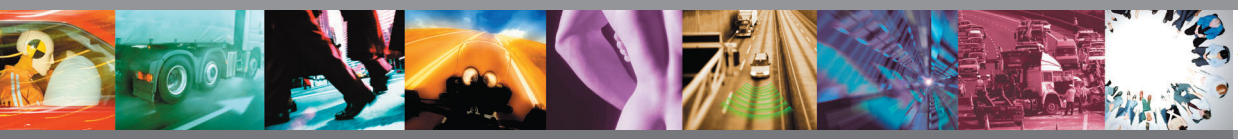


APROSYS
Integrated Project on
Advanced Protection Systems

Sub-Project 2

HEAVY VEHICLE ACCIDENTS

Development and validation of evaluation methods and advanced protection systems for injury reduction in the most relevant type of accidents involving heavy trucks. The focus is on accidents involving vulnerable road users and passenger cars impacting the side of a truck.

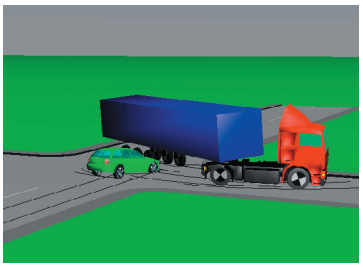
Objectives

The general objective of this Sub-Project is to reduce the number of both fatal and serious injuries in Europe due to accidents where heavy vehicles are involved. More specifically advanced protection systems including compatibility strategies, will be developed dealing with the protection of pedestrians/cyclists in accidents with trucks and the protection of occupants of cars impacting the sides of trucks.

Expected results

- Development strategies for pedestrian and cyclist friendly enhanced design (including front and side structures).
- Active protection system for the front structure with speed dependant and/or pre-crash-sensing based activation.
- Development strategies for enhanced truck and trailer design including all-side under-run prevention systems for new truck trailer concept.
- Recommendations for improvements and harmonisation of regulations.
- Evaluated demonstrator module (numerical and/or experimental) for both add-on part solution as well as new design concepts.

Contribution to the safety problem



For vulnerable road users (pedestrians and cyclists), statistics indicate that more than 1400 unprotected road users in the current EU member States lose their lives every year due to accidents with heavy vehicles. This number is much larger in the Eastern European countries. For opponent vehicles, yearly statistics show approximately 500 occupants that suffer fatal injuries due to impacts with the side of trucks and trailers.

It is estimated that as a result of improved new design concepts, test methods and development guidelines resulting from this sub-project, the fatality and serious injury rate of the 3 victim groups (pedestrians, cyclists and car occupants) will be reduced by approximately 30%. This is nearly equivalent to 600 saved lives within the EU each year and a significant reduction in suffering and societal cost through the reduction in injuries and injury severity.

Sub-Project data

Sub-Project 2 is the part within APROSYS which deals with Heavy Vehicle Accidents. It is subdivided in 2 work packages, one focusing on interactions with vulnerable road users and one on the side impact of cars. The planned duration is 54 months starting July 2004.

SP2 Partners

TRL, TUG, CENTRO RICERCHE FIAT, ŠKODA, ŠKODA VÝZKUM s.r.o., DEKRA, ika RWTH, INSTITUT FÜR KRAFTFAHRWESEN AACHEN, GDV DIE DEUTSCHEN VERSICHERER, Applus IDIADA, FhG, TNO, POLITECNICO DI TORINO, THE UNIVERSITY OF Bolton, mecalog GROUP

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