



Overview of ARTeMIS Modal  
Versions and Features

Besides from the standard Operational Modal Analysis and Operational Deflection Shapes tools of ARTeMIS Modal, a range of additional plugins are available with separate licenses.

Operational Modal Analysis (OMA)  
Experimental Modal Analysis (EMA)  
Operating Deflection Shapes (ODS)  
Structural Health Monitoring (SHM)

The major features are listed on the next page, along with their availability in each of the three different versions of ARTeMIS Modal: **Basic, Standard and Pro.**

<b>ARTEMIS Modal Features</b>	<b>Basic</b>	<b>Standard</b>	<b>Pro</b>
<b>Setup Task - Prepare Geometry</b>			
- Create test geometry from scratch	▪	▪	▪
- Import/modify existing geometry	▪	▪	▪
<b>Setup Task - Manage Measurements</b>			
- Import measurement files	▪	▪	▪
- Merge measurement files	▪	▪	▪
- Integrate/differentiate measurements	▪	▪	▪
- View raw time series	▪	▪	▪
- Connect/disconnect channels and Test Setups	▪	▪	▪
<b>Setup Task - Assign DOF Information</b>			
- Link channels with geometry nodes and directions	▪	▪	▪
- Link using Drag & Drop or by direct editing	▪	▪	▪
- Automatic identification of reference channels	▪	▪	▪
- Easy replication of a Test Setup and its reference channels	▪	▪	▪
<b>Analysis Task - Prepare Data</b>			
- Configure all preprocessing of measurements	▪	▪	▪
- View processed data of channels and Test Setups	▪	▪	▪
- Option for automatic selection of projection channels	▪	▪	▪
- Compare processed data of reference channels	▪	▪	▪
- Outlier detection and signal repair		▪	▪
<b>Analysis Task - Operating Deflection Shapes</b>			
- Frequency and Time Domain Operating Deflection Shapes	▪	▪	▪
- Animate physical behavior at user-selectable frequencies	▪	▪	▪
- Animate physical behavior as displacements, velocities or accelerations in time		▪	▪
- Store specific ODS shapes in frequency domain	▪	▪	▪
<b>Analysis Task - Modal Estimation (OMA)</b>			
- Estimation of natural frequencies	▪	▪	▪
- Estimation of damping ratios		▪	▪
- Estimation and animation of mode shapes	▪	▪	▪
- Estimation of normal mode shapes	▪	▪	▪
- Estimation of uncertainties of modal parameters		▪	▪
- Frequency Domain Decomposition (FDD)	▪	▪	▪
- Enhanced Frequency Domain Decomposition (EFDD)		▪	▪
- Curve-fit Frequency Domain Decomposition (CFDD)		▪	▪
- Crystal Clear SSI® Stochastic Subspace Identification (SSI-UPC)		▪	▪
- Crystal Clear SSI® Stochastic Subspace Identification (SSI-PC)		▪	▪
- Crystal Clear SSI® Stochastic Subspace Identification (SSI-CVA)		▪	▪
- Crystal Clear SSI® Stochastic Subspace Identification (SSI-UPC Merged Test Setups)		▪	▪
- Crystal Clear SSI® Stochastic Subspace Identification (SSI-UPCX)		▪	▪
- Command line (batch mode) modal parameter estimation		▪	▪
<b>Analysis Task - Modal Estimation (EMA plugin required)</b>			
- Complex Mode Indicator Function (CMIF)	▪	▪	▪
- Rational Fraction Polynomial in Z Domain (RFP-Z)	▪	▪	▪
<b>Analysis Task - Validation</b>			
- Mode shapes animation, overlaid, side-by-side or top-bottom		▪	▪
- Mode shapes difference animation		▪	▪
- Modal Assurance Criterion with uncertainty bounds for SSI-UPCX		▪	▪
- Comparison of Mode Complexity with confidence ellipsoids for SSI-UPCX		▪	▪
- Comparison between estimated and imported modes		▪	▪
- Frequency versus Damping diagrams with confidence ellipsoids for SSI-UPCX		▪	▪
<b>Report Task</b>			
- Easy selection of graphics and tables	▪	▪	▪
- Seamless integration with Microsoft® Office 32bit/64bit	▪	▪	▪
- Generate Word documents and Power Point presentations	▪	▪	▪
- Predefined standard templates	▪	▪	▪
- Exporting mode shapes animations in AVI or GIF formats	▪	▪	▪
<b>Plugin Modules</b>			
- Data Manager Base Module including Historical Measurement Statistics			▪
- Damage Detection, Classic and Robust methods as well as unifying Control Chart			▪
- Modal Parameter History including automatic mode tracking and tracked modes export			▪
- Interstorey Drift Analysis			▪
- Data Acquisition - Automatic File Upload			▪
- Data Acquisition - Direct control of National Instruments Data Acquisition Modules	▪	▪	▪
- Data Acquisition - Direct control of SINUS Messtechnik Data Acquisition Modules	▪	▪	▪
- Data Acquisition - Direct control of HGL Dynamics Data Acquisition Modules	▪	▪	▪
- Data Acquisition - Direct control of HBM Data Acquisition Modules	▪	▪	▪
- Experimental Modal Analysis – EMA	▪	▪	▪
- Harmonic Detection and Reduction – Detect and / or remove harmonic components in OMA analysis	▪	▪	▪



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