

RESOURCE ALLOCATION IN DANGEROUS GOODS TRANSPORTATION ENVIRONMENTS¹

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Improving safety in the European roads has been recognized as a priority by the EC (2003-2010 European Road Safety Action Programme). Within this framework any action aiming to reduce accidents is considered of great importance.

Intelligent Transport Systems (ITS) are being developed to help the driver to avoid or reduce accidents. ITS are multi-agent systems depending on diverse factors (traffic, road conditions, weather, driver behaviour, etc.).

Like in any other system conflicts will arise, for example, if different vehicles want to cross through a tunnel that is blocked due to an accident. These conflicts are more critical in Dangerous Goods Transportation, where moreover the factors listed; we have to consider others like the interests given by the transport companies, the industries producing the Dangerous Goods, the problems and risks that arise due to these special cargos.

Conflict Resolution (CR) subsystems aim at identifying the risks and problems in the transportation chain in order to solve these issues, considering all the factors proposed.

In this paper, a review of the actual Dangerous Goods Transportations is done, giving an overview of the different factors and treating the global problematic, also an initial solution to solve these conflicts is proposed.

The CR system proposed makes use of three kinds of data: historical, real time data and information coming from authorities and user groups. Historical data is already available from public or private sources describing traffic density, points more prone to accidents, capacity of the different segments of the roads. Real time data takes into account traffic incidents as well as weather information. Finally the information coming from authorities and user group trigger decision rules motor and influence on the output of the subsystem.

CR system approach tries to reduce problem complexity using a step by step methodology: detection of possible conflicts, classification, and resolution. These systems could be working beside the road authorities, giving a more precise view of the road map and providing a way to reach the main objective, reduce the accidents and increment the traffic efficiency.

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