Process Automation

Eliminate turnaround time

ANSA
PRE PROCESSOR

Achieve repeatability
in your frequently performed tasks

Today's CAE cycles involve a great number of standardized processes. Process automation capabilities of ANSA can accurately capture any pre-processing task making any quality criteria and requirements inherent to the process. As a result, the productivity of engineering teams is improved and the quality of models is assured, leading to a drastic reduction of the CAE turnaround time.

Task manager

At the heart of the integrated process automation lies the Task Manager. Pre-processing workflow can be captured in the form of a Task template. Templates in the Task Manager are built- up by analysis experts and describe all the distinct required steps of the modeling process. With Task Manager templates, the order of pre-processing actions, as well as any related parameters, are standardized, leading to the integration of the documentation of CAE procedures directly within the tool.

Tasks templates consist of task items. Task items represent distinct actions and can invoke all the standard functionality of ANSA, as well as any existing user script. Core modeling tools like the Batch Mesh Manager, the Connections Manager, and the Checks Manager are orchestrated by the Task Manager, forming seamless processes that cover the hole pre-processing spectrum. The generated tasks are not bound to any particular set of data. Thus, a library of tasks can be generated and then used to process different models.

Scripting

ANSA and META include an Application Programming Interface that allows the users to access the ANSA and META core functionality and data with the aid of Python scripts. In ANSA, scripting is used to customize the standard tools, building tailor-maid solutions, and also to extend the core functionality of the program. A rich

library of functions enables the creation and manipulation of model data from geometry to mesh and from model checks to solver entities. The Python Programming language allows the use of numerous external libraries (i.e. mathematical, scientific) which supply the users with countless capabilities straight in their hands.
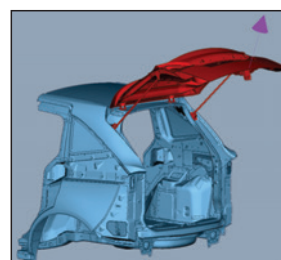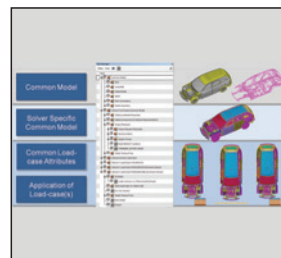
Features

- Python programming language
- Customization of core functionality
- Complete process capturing
- Process templates
- Customizable Graphical User Interface

Benefits

- Process standardization
- Model quality assurance
- Automatic model adaptation to changes
- Reusability, Repeatability

Automate report generation,
and focus on understanding your products behavior

META offers a unique range of powerful tools to set up automated 3D and 2D post processing tasks. Special action based language (session), Python programming and user defined toolbars can boost productivity offering post- processing time reduction, limitless automation capabilities, and reliable repeatability. Manual post-processing is recorded, parametrized, and executed through an intuitive GUI, without the need for text editing.

Session files

META supports and assigns commands for reapplication without the need for the user interference. The Session Editor facilitates the creation, editing and parametrization of session files.

User toolbars

All necessary analysis-oriented commands can be gathered in a single interface and assigned to intuitive GUI entities including buttons, textboxes, etc.

Script files

The capabilities of scripting, using the Python programming language, are limitless, as everything inside META can be accessed, used and modified. Apart from single script execution, the user can call a script inside META tools.
Further script features include the reading and writing of ASCII and binary files, direct session commands incorporation, and extensive interface customization for data input. The Script Editor tool also provides error checking, debugging functionality, and a full library of script functions with online help and examples.

Variables and built-in functions

META includes tools to aid the retrieval and storage of values and other data. In the Variables tool, the user can define and manipulate all available variables. In the Built

in functions tool, data from all entities can be retrieved through an intuitive GUI. Moreover, inherent META variables are automatically created to pinpoint significant session states.

Automatic procedures' execution

In META you can define actions and apply them at each change of state/step/subcase. Furthermore, when the advanced filter tool is used inside a focus command, the tool can be locked so that the filters are reactivated every time the state changes and the respective action is applied on the new filtered entities.

Tools associativity

The interoperability among META's major automation tools can offer users great flexibility. Session parts can be combined with script parts, sessions and scripts can be called from other sessions or scripts.
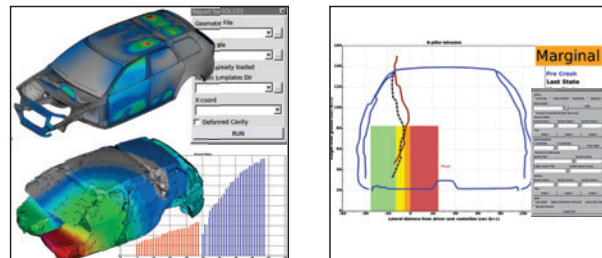
Features	Benefits
• Post- processing and reporting automation	• Time-efficient post processing
• Customizable GUI	• Effortless realization of frequent tasks
• Discipline and specific toolbars	• Fast model comparison
• Processes sharing	• Feasibility of advanced procedures
	• Automatic results reporting

BETA
SIMULATION SOLUTIONS

physics on screen