# MAUL·THEET
Vibration Test & Analysis

Modal Analysis Software

vModal

No engineer could possibly manage to design a construction, solving all problems due to noise and vibrations without precise knowledge of the inherent properties of a structure. To determine the structure's properties experimentally the modal analysis offers an excellent tool. **vModal** provides the engineer with the complete hard- and software equipment necessary to carry out a successful modal analysis or an operating deflection shape measurement.

- *Modal Analysis*
- *SDOF local, global*
- *MDOF local, global*
- *Handfit*
- *Mode-Indicator Function*
- *Polyreferenz*
- *Synthetic FRFs*
- *Fit Quality Function*
- *MAC Function*
- *Simulation*
- *UFF Import / Export*
- *ODS*
- *Animation as AVI-Files*
- *Free Viewer*
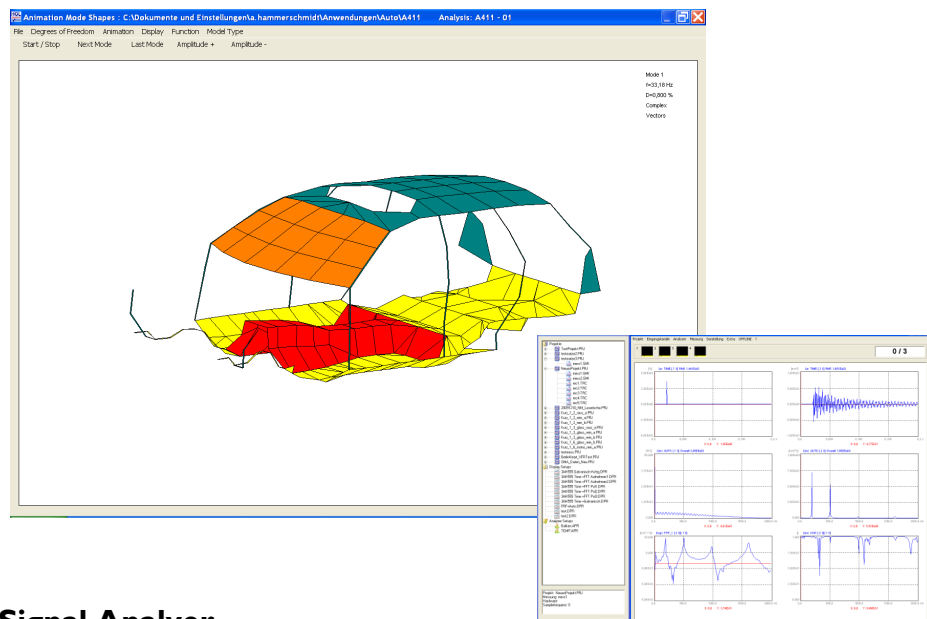
Signal Analyer
The **vAnalyzer** is integrated in **vModal**. The **vAnalyzer** is a complete vibration measurement system that supports different DAQ hardware. Devices from 4 to 64+ channels are available as USB or Ethernet solutions with frequency ranges from 1Hz to 100kHz.

Measurement Data
Every measurement will be transferred via the measurement interface to the database. From there they can be recalled for any displaying and editing. Further the measurement interface includes the routines for modal extractions of multi-shaker measurements.

UFF Import for external data
Data from external DAQ systems can be imported as UFF-Files.

Modal Calculation

For the determination of the modal-Values and for other calculations the following functions are available:

- SDOF local, global
- MDOF, local, global
- Hand-fit
- Mode-Indicator Function
- Poly Reference
- Synthetic Frequency Response Functions
- Fit Quality Function
- MAC Function
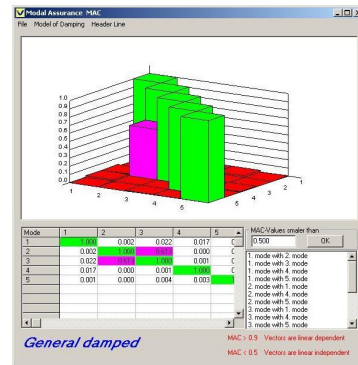
Simulation

Using the results of the modal analysis, Eigen-frequencies, mode shapes and damping, the engineer will be able to create a mathematical model, suitable for any calculation concerning sensitivity and optimization. A feature to carry out forced response calculations is also integrated. Verifications of FEM calculations are possible with a special import module for FEM Eigen-vectors.

Operating Deflections

Stationary operating deflections can be measured in the frequency or time domain. For transient vibrations, measurements and ODS in the time domain can be done.

3D-Animation

All results can be displayed as animated shapes. There are wire frame and hidden line models that enable the user to display the results of the operating deflection measurements, the modal analysis and the calculated forced response vibrations.

Reporting

All Graphs and 3D-Animation steps can be exported as wmf-files, copied to clipboard or directly send to a printer. The 3D-Animations additionally can be saved as AVI-Films to be used for replay in the Windows Media Player® or in visual presentations as e.g. in Microsoft PowerPoint®.

Show Module

The results can be passed on with the free show module. The recipient can view and print out both the measurement data and the animated deflection shapes. For output, the graphics can be inserted directly into documents via the clipboard, printed

or saved as *.WMF files.