**DETERMINATION OF ROAD PROFILE IN AN AREA**

**ABSTRACT**

A rocketing demand for cars and heavy duty freight vehicles as well as the related infrastructure and an increasing number of traffic accidents determine the need for road upgrading and necessitate the search for new solutions for the sake of improvement of the requirements pertaining to the design of longitudinal road profile. The immediate objective is to improve the traffic quality to make the roads safer and more comfortable to use. The needs of the society, convenience and comfort on roads, not to mention traffic and environmental safety, are the most significant for the road design and subsequent construction processes in the developed countries of Western Europe, the USA and Canada. These countries-specific road design rules focus on smooth, harmonious and comfortable design of any route and present the requirements on how to achieve the said smoothness and comfort. To the opinion of the authors of the present article, the Lithuanian and Belarus road design rules fail to include certain topical requirements to be posed for longitudinal road profile design in regard to road smoothness and traffic quality. The authors of the article tackle the problems associated with the longitudinal profile of the road in terms of the road smoothness, safety, convenience and comfort, viz., traffic quality on the roads of Lithuania and Belarus. As a result, some solutions of the road longitudinal profile design (i.e. the design line) are analyzed and proposed herein for potential improvement of traffic quality on the roads of the said countries.

**Keywords:** road design; road longitudinal profile; road smoothness; road harmoniou; road convenience and comfort; International Roughness Index (IRI).