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## Issues concerning the road safety concept

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### Abstract

The paper focuses on issues regarding the adaptation of specific elements related to the concept of road traffic in Romania, to the existing European / world provisions. The authors took into account the specific aspects of the factors that define this concept, including traffic legislation, environment conditions, road infrastructure, characteristics of equipment specific to road traffic, and aspects of drivers' education. The authors also took into account the provisions concerning the adopted vision and sustainable road safety. Last but not least, in developing the concept of road traffic safety, the authors considered road traffic statistics from Romania for the period 2013-2015. The authors of the concept of security is the integration front, with the quality of the road in Romania, considering the intensity of traffic and the environmental pollution. The statistical data covering a period of 10 years, the period 2001-2011; fleet during this period registered significant growth in Romania, mainly in 2006-2008.

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### 1. Introduction

Traffic safety and organization is an embodiment of the state policy in the field of protecting human life and health, by preventing road traffic accidents and reducing their consequences.

Particular attention should be paid to road safety, an issue that is becoming more acute and that is increasing its social significance with the increase in road traffic.

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Increasing traffic safety on public roads is achieved by taking several concomitant measures. An important part of these measures is linked to the construction of vehicles, starting with the improvement of braking systems and ending with the endowment of cars and drivers with special devices.

Increasing road safety is also achieved by improving the methods of designing roads and by perfecting the execution technology of road construction works, in particular the methods of executing the road surface.

An important role is played by increasing the traffic discipline on public roads and by spreading the knowledge about traffic safety among drivers, among population and in schools.

Road traffic safety can be guaranteed only by the simultaneous fulfilment of the following conditions:

- a) strict compliance by drivers and pedestrians of traffic rules on the roads;
- b) good technical condition of vehicles;
- c) by allowing unhindered movement of vehicles, at a foreseen speed and according to the designed intensity under the conditions approved by the plan and road profile;
- d) by preserving adequate road conditions for transport and exploitation (flatness, adhesion coefficient) by maintenance and repair units as established during the execution phase, and by timely removal of the influence of external factors, primarily climate-related ones (fog, rain, ice, snow, etc.);
- e) by properly informing drivers of road conditions and traffic arrangements, by installing road signs, and in some cases, by directing traffic.

## 2. The concept of traffic safety

During the last decades, the European Union has recognized the growing importance of road infrastructure safety, formulating a response by Directive 2008/96/EC of the European Parliament and Council of 19 November 2008 regarding the management of this area. Also, the United Nations, by the resolution adopted on 2 March 2010, recognised the gravity of this problem and declared the decade 2011-2020, the Decade of action for road safety.<sup>1</sup>

One cannot establish a correct definition on road safety because this area involves multiple responsibilities.

Normally, road safety refers to a range of methods and measures aimed at reducing the risk of accidents.

The report "Global Status Report on Road Safety Time for Action" 2009 indicates a bleak prediction worldwide in terms of traffic accidents as a cause of death. So, if in 2004 road accidents produced about 2.2% of deaths (item 9), by 2030 they will be the cause of 3.6% of deaths (position 5).<sup>2</sup>

Traffic safety is an indicator of road transport system, as a consequence of the interaction of factors that determine its operation. This is all the more as traffic accidents which involve direct costs are supported by the health sector, by businesses and the families of those involved. In terms of costs and of the loss of human life, current statistics place road transportation first. This makes road safety a matter of individual, national, European and worldwide interest, and the approaches must consider the shared responsibility of all actors involved.

Over time, internationally, various ways of road safety management were discussed, as follows:<sup>3</sup>

Phase 1: thinking and practice in the 1950s focused on the role of driver and on the approach "the victim is to blame". The management of the road safety during this period can be characterized by dispersed, uncoordinated and insufficiently documented units, which fulfilled single isolated functions;

Phase 2: thinking and practice in the 1960s and 1970s focused on interventions at the infrastructure – driver – vehicle system, before, during and after the accident, without establishing the responsibilities of an institutional management;

Phase 3: thinking and practice in the 1980s and 1990s focused on interventions in the entire system, on clearly outlined objectives and on creating a base at the institutional level, so as to make plans and action programs which eventually had reduced considerably the road accidents during these decades;

<sup>1</sup> United Nations: A/RES/64/255, Improving global road safety Resolution adopted by the General Assembly on 2 March 2010

<sup>2</sup> World Health Organisation: The report "Global Status Report on Road Safety Time for Action", 2009

<sup>3</sup> BurlacuFlorentina, 2014 – "Influence road characteristics on road safety", Bucuresti

Phase 4: From 1990, thinking and practice focused on holistic approaches known as Safety system, which aimed mainly at eliminating long-term adverse effects and serious injuries from traffic accidents.

The World Health Organization and the World Bank estimated a growth in traffic deaths over the normal limits by 2020, if in the present the lawmakers and those working to contribute to road safety will not take a series of additional measures to improve road safety, the number of accidents will be constantly be growing. Since the risk of being involved in a road accident can be reduced through various measures, one could state that road accidents as well can be prevented through legislative measures, preventive education, or technical and corrective measures, which would reduce the number of such accidents and implicitly of casualties.

### 3. Road traffic strategies

As a result of the current situation, most developed countries have initiated various actions aimed at improving road safety, developed to the level of national strategies; some of them are presented in Table 1.1.

The adopted vision on road safety represents a description of a future desirable situation, which is based on a well established theory on how different components of the road system are desired to interact to ensure the maximum possible level of safety. The vision is adopted on a long-term, without mentioning a deadline, but providing guidance on road safety and offering the possibility to reflect on the necessary improvements to achieve the situation referred to in the vision. If there is commitment and funding, a road safety vision directs the actions and constitutes a foundation for road safety plans and programs.

Vision Zero on road safety is based on the idea of minimizing the number of road accidents during a calendar year.

Sustainable Safety in the Netherlands and the Swedish Vision Zero are the best-known examples of road safety visions, which were adopted by other countries. In both visions, the basic idea is to transform the road system so as to eliminate all known human-error possibilities, and to reduce physical damages due to accidents.

#### 3.1. Tables

Table 1. Road safety strategies in reference countries<sup>4</sup>

Country	Adopted vision
Suedia	Zero vision
Norvegia	Zero vision
Marea Britaniei	Zero vision
Austria	Level of road safety compared with the first three countries in the EU
Olanda	Sustainable road safety
Danemarca	Even one accident is too much
Canada	To have the safest roads in the world
Australia	Vision zero/ roads safer for the whole community
Noua Zeelanda	A road safety culture.

<sup>4</sup> Burlacu Florentina, 2014- "Influence road characteristics on road safety", Bucuresti

#### 4. Integrating the concept road traffic in Romania international environment

Many causes of the difficult situation of road safety in Europe can be recognized and Romania, such as:

- coordination between units with responsibilities in spatial planning and development Road planning and administration;
- closer coordination between the Road Administration and the Police;
- lack of technical staff specializing in traffic safety, including the preparation of specialized higher education institutions;
- the traditional road design for high speed movement;
- the need for redevelopment of existing lanes, not in terms of traffic flow, as in that of traffic safety and the environment;

After Romania's accession to European Union law 265/2008 was adopted on road safety audits.<sup>5</sup> According to it audit of road safety is an integral part of road safety management, by which the valuation implication on road safety of different alternative designs of public roads, rehabilitation projects and /or modernization of existing public roads, the small-scale projects, as well as ISR projects in order to identify the detailed risk that can contribute to road accidents in order to increase safety of road infrastructure.

Part of the objectives of the National Strategy for Road Safety 2013-2020.<sup>6</sup>

creation of training programs and of undergraduate and postgraduate programs in the field of road safety for: road safety auditor, road safety impact-assess men auditor, road safety inspector, traffic management, urban mobility, accident reconstruction, transport psychology;

developing and maintaining a safe road infrastructure with a special component dedicated to Intelligent Transport Systems – ITS;

improving infrastructure safety and of horizontal/vertical signalling means;

the verification of the viability and safety of public roads;

improving rules on traffic studies, regulating mobility plans and introducing local and regional plans for integrated mobility and road safety when justifying urban plans and zoning;

revising the rules of urban development or building along transit roads –European, national, county roads – and limiting the linear development of existing settlements.

#### 5. Statistics on road accidents in Romania

According to data from the Ministry of Interior through the General Inspectorate of Police, on the situation of serious road accidents in Romania during 2001-2011.

Increasing the number of serious accidents in Romanian 2006-2008, due to the increase of the national park vehicles amid out dated road infrastructure, and a lack of stringent legislative measure on road or failure to properly apply the existing legislative norms. Park vehicles in Romania registered signify cant grow thin 2002-2007 due to the increase in vehicle sales in the period.

The rehabilitation of road infrastructure and the changes that have occurred since 2006 traffic law (Law 49/2006 for amending and approving the GEO 195/2002 on public roads) led to fewer serious accidents since only 2009.

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<sup>5</sup> Law no. 265/2008 on managing traffic safety on road infrastructure, reissued in 2012

<sup>6</sup> 2013-2020 National Strategy for Road Safety

## 6. Conclusions

1. The concept traffic safety is an integrated concept which in corporate specific elements in its structure, which integrates the movement of traffic in specific conditions in Romania.
2. In developing the concept authors took into account the legal provisions of the European states as well as information on the survey of accidents during 2006-2011
3. The concept of road safety, given the connections with the states of Europe/Americas can be considered an element of strategy to boost road infrastructure in Romania.

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