

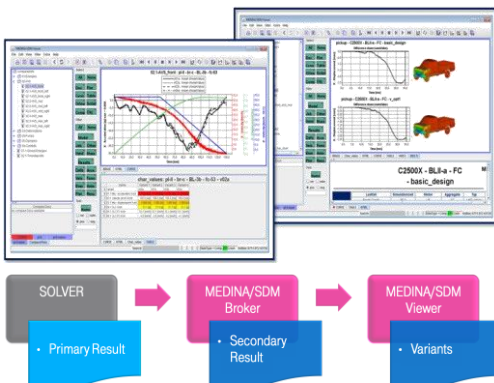
MEDINA/SDM. SMART CAE-SOLUTION FOR VARIANT ANALYSIS.

Today shorter time to market, more variants, reduction of physical prototypes and regulatory requirements drives the challenge in virtual product validation. Efficient solutions are essential to deliver in budget, time and quality. Complex variants for an increasing number of model variants needs to be reviewed in detail within a short timeframe. MEDINA/SDM supports this important optimization process and leads to a significant efficiency enhancement.

PRIMARY AND SECONDARY RESULTS.

Optimization is based on analysis of numerous variants. These variants vary in different values/criteria, like material, geometry, load case or boundary conditions. Numerical simulation using solvers delivers primary results for these variants. From primary results derived data (secondary result) are used to review the variants. Typical derived results are diagrams, spreadsheets, pictures, animations or key values (for example HIC-values). The ability to compare „on the fly“ variants and related test data is essential. This helps to focus on value added engineering time.

BROKER AND VIEWER.



MEDINA/SDM consists of the modules Broker and Viewer.

The Broker module uses business process libraries to derive automatically secondary results from the primary results provided by the CAE solver. All metadata are available throughout the entire process.

Core to gain these high quality secondary results is on the one hand the template engine and on the other hand the specific post-processing libraries coming with MEDINA/SDM. The template engine controls the post-processing and ensures standardization and traceability. User-

defined scripts or tools can be integrated in this post-processing in an efficient way.

The predefined post-processing libraries (packages) are bundled to cover special application areas. They extend the Broker module with dedicated out of the box features to meet industrial analysis requirements for model reviews.

The easily operated Viewer module offers the fast and efficient multi-variant analysis within its GUI. Powerful and field tested features for analysis, comparison and filtering are available. Searching variants based on attributes or directly within the tree structure provided within the GUI is easily possible.

The history and consistency of the data are ensured throughout the whole process.

TARGET GROUP AND VALUE PROPOSITION.

MEDINA/SDM is the right solution within the virtual product validation if you have

- high time pressure
- huge numbers of variants to review
- increasing complexity
- to provide high quality standard

MEDINA/SDM delivers benefits and added value:

- substantial gains within multi-variant analysis for all kind of simulations
- automation and efficient analysis helps to focus on value added engineering tasks
- direct comparison of simulation results and test data accelerates the validation process
- standardization of processes and data structures
- ensures continuously data traceability and consistency
- a demand-oriented licensing model rests your budget

MEDINA/SDM.

FEATURES OF THE BROKER.

The Broker module evaluates the primary result coming from the solver. It generates automatically secondary results with the template engine:

- Automation of batch processes (e.g. when scripts or tools should be integrated)
- Definition and configuration of all process steps for the template through an open and flexible XML-Interface
- Automatic creation of a structured project data tree
- Easy adaption and configuration of delivered template library to meet your needs
- Identical secondary project data structure for simulation and test
- Operation mode on file-server or through interface with SDM system

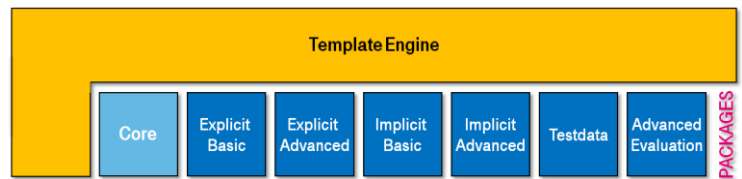
FEATURES OF THE VIEWER.

The Viewer module allows the visualization and further investigations of the data produced by the Broker module:

- Creation and visualization of structured project documentation
- Numerous filtering features for data
- Easily operated search functionality, e.g. attribute based
- Powerful features for data comparison
- Direct visualization of diagrams, spreadsheets, pictures (JPG, TIFF, PNG, GIF) and videos
- Interactive creation of derived results
- Capability to link easily third party applications for further visualization and data processing
- Visualize synchronised videos
- Apply mathematical functions on data (FFT, multiplication, division and integration)
- Direct visualization of binary LS-DYNA results

SOLUTION OVERVIEW

- Fast multi-variant analysis
- Tailored and industrial proven post-processing libraries
- High automation possible
- Excellent integration capabilities
- Attractive price model
- More value-added engineering time
- Ensures reproducibility, standardization and data consistency



POSTPROCESSING LIBRARIES.

- **Core:** Basic process steps and analysis
- **Explicit Basic:** Post-processing for dynamic simulation (CRASH) with LS-DYNA results
- **Explicit Advanced:** Complex post-processing for dynamic simulation (pedestrian safety included)
- **Implicit Basic:** Post-processing for static simulation with NASTRAN or PERMAS results (linear, non-linear, modal, etc.)
- **Implicit Advanced:** Complex post-processing for static simulation with NASTRAN, PERMAS, ABAQUS results when utilizing MEDINA.PrePost
- **Testdata:** Extensive post-processing of test data. Formats: CSV, ISO-MME, Universal, etc.
- **Advanced Evaluation:** Powerful package to create own analysis

CUSTOMIZATION.

Our Experts are at your disposal:

- for demand analysis (analysis of your CAE-Infrastructure to determine automation potential),
- for installation and operation of MEDINA/SDM,
- for projects (for example within transition phase),
- after system introduction for determination of further optimization potential.

SYSTEM PREREQUISITES.

- Operating system: UNIX, Linux, Windows 7 (needs cygwin)
- Java Run Time Version 1.7.0
- Perl Version 5.8

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