

Highlights

- Standardizes, simplifies and automates the gauge correlation process
- Results extraction at the exact position of the gauge as in the test lab
- Automatic results interpolation in CAE model
- Multi-gauges post processing to ensure correlation on the whole model
- Seamlessly integrated in the HyperWorks environment

Ideal for Organizations that:

Have to process strain gauge results from labs to validate CAE simulation modelling and results.

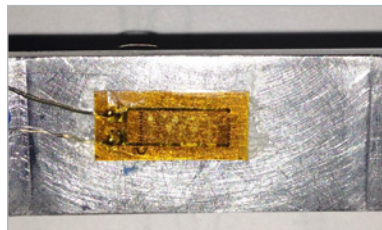
Virtual Gauge Director

Streamlining the Correlation Processes

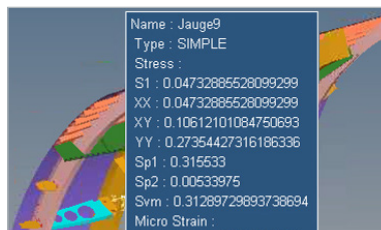
Correlation between CAE and tests results is very strategic activity. It boosts the confidence in the development of the product. Altair's Virtual Gauge Director (VGD) is a combination of customized software and services that enable engineers to extract the results at the exact position of the strain gauge as in the test lab, interpolate the results at an identified CAE location, compute results in the local coordinate system of the gauge, and give a correlation index confidence. The Director can also be used to interpolate stress or strain values at any placement in the model.

The solution contains a series of easy to use panels that allow the engineer to automatically identify gauge locations, review and interpolate CAE results, highlight issues and correlate to physical test data.

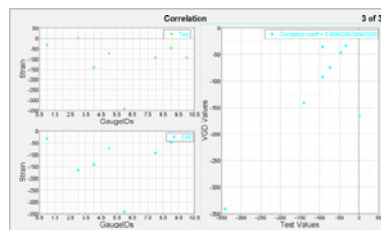
The Virtual Gauge Director Workflow



Instrumentation - The VGD is able to obtain gauge locations and create gauges automatically.



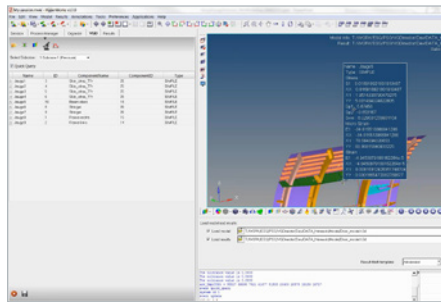
Interpolation - Interpolation of CAE results at the exact position and in the same orientation as in test lab. Results are exported to the next stage.



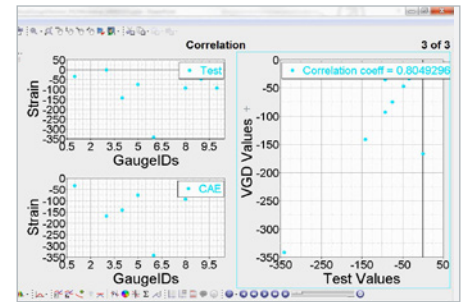
Correlation - Built-in intelligence to identify correspondence and calculate the global correlation of all the gauges in a structure. Results are plotted and displayed in HyperGraph.

Name	ID	Type	Status
Jauge1	3	SIMPLE	●
Jauge2	4	SIMPLE	●
Jauge3	5	SIMPLE	●
Jauge4	6	SIMPLE	●
Jauge5	7	SIMPLE	●
Jauge6	8	SIMPLE	●
Jauge7	9	SIMPLE	●
Jauge8	1	SIMPLE	●
Jauge9	2	SIMPLE	●

Status check to quickly identify errors with the creation of virtual gauges



Review interpolated results at the position of the gauge and projected in the local system of the gauge



Results are displayed in HyperGraph for fast and efficient review

Key Features

Instrumentation

- Create virtual gauges on the Finite Element model by importing a .CSV file into the VGD
- View details of each gauge including type, position, component name and ID
- Click to auto-zoom to the position of any gauge in the model for fast visual review
- Status of each gauge is shown to highlight any issues during the import process with tools available to correct problems

Subcase Results Selection

- Select the required subcase and stress and strain results to interpolate them at the gauge position
- Option to compute the strain in plane stress

Interpolation

- Review CAE results from the interpolation on each gauge including detailed information on the stress and strain results
- Compare lab strain results to strain in plane stress or CAE strain results to ensure a match between the virtual and test gauges
- Export stress and strain results in a .CSV or text file

Correlation

- VGD imports strain results file (only one file) from test environment.
- Automatically matches results based gauge names with option to manually edit correspondence
- Presents information on the global correlation of all the strain gauges in the model
- Results are plotted and displayed in HyperGraph

Deployment:

- Altair's team will work with you to understand its unique operating practices to ensure that the VGD meets requirements. Our experts support the following tasks:
- **Evaluate** current methods for correlating test results for strain gauges with CAE
 - **Align** the automation solution base module accordingly
 - **Provide** quick start focused support and periodic checkpoint assessments to ensure a successful user experience

Ideal for companies working in:



Automotive



Heavy Goods



Rail



Oil & Gas



Aerospace



Altair Engineering, Inc.
 1820 E. Big Beaver Rd. Troy, MI 48083-2031 USA
 Phone: +1.248.614.2400 • Fax: +1.248.614.2411
 www.altair.com • info@altair.com

For more information about Virtual Gauge Director and other Enterprise Solutions, contact us at info@altair.com

Altair's Enterprise Software and Solutions division helps companies to solve business and engineering problems at the desktop, team and enterprise levels. We work closely with our clients to increase organizational efficiency and decision-making by building solutions that are tailored to their unique environment and processes. These solutions include: cloud-based simulation and high-performance technical computing, CAE workflow automation, and specialized data analytics applications.