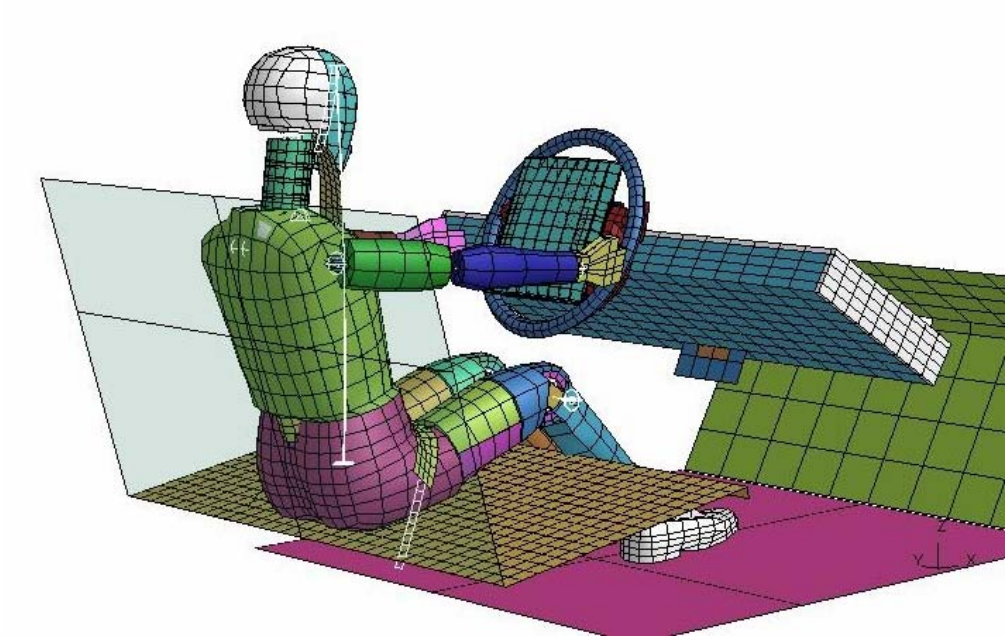
Cranfield Impact Centre

Analysis Capabilities



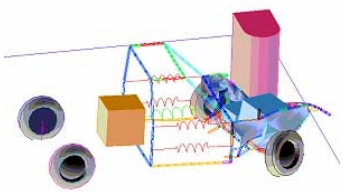
Cranfield Impact Centre (CIC) is a leading company in the field of safety structures, vehicle crashworthiness, and occupant safety analysis and design. Our highly experienced professional engineers have a long list of successful projects in the areas of:

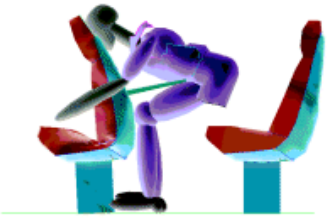
Vehicle and vehicle occupant simulation

Analysis, design, development and testing of safety structures

Design for crashworthiness and crash protection

Pedestrian impact modelling (biomechanics)





By using a hybrid approach to problem solving, CIC combine simplified computer simulation models and component / sub-structure test data. This enables an early understanding of key factors affecting design for good crash performance.

Continuous refinement of the computer model through the vehicle development cycle facilitates project objectives, leading to more reliable predictions and greater efficiency.

CIC have a wealth of expertise in–

Front and side impact for passenger vehicles

Bus and coach rollover and occupant protection

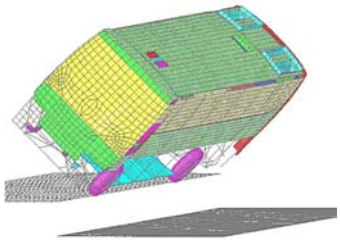
Seat and restraint system design

Structural analysis and design of aircraft and components

Aircrew protection

Assessment and application of alternative materials

Development of biofedelic humanoid computer models



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Recent projects and developments include:

ECBOS	An EC Framework 5 project to improve occupant safety in coaches, city-buses and minibuses through accident investigations, full-scale and component testing, numerical simulations and the development of new and improved test procedures.
Assessment of Small Drivers	A Department for Transport (DfT) project to examine the injury risks for small drivers sitting in close proximity to a vehicle's steering wheel during airbag inflation.
CRAHVI	A European Commission project to develop the tools and methods to predict aircraft structure behaviour when subjected to high velocity impacts
VITES	An EC Framework 5 project to improve the status of Virtual Testing as a means of vehicle development, future type approval and use in extending the range of protection for vehicle occupants in real-world impact scenarios.
BOSCOS	A Foresight Vehicle project to examine technologies and methods for assessing skeletal strength, to optimise restraint system performance for the biomechanical limits of vehicle occupants.
Human Modelling	A study to develop mathematical models of people and examine real world accident scenarios in terms of risk and extent of bodily injury.

CIC has a wealth of experience of creating, developing and running both simple and complex 3-D FE models, on both high-performance pcs and workstations.

Installed software includes IDEAS (SDRC), Hypermesh, LS DYNA-3D, PAMCRASH/PAMSAFE, KRASH, and MADYMO; please contact us for a comprehensive list.

Complementing the computer modelling and simulation, CIC's well-equipped test laboratories feature a range of test rigs for both static and dynamic testing of structures. Tests can be carried out for certification or for experimental purposes. CIC is FIA-approved for a range of statutory tests on Formula 1 and other racing car formulae. A 3-Axis Moment of Inertia test facility has recently been established to provide data of inertia properties.

- Please visit our website for more information -

CIC is a division of CIM Ltd with close links to Cranfield University. CIC was established in 1980 after evolving from the University's Structural Design Group. CIC has been active in industrial consultancy since 1976. CIM Ltd is wholly owned by Cranfield University.

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