

## ROAD SAFETY ON FOUR CONTINENTS

16<sup>th</sup> International Conference – Beijing, China, 2013

### **Traffic safety approaches in a new revision of the Portuguese road design guidelines**

António Lemonde de Macedo, João Lourenço Cardoso, Carlos Roque  
*Laboratório Nacional de Engenharia Civil (LNEC)*  
*Lisbon, Portugal*

#### **Abstract**

The Portuguese road design guidelines, issued by the national roads administration, have undergone periodical revisions, aiming at updating technical aspects of the geometric design of road elements and enlarging the field of their application, to various types of roads and intersections.

The National Laboratory for Civil Engineering (LNEC), through its Transportation Department, has provided scientific and technical advice to the road authorities at several stages of this process.

The expertise detained at LNEC in this area has been acquired along almost 40 years, through applied research, including the development of PhD thesis, and various specific traffic safety studies carried out for both public and private entities. Over the last two decades an important enlargement of this activity has been achieved through the participation in joint research projects at the European level. Particularly, as regards the explicit consideration of safety criteria and related methodologies into the design of road infrastructures, among those European projects the following have played an essential role: SAFESTAR (*Safety Standards for Road Design and Redesign*); RIPCORDER-ISEREST (*Road Infrastructure Safety Protection – Core Research and Development for Road Safety in Europe*) and RISMET (*Road Infrastructure Safety Management Evaluation Tools*).

At the present stage, a proposal made by LNEC, which has been taken into consideration by the competent authority as far as the regulation of the road infrastructure management in Portugal is concerned, points out to the need for a thorough reformulation of the whole set of documents currently being used as design guidelines, in order to introduce a greater integration among them, and technical advances based on scientific ground. The structure proposed within this new approach is centered in a so-called “base document”, which contains the main common concepts and indications to which the various guidelines for specific types of roads must comply with.

In this paper a presentation is made of the context under consideration and of the main characteristics proposed for the “base document” referred to above, as well as the rationale underlying the introduction of safety criteria into the definition of road geometric design parameters, including acceptable reference values. The approach which has been adopted, more closely related to the human component, is derived, for example, from the assessment of driving behavior characteristics, using the results of a large number of measurements in Portuguese and in other European road networks.