ICEM Surf Safety Analysis Sharp Corner Detection

An add-on module to ICEM Surf Professional, ICEM Surf Safety Analysis has been developed for analysis of potential head impact zones in the cabin and exterior of a car, to protect passengers and pedestrians from injuries caused by sharp edges of car components.

Key capabilities

The ever increasing legislation surrounding the passive safety of automobiles continues to influence the design and protective properties in potential regions of head impact on the exterior and interior components of a vehicle design.

The ICEM Surf Safety Analysis module has been developed especially for the requirements of the automobile industry. Used as a design aid during the component design, non compliant areas can be quickly identified, thus minimizing the need for later geometry modifications and component redesigns requested as the result of a full vehicle safety analysis commonly performed by external software analysis applications.

Used to detect sharp edges and corners on a 3D model that may cause injuries, a sphere simulating a human head is rolled along the selected geometry to detect for curvature radii below a minimum value.

The results are presented graphically on the model by colour shaded triangles. Green surface indicates acceptable radii, with blue representing surfaces where the test-sphere cannot touch. The critical zones not meeting the required vehicle safety legislation parameters are marked in red. Afterwards, these detected areas should be remodelled until they meet the required safety standards.







Customer benefits

- Instant feedback for early detection and removal of potential homologation safety issues.
- No need to wait for expensive physical prototypes before testing can start.
- No time-consuming re-testing and modification loops.
- Fully integrated within ICEM Surf, no need for third-party software, avoiding extra training, and unpredictable data translation issues.
- Quick and easy to use, little extra training required.
- Dynamic clipping planes can be utilised to localise analyses.



About Dassault Systèmes

As a world leader in 3D and Product Lifecycle Management (PLM) solutions, Dassault Systèmes brings value to more than 100,000 customers in 80 countries. A pioneer in the 3D software market since 1981, Dassault Systèmes develops and markets PLM application software and services that support industrial processes and provide a 3D vision of the entire lifecycle of products from conception to maintenance to recycling. The Dassault Systèmes portfolio consists of CATIA for designing the virtual product - Solid-Works for 3D mechanical design - DELMIA for virtual production – SIMULIA for virtual testing - ENOVIA for global collaborative lifecycle management, and 3DVIA for online 3D lifelike experiences. Dassault Systèmes shares are listed on Euronext Paris (#13065, DSY.PA) and Dassault Systèmes ADRs may be traded on the US Over-The-Counter (OTC) market (DASTY). **For more information, visit www.3ds.com**

