VISUAL FUSION Airbag Analysis

The VISUAL FUSION airbag module provides the ability to automatically outline the airbag on a frame-by-frame basis. Using this information, the user can display the outline contours for successive frames. Plots describing the deployment can be generated, such as leading edge position versus time, leading edge velocity versus position, and area versus time.

Analysis begins by processing the image sequence to determine the airbag shape in each frame. The VISUAL FUSION airbag module automatically determines the airbag shape in each frame, neatly drawing the outline on the imagery for you. No time consuming, manual outlining, no tedious placement of individual track points! The software does it all.

Once VISUAL FUSION has performed this first step for you, you can perform a number of airbag specific analyses. You can plot the contour outline shape every Nth frame. Just pick a start and end frame, and whether you want the outline every frame, every 2nd, 3rd, or Nth frame, VISUAL FUSION plots the outlines, giving a single pictorial view of the expansion (see below).

Graphs of leading edge position, velocity, or airbag area are just a click away. With a single mouse click, you select a point from which to measure the leading edge position. VISUAL FUSION then computes the leading edge direction and distance every frame. Alternatively, with another mouse click, you can select a direction in which to measure the leading edge position.

VISUAL FUSION gives you the option of plotting leading edge position or velocity versus time, or leading edge velocity versus position. As with any target, you can plot area versus time.

Of course, you can combine any of these results, as shown below, or import external data (such as an internal gas pressure measurement) and plot on the same graphs.

- Automatic contouring
- Area vs Time
- Leading Edge Position vs Time (automatic or at user specified angle)
- Leading Edge Velocity vs Edge Position
- Import external data

This application note describes the airbag analysis features of the VISUAL FUSION motion analysis software package. Basic tracking capability and various extensions available for VISUAL FUSION are described in the general brochure.

Developed by analysts, for analysts.

For more information contact:

Dr. Jack Sanders-Reed
IVET, LLC
3 Satellite Ct
Tijeras, NM 87059
505-450-1851
Jack.SandersReed@gmail.com