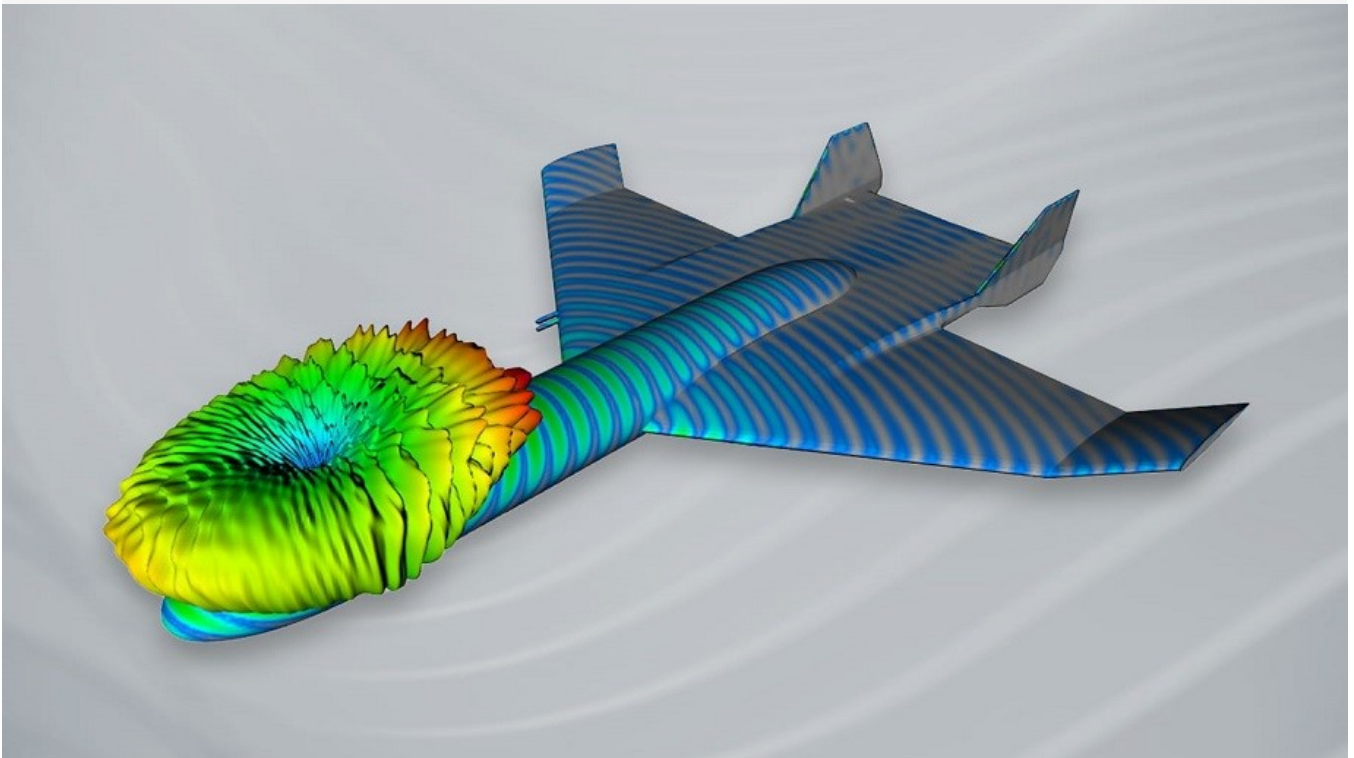July 19, 2022

BETA CAE Systems announces the release of the v23.0.0 of its software suite

About this release

BETA CAE Systems is thrilled to announce the release of the major version v23.0.0 of its product line. The new version includes a vast range of upgrades and performance improvements for existing workflows, as well as new features to unlock further potential for engineering simulation in design and analysis.

Aiming at minimizing design turnaround time and reducing manual set-up for numerous workflows, the new series effectively overcomes the challenges of design performance, while meeting the high-quality requirements of multi-disciplinary engineering teams.

Do not miss:

- The unification of TOPO and MESH functionality in ANSA.
- The seamless integration of Machine Learning in selected mesh functions, such as feature detection and middle mesh generation.
- The accelerated performance of batch algorithms on CFD mixed type meshing.
- The potential of newly introduced domains, such as Electromagnetics and Electrochemistry in ANSA and META.
- The enhanced graphics performance in META, coupled with low GPU memory consumption.
- The extended optimization capabilities in EPILYSIS.
- The integration of SPDRM in various actions in KOMVOS, delivering an extra boost in process execution.

| VIDEOS | HIGHLIGHTS | DOCUMENTATION | COMPATIBILITY | DOWNLOAD |

Videos - Latest developments in BETA's product line

KOMVOS v23.0.0 Highlights

WATCH THE VIDEO

ANSA v23.0.0 Highlights

WATCH THE VIDEO

EPILYSIS v23.0.0 Highlights

WATCH THE VIDEO

META v23.0.0 Highlights

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New version highlights

License Manager compatibility

Starting from v23.0.0 and onwards, the BETA LM v7.0 is a prerequisite for running any BETA Software Suite Product.

Solutions for every stage of product development with ANSA

The unification of TOPO and MESH functionality provides extraordinary boost to the average user as geometry and mesh are completely manipulated from one toolset. This has been supplemented by the redesign of common functions, with modern neat look-and-feel, common GUI, unified functions, as well as by the addition of new dedicated toolsets for the designer or the analyst.

In the mesh area in particular, significant enhancements have taken place for both structural and CFD disciplines.

Such enhancements for the structural discipline includes, the enhanced solid mesh algorithm that provides effortless generation of high-quality mesh, in a redesigned GUI and with direct control of the simplification level. Automated HexaBlock generation for tubular shapes is now possible, while embedded clips FE representations are automatically realized, connected, and stored in DM, through Feature Manager and Casting.

For CFD, an impressive acceleration of 50% has taken place for batch meshing, particularly in mixed type meshing. Further improvements have taken place in anisotropic meshing of leading edges, whereas a special treatment for Layers' Thin Area provides meshed thin regions of volumes using prism and hexa elements.

A plethora of new tools and features have been integrated in the Crash & Safety area as well. The Human Body Models articulation has been enriched with the extended support of GHBMC, THUMS, and VIVA+ families. Also, the new Bicycle Configurator tool targets to the configuration of the main dimensions and the pedals' position of a bicycle model, while setting up the HBM cyclist loadcase. A new direct functionality has also been added in the Seatbelt tool, to locally modify the shape of the belt. All these come along with the new protocols that are now supported by the Pedestrian Tool, such as GBT 24550, JNCAP 2019, C-IASI.

Placing the focus on Durability, pretension and contacts are automatically generated on beams in Connection Manager through BOLT ON SOLID representation, followed by the definition of appropriate steps and loading conditions for Abaqus, Ansys, Nastran NX and Pam-Crash. In a similar manner, a stepwise assistant for the automatic generation of all possible pretensions has been added for Marc solver, including the definition of the respective keywords and the functionality to generate the appropriate contacts around bolts.

Interactive processes are gaining ground in Morphing, aiming in easy, patch-style reinforcement generation, efficient morphing with pinned ends and effortless member creation with multiple Design options.

Apart from all the major features and groundbreaking implementations, we always keep an eye on constantly boosting user performance. Towards that direction, an acceleration of up to x7 in Graphics performance has resulted in up to 50% acceleration of Model Navigation on models with geometry.

In v23.0.0, the user performance boost is evident even when working on plain, daily tasks and processes. For example, in the Database Browser of v23.0.0 the categories have been restructured, connection drawing and selection/deselection methods have been enhanced, and the direct job submission enables the effortless monitoring and error handling for Abaqus, Pam-Crash and LS-DYNA.

Industry-leading solutions through EPILYSIS

The extended support of calculations for Participation Factors, the introduction of new algorithms for Dynamic Modal Solutions and Superelements and for Fluid-Structure Interaction, as well as the output of states pace equations in Functional Mock-up Unit format for use in 3rd party simulation software, are only some of the new capabilities to be revealed in EPILYSIS v23.0.0.

Enhanced user experience in META

Always taking into consideration users' special needs and demands, v23.0.0 introduces new palette styles, providing clearer results visualization including colorblind compatible ones. These come to supplement the redesign of curve functions, as well as the fully customizable 3D window title and many other handy features that upgrade user experience in the new version.

As for the performance boost in post-processing, the reading of Pam-Crash ERF files has been significantly speeded-up and up to x10 performance improvement has been remarked in Part/Group distances and separation plots.

Furthermore, expanding post-processing capabilities to electro-related areas, such as electronics, electromagnetics and electrochemistry, and extending META support to more solver and result files, such as ADVENTURECluster, broaden the analysis fields spectrum even more.

In the NVH field, Modal Displacements as Input in Modal Response tool are available in both transient and frequency response analysis, enabling also acoustic response calculations. Thanks to the new toolbar for Flex Body Analysis, the Flex Body motion derived from MBS results is now animated including stress contour plots. Modal displacements and strain energy participations can also be plotted.

Closing the discipline-related highlights with CFD, shock waves can be detected and visualized through Schlieren Field result. Volume of droplets formed by SPH particles or isofunctions can be identified and further calculated and the number of Flow Paths can be defined in S and T direction.

Moreover, constantly providing access to 3rd party data management servers, such as ASAM ODS, geometry and 3D results are now successfully loaded in META.

Innovative patterns and workflows through KOMVOS

Apart from the significant uplift of Machine Learning algorithms that, not only can be accessed through python script interface, but can also be performed through an SPDRM server, utilizing remote powerful machines for faster training, SPDRM processes have now been smoothly integrated in KOMVOS, providing a significant boost process-wise.

Moreover, with the integration of KOMVOS with Visual Studio Code, any user can now write and test Python code for KOMVOS in a powerful IDE, whereas the addition of relationship-based and mixed-type searches, take user experience and performance to another level.

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

New documentation in ANSA

User Guides

- Data Management

Tutorials

NVH:

- NVH Console – Modal Classification Loadcase

Durability:

- Setting up a model for a Marc analysis
- Nastran SOL 400

Best Practices

- Improvement techniques for meshes of scanned objects

New documentation in META

User Guides

- Data Management
- Brake squeal Toolbar
- Neuber correction Toolbar
- Transient Analysis of Flex Bodies from MBS Toolbar

Tutorials

NVH:

- NVH Console – Modal Classification Loadcase

Durability:

- Setting up a model for a Marc analysis
- Nastran SOL 400

New documentation in KOMVOS

User Guides

- Data Management

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.

META Project files saved from version 23.0.0 are compatible and can be opened by META version 16.0.0 or later.

Support for Windows 7 has been discontinued.

Support for Red Hat 6, and other Red Hat 6 compatible Linux distributions has been discontinued.

Support for Mac OS has been discontinued.

Support for 32-bit platforms has been discontinued for all operating systems.

Download

Where to download from

Customers who are served directly by BETA CAE Systems, or its subsidiaries, may download the new software, examples and documentation from their account on our server. They can access their account through the "sign in" link at our web site. Contact us if you miss your account details. The Downloads menu items give you access to the public downloads. 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 folders named **"BETA_CAE_Systems_v23.0.0"** and **"KOMVOS_v23.0.0"** and are dated as of **July 19, 2022**. 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, download from the respective folders, the .sh file for Linux or the .msi file for Windows.

In addition to the above, optionally, the META Viewer is available to be downloaded for each supported platform.

The tutorials and the example files reside in the folder named "TUTORIALS". This folder includes the complete package of the tutorials and example files, and a package with only the updated ones.

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

Earlier software releases are also available in the sub-directory called "Previous_Versions" or in a folder named after the product and version number.