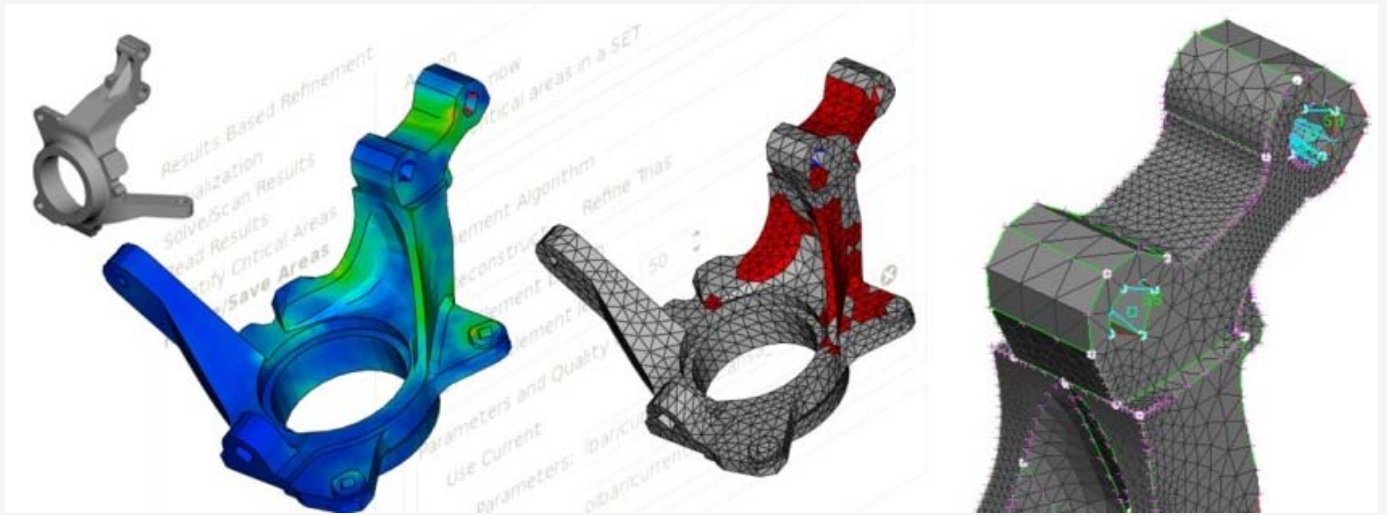# BETA CAE Systems S.A.
announces the release of
ANSA & µETA v15.1.0

About this release

BETA CAE System S.A. announces the release of v15.1.0 of our ANSA & µETA pre- and post- processing suite.

Numerous new tools and enhancements have been made, to expand the capabilities of our suite in facilitating CAE processes, with the most noticeable listed below.

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Understanding the Software Release Schedule

The plan

We are committed in delivering improved and enhanced software releases, the soonest possible, in order to meet the requirement of our customers for the continuous improvement of their experience and work. Therefore, we are working in releasing new software versions with code corrections, new software features and enhancements, in regular, frequent intervals.

- A major software version is released every year.

- First point releases, such as v14.1.0, v14.2.0 and so on, with code corrections but also with additional software features and enhancements are released every three months.

- Second point releases, such as v14.2.1, v14.2.2, v14.2.3 mainly with code corrections only upon their parent first point release, are scheduled on a monthly basis.

Each software release is accompanied by a detailed description of the introduced corrections and/or additions so that our customers can decide whether it is critical to implement this release in their environment.

This release

This release of v15.1.0 implements code corrections, to the v15.0.2 release and the existing releases of the 14x branch.

Enhancements in ANSA

General

Multi touch functionality has been introduced to make ANSA suitable for presentations and use on various devices without the need of keyboard.

Display styles: A new tool has been introduced that stores the current visibility selections status under a given name.

Focus functions support now the selection of the frontal entities (faces, shells, and solids).

JT files can now be imported (translated) directly in ANSA.

Connections and Assembly

The Inspect tool has been introduced to enhance the interactive control of connections visibility and their connectivity.

Special user script functions (e.g. Post Realization function) can now be assigned to a Connection Template.

TOPO

Open Hole: A new option (Produce Cylinder) creates the cylinder between two or more selected faces the hole axis intersects with.

Mid. Surface> Calculate Thickness: The thickness can now be assigned either on nodes or on properties according to the inserted step value.

A new function has been introduced to massively create continuous fillets from multiple faces.

Shell Mesh

Number & Num +/-: The displayed numbers on every perimeter now refer to the counted edges instead of nodes.

DECKs

D.Info: A new option, Synchronize, updates the Classes (ranges) of the criteria with the values from the F11 card.

The Long Format is now supported for LS-DYNA.

Contour plotting for the chosen Load Step is now supported for ANSYS.

Scripts

A new tool named Results Based Refinement is now available in ANSA as a script. Its purpose is to setup and drive a process within ANSA for refining the mesh in areas of high interest based on results output from the solver.

CFD

Major enhancements have been made for CFD meshing including the Spacing AutoCFD in selected Perimeters, the accuracy in proximity refinement, the angle limit control for trailing edges, and many more.

Improvements in shell mesh intersect for better quality fused meshes.

Mesh sharp edges are now automatically fixed.

Improvements in surface Wrapping to avoid unnecessary mesh over refinements.

Model Management

A new way to create result model from the comparison between two different models has been introduced. The Create New Model function provides a user friendly interface and groups the parts into Matched Parts with diffs, Unmatched Parts of Model 1 and Unmatched Parts of Model 2.

The Model Updates function has been introduced to update easily and quickly an existing model when a database or part updates becomes available.

The creation of a 150% model can be achieved automatically by combining two 100% variations of that model.

Kinetics

Basic shape types for Road, Tire and Extrude are now supported. Numerous Road2D types are provided while importing a road file of type .rdf, .crg, and .rdr is now possible.

For more details about the new software features, enhancements and corrections please, refer to the Release Notes document.

Enhancements and known issues resolved in μETA

Enhancements in μETA

General

Crash report: When μETA crashes, a message will popup prompting the user to save the current session file or quit the program. In either way a .dmp file will be written in the current directory to help debug the problem.

A new read option named "Exclude Singularity elements", both for scalar and vector nodal results has been introduced. Activating this option selectively excludes from the nodal results' calculation values of nodes connected to rigid boundary condition entities and to specific Sets.

A new toolbar, named "Views", has been added to interactively manipulate the model view.

Supported Interfaces

Abaqus: - Abaqus CFD results are now supported. – Abaqus beam elements are now read and drawn with their arbitrary shape cross section.

ANSYS: Contact results are now supported.

ANSYS CFX: Results are now supported for reading and post-processing.

CFD++: Supported now in the Section forces tool of μETA.

FieldView: Results are now supported for reading and post-processing.

LS-DYNA: support for: - LS-DYNA CFD results, -The MAT_USER_DEFINED_MATERIALS_MODELS and DATABASE_EXTENT BINARY keywords, and – Time history files "relax".

MEDINA: The SKFENP keyword result is now supported.

Pam-Crash: FEMZIP ERF files are now supported.

RadTherm: Volume elements and results are now supported.

Cut Planes

New fringe options for section results' visualization have been introduced.

CFD

Calculation and graph-plotting integrals, and their weighted averages of values of PIDs from the Statistics list.

Calculation of Flow Uniformity Index in the Statistics list.

Streamlines can be drawn as pathlines for transient vector fields.

Sets

Sets can now be automatically created for GEBs and CONNECTORs defined in the input file.

Report

Support of .pptx report layouts.
Rearranging the order of slides is now possible within the tree list of report slides.
Video file animation is now supported.
It is now possible to save report slides in .jpg and .png format.

2D Plot

Enhanced plotting of Neck injury criterion (Nij) results.

Toolbars

A new toolbar named Occupant injury Criteria has been added to automate the extraction of real-life and simulation results.
The pedestrian toolbar can now calculate the remaining depth and velocity in the summary table.
The BusRollover toolbar can now calculate the survival space using specific nodes on the vehicle superstructure.
Known issues resolved in μETA
Supported Interfaces
Nastran: MAT 10 was wrongly listed as MAT1.
Pam-Crash: Part thickness and element & node names would not be read from ERF files.
2D Plot
Entity names were not read by plotting from the ERFH5 files.
Nastran *.pch files from ERP SORT2 analyses would not be read.

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Compatibility and Supported Platforms

ANSA files saved by all the first and second point releases of a major version are compatible to each other. New major versions can read files saved by previous ones but not vice versa.
The .metadb files saved with μETA version 15.1.0 are compatible and can be opened by earlier versions of μETA.
Support for 32-bit platform has been discontinued for all operating systems except for Windows.

Download

Where to download from

Customers who are served directly by BETA CAE Systems S.A. may download the new software, examples and documentation from their account on our server. They can access their account through the "user login" link at our web site http://www.beta-cae.gr
Contact us if you miss your account details. The [Public] link will give you access to the public downloads area.
Customers who are served by a local business agent should contact the local support channel for software distribution details.

What to download

All files required for the installation of this version reside in the folder named **"BETA_CAE_Systems_v15.1.0 "** and are dated as of **May 16th, 2014.** These files should replace any pre-releases or other files downloaded prior to that date.
The distribution of this version of our pre- and post-processing suite is packaged in one, single, unified installation file, that invokes the respective installer and guides the procedure for the installation of the required components.
For the installation of the software on each platform type, the following files have to be downloaded:

- the .sh installer file residing in the folder with respective platform name, for Linux amd MacOS, 32bit or 64bit or the respective .msi installer file for Windows, 32bit or 64bit, and
- the tutorial example files that reside at the top level of the folder of this distribution.
- In addition to the above, optionally, the μETA Viewer is available to be downloaded for each supported platform.

The Abaqus libraries required for the post-processing of Abaqus .odb files are included in the installation package and can be optionally unpacked.

Previous software releases can be found in the sub-directory called "old" or in a folder named after the product and version number.

Documentation

New Documents

- New ANSA / μETA .html based help for the Python API.
- Results Based Mesh refinement

New tutorials
- ANSA: NASTRAN Embedded Fatigue Model Set-up
- ANSA: Batch solid Mesh, Meshing and Assembly
- CFD Optimization ANSA/ Fluent/ µETA