

Full field 3D deformation and strain measurement is becoming established in the field of safety testing and reduces development costs.

Pforzheim, January 2008: LIMESS GmbH is specialised in the development of optical measurement systems since 1998 and develops together with Correlated Solutions Inc. the measurement system *Vic3D*.

Vic3D is camera based and measures full field 3D coordinates, displacements and deformations of objects with an accuracy of up to 0.01 pixel and at measurement fields from about 1cm² to more than 10m². Due to it's high flexibility the *Vic3D* system are used beside static applications also in the field of high speed like crash tests, airbag and seatbelt testing and highly dynamic material testing.

Application example: The strain measurement on airbag covers allows the optimization of the opening behaviour by modifying parameters of rated break point, airbag folding or gas generator. The shown result image visualizes the measured strain distribution of a passenger airbag cover. In this case the negative strain (compression) around the crack line (rated break point) must be avoided, e.g. by optimizing th airbag folding.

Furthermore the measured deformation fields can be compared with FEM simulations and the underlying mechanical models and material parameters can be optimized to get closer to the reality. *Vic3D* highspeed systems are successfully used at TRW, Bayer, BMW, Borealis, Rutherford Appleton Laboratory, Airbus and many more and reduce the costs of development, simulation and testing.

