartographic circles automatic generalisation is one of today's „buzzwords" but yet remains one of the most difficult goals to achieve and is hence a subject of intense research activity.

For most National Mapping Agencies (NMA's) the need for automatic generalisation is of significant interest. With automatic generalisation NMA`s are able to not only improve and streamline their map production lines but also save important resources such as time and money. It is for these reasons that many NMAs are either in the process of, or have already introduced automatic generalisation.

The Federal Office of Topography swisstopo, the NMA of Switzerland, already uses automatic generalisation within its map production, is however constantly seeking new approaches and methods to further increase its efficiency. A special generalisation challenge found within this organisation is that of the individual house representation, a trait for which the Swiss national maps are famous for and which is followed with a typical Swiss precision up to a scale of 1:100'000.

This research, not only outlines the challenges faced but also supplies a possible working solution for the following use case.

The automatic generalisation of the individual polygon house features of the Swiss TLM (Topographic Landscape Model, scale 1:10'000) whilst retaining the individual representation for an end scale of 1:50'000 and this whilst maintaining the various settlement formations identified within Switzerland.

The final solution was subsequently submitted, in form of a questionnaire, to an expert panel consisting of individuals directly involved with the subject of generalisation and represented by three distinctly different users groups (cartographers, software specialists and higher education). The enclosed summary of the questionnaires results supply an interesting insight into the individual perception of generalisation and offer a vision into how this research might be continued.