



CASPER

CHILD ADVANCED SAFETY PROJECT FOR
EUROPEAN ROADS

COVER WORKSHOP MÜNCHEN
29 - 30 NOVEMBER 2010

OUTLOOK: FORECAST OF FUTURE WORK



CASPER - Main aims of CASPER

Improve tools and define methods:

To increase the rate of correctly restrained children:
study parameters that influence the environment of children
transported in cars – vehicle, CRS, parents, children

To evaluate CRS performance:
dummies, sensors and test procedures

development of dummy and child human models

and make proposals of solutions,...



CASPER: Use of gained experience

As shown during the workshop, field data are analyzed and tools are developed in the different work packages of the project.

It is important to combine them in the search of solutions:

- internally to the project
- providing knowledge and experience to other groups
 - through collaborations,
 - participation to conferences
 - organisation of workshops.

Two work packages are aiming to this:

- WP4 – Demands and applications
- WP5 – Dissemination and knowledge exchange



CASPER: Appropriate use of CRS

Define priorities

- To increase of the use of CRS
- For a better comprehension of sociological and practical issues for an easier CRS use
- To disseminate knowledge regarding the ways CRS have to be used,
- To propose ways CRS could be improved to offer a better level of protection

Topics considered to reach objectives:

- Proposal of solutions based on the stated social science study results. Evaluation of consumer needs and expectations
- Possible effects of road safety policies (*politics of prevention*) and improvement of legal issues regarding the transportation of children in cars
- Improvement of the design of CRS. Novel technical solutions of CRS design that could improve the way children are restrained. Usability of proposed CRS solutions
- Improvement of relevant safety regulations (*not only R44*)
- Definition of actions of communication and their possible impacts on the general improvement of the safety of children in cars



CASPER: Appropriate use of CRS

Workplan:

- Analysis of the sociological data (*work already started*)
- Elaboration of an electronic survey (*to be conducted*).
- Program for testing, based on a literature study and performance of sled tests, to analyze the effect of the sitting position of children in cars (*focus on positions taken by children sleeping, relaxing, playing, bending, etc.*).
- Collaboration with GRSP group to ensure the integration of real world feedback into the new proposals of procedure (*misuse, ease of use, compatilby CRS/car, etc.*).



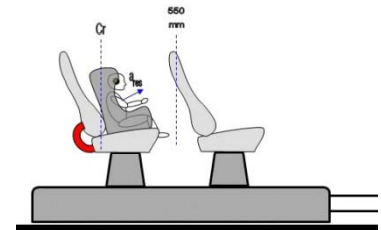
CASPER: Appropriate use of CRS Solutions / issues

- To reach parents :
making data information campaigns available is a necessary first step but it will not have any effect on the rate of correct use of CRS if there is no partnerships to run these campaigns.
- Misuse and sociological data collection methods available: data from other regions / other working groups are possible and make things comparable
- CRS – Information / discussion – with CRS manufacturers.



CASPER: Vehicle safety devices

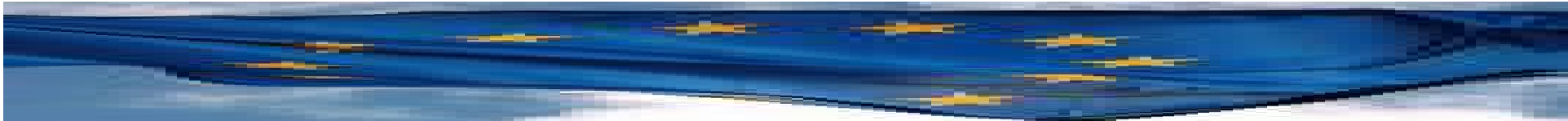
- Investigation of the effect of some devices (*load limitators, side airbags, pre-tensioners on the child safety, head restraints*)
- Review of car to CRS general interface (*state of the art on CRS / car communication*).
- Depending on the proposed car safety devices is plan to evaluate the usability by the use of handling dummies.
- Analysis of CRS anchorage points in cars and proposals for optimisation (*e.g., specification for ISOFIX anchorage point location, etc.*).
- Research for child safety in other modes of transport.
- To undertake expert appraisals in order to review proposed devices in terms of either solution concepts or prototypes.





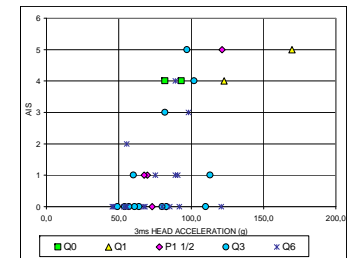
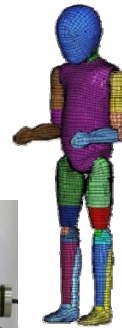
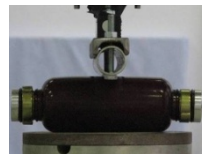
CASPER: Vehicle safety devices Solutions / issues

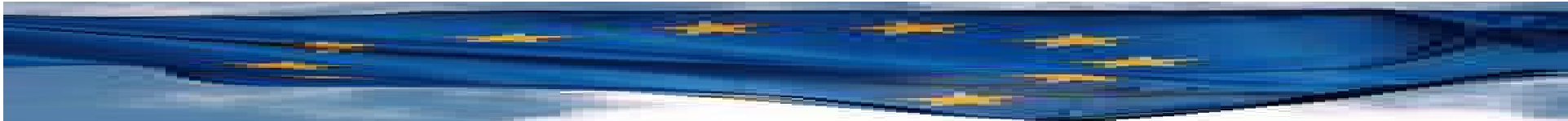
- Large diversity of vehicles, studies can not be run and solutions cannot be tested for each category
- need to collaborate/ have regular advancement of studies and works performed by other groups dealing with similar/complementary items. (ISO, ACEA,...)
- CRS– Existing solutions and prototypes testing – collaboration with CRS manufacturers.



CASPER: Increase of CRS performance: brief summary

development of injury risk functions: the process





CASPER: Increase of CRS performance: brief summary

development of numerical models



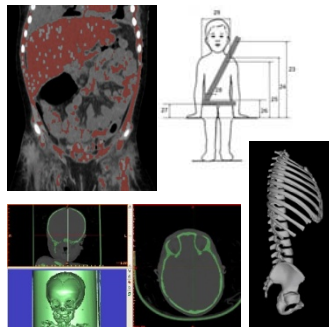
Field data:
Injury mechanisms
Stature and positioning



Dimensions
Material properties



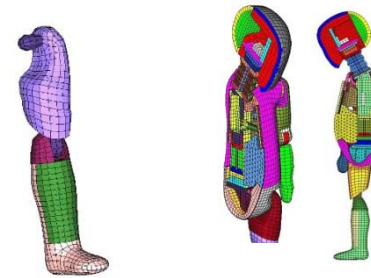
Definition



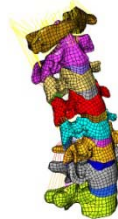
Geometry : internal / external
Mechanical properties

Common
Modelling
technics

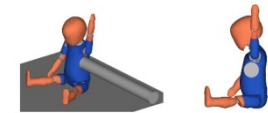
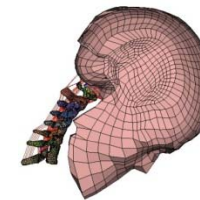
Meshing
& coupling
technics



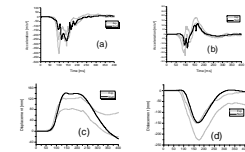
Development of parts



Meshing



Validation tests





CASPER - Test Procedures experimental and virtual

- Existing tests procedures review (frontal, lateral, rear and rollover)
- Work focused mainly in frontal (34% of fatalities) and lateral (28% of fatalities) impacts (*input coming from T3.2.1.*)
Analysis and improvements for rear and rollover tests are not the first priority: they seem to be sufficiently covered by current regulation.
- Testing for side impact : sled tests (direct and inverse), and full scale tests (car to car and barrier to car), results analysis, reporting
- All results coming from the testing will be consolidated and corresponding improved impact procedures will be defined. Tests on existing CRS will be run according to defined procedures
- Modelling and tests simulation, validation, reporting.



CASPER: Test Procedures experimental and virtual Solutions / issues

CASPER is a research project:

- all results will have a different impact on the improvement of child safety.

For a better CRS performance: proposed solutions have to be integrated on products used for regulation purpose:

- dummy modifications
- new sensors to be industrialized
- works on procedures - disseminated
- consolidated injury risk curves



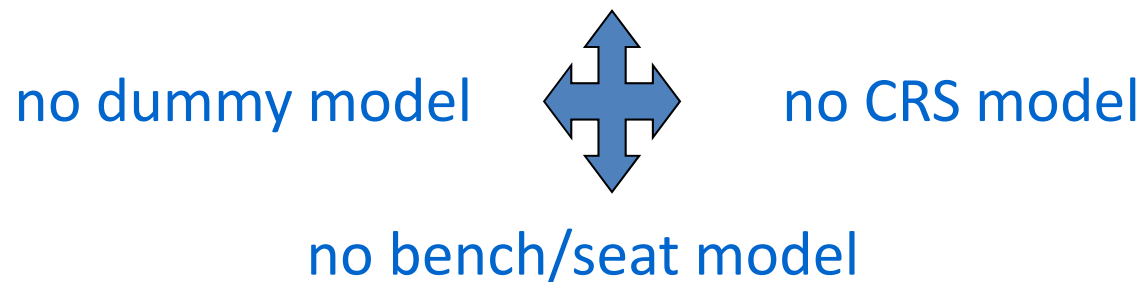
CASPER: Test Procedures experimental and virtual Solutions / issues

Validation of models and virtual test procedures

A large amount of work is spent on the child dummy and child human modelling. The issue there is more that no virtual environment exists:

- It's necessary to develop generic CRS models
- and generic vehicle interiors

chicken and egg problem:





CASPER: Demonstration of feasibility

Once the test procedures are determined and CRS and vehicle safety devices are evaluated, it will be time for the demonstration of the feasibility of these CRS.

Work plan:

- Development of generic CRS models (on going)
- Research and testing on new for child safety devices.
- Provide physical testing data for the numerical models.
- Providing input to the proposals based on experience of the issues associated with the design, operation and use of other vehicles



CASPER: Share of experience

Co-operations – with working groups/projects

GRSP AD-HOC INFORMAL GROUP ON CRS

Very inter-active collaboration. 3 partners regularly attending meetings. side impact test procedure, injury criteria in frontal impact, field data experience. Plan to presentation of dummy works and specific accident reconstruction data

CASPER / EPOCH

workshop organisation, proposal to use a Q10 in a limited number of accident reconstructions

CASPER / DAPPR

Partners would participate if possible (time schedule) to the testing program to evaluate the Ford abdominal. Due to delay in delivering of the sensor this collaborations is not priority for the project, but is kept as an option.



CASPER: Share of experience

Co-operations – partnership

TOYOTA MOTOR EUROPE / CASPER

Share the tests done for the characterization of the abdominal sensors (pressure bladder system) to study the feasibility to integrate it on the THOR dummy.

JANE / RACC:

Misuse field data collection using the CASPER form. The data collection is not yet started.

SRI / CASPER

Safety of children in buses and coach

Objective: to set up a test procedure to be able to homologate a CRS for coaches and buses.



CASPER: Share of experience

Website

PUBLIC PART:

- past and recent publications,
- Data (*publications and deliverables*) of previous Research project (*CREST and CHILD*)
- next events and public deliverables.

-PRIVATE PART:

- Use to store administrative and technical working documents for partners.

CASPER

Child Advanced Safety Project for European Roads



Home Project Results Consortium Publications Events Previous studies

Search this site...

COVER Workshop on Child Safety

on OCTOBER 22, 2010

The CASPER and EPOCH projects on child safety are organising a joint mid-term workshop to present their research findings on child safety and to discuss future activities. This two day workshop will be held on 29 and 30 November 2010 in Munich (Germany).

Child Safety Culture Newsletter No. 1

on OCTOBER 14, 2010

The first newsletter Child Safety Culture was published in October 2010. Philippe Lesire (LAB, France) wrote the Editio and was very prode to present the fresh paper. He really hopes that it is the beginning of a long series of interesting contributions.



Development of the 3YO FE Child Model

on MARCH 15, 2010

Within the CASPER Project, the FE Models of child bodies will be developed. The ages are 1, 3 and 6 years old.



Welcome to the CASPER project

on OCTOBER 20, 2009

The objectives of CASPER are to reduce fatalities and injuries of children in traffic accidents. A badly injured child or a dead child is

Child Advanced Safety Project for European Roads



The objectives of CASPER are to reduce fatalities and injuries of children in traffic accidents. A badly injured child or a dead child is everything nobody can tolerate.

The CASPER Consortium



The CASPER consortium consists of 15

- Enabling Protection for Older Children (EPOCH)
- Thoracic injury assessment for improved vehicle safety (THORAX)



CASPER: Share of experience

Dissemination

Partners regularly participate to conferences and workshops in order to present:

- Objectives and global methods of the project to an enlarged public (*not limited to child safety specialists, not limited to passive safety – more global approach e.g. medical audience, safety teams, surgeons, organisation of rescue,...*),
 - point of advancement
- Specific topics in depth analysis (*methodology and results*) with the aim to develop partnerships and/or share experience.

Two workshops under the umbrella of COVER are planned: mid-term and final dissemination workshops



CASPER: next steps

Mid term workshop:

- Once a status point on methods and first results are presented to a scientific community, it's important to integrate the audience feedback into the technical discussions.

Finalize the planned work:

- Continue the technical work according to road map (may be changed if necessary after integration of feedback), and continue to share results through participation to working groups and publications.

Final workshop and publications:

- Present final results and future perspective of works to be done.



CASPER: OUTLOOK FORECAST OF FUTURE WORKS

Thanks for your attention