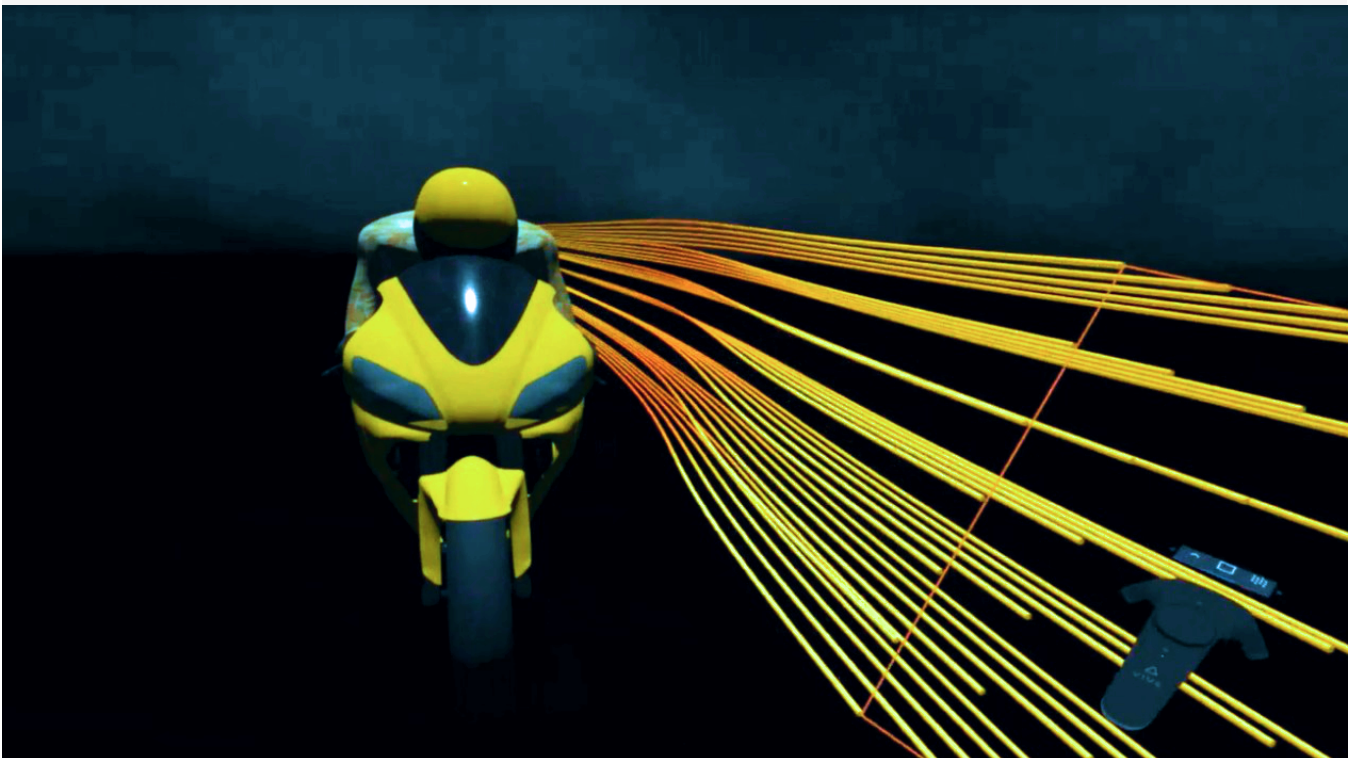


July 27, 2020

BETA CAE Systems announces the release of the v21.0.0 of its software suite



About this release

Consistently trying to streamline emerging trends and needs in engineering simulation industry, BETA CAE Systems proudly presents the release of v21.0.0 of its software suite.

Through an attempt to couple the past with your most recent expectations, v21.0.0 offers significant advancements in plenty of fields, providing exemplary user experience and a dynamic insight.

Do not miss:

- The boosted User Performance with the new ANSA Graphics Kernel.
- The augmented pre-processing potential with the advancements in ANSA VR.
- The progressing Optimization capabilities in ANSA, as well as in SOL200 area with EPILYSIS.
- The extended Report & Automation implementations for post-processing applications.
- The promising Machine Learning integration in KOMVOS through ANSA.

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Videos - Latest developments in BETA's suite



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New tools & Highlights

Python Development Platform

v21.0.0 release is based on Python version 3.8.1. This is a major upgrade, compared to the previous version Python 3.3 used in BETA suite.

Abaqus libraries for META removed from the installation package

The Abaqus libraries, required for the post-processing of Abaqus .odb files, are not included in the installation package anymore.

They are provided in the additional META External Libraries package (META Ext Libs v21.0.0) and can be optionally unpacked.

Elevating User Experience in ANSA

The new Graphics Kernel in ANSA provides a significantly enhanced graphics performance in terms of model handling (draw and update of graphic entities), as well as an impressively realistic transparency mode, including enhancements in the visualization of polygons/polyhedral. It is also accompanied by a new GPU metrics tool, placed under *Settings > Graphics*.

Apart from significant enhancements regarding the management of changes in the Modular Environment, the brand new user toolbars and the new coherent set of icons offer an elevating experience in this field.

Moreover, constantly providing effective solutions to aerodynamics problems, effortless model wrapping and Hextreme meshing are offered via our upgraded automatic leak detection and closure tools, achieving significant performance and accuracy enhancements.

Focusing on Optimization, enhanced pre-processing of a topology result can be achieved via the new Sculpting Tool, with the additional capability to smooth the optimum result and add material on regions.

Following META success in Virtual Reality, ANSA v21.0.0 presents extended VR functionality, covering areas such as Morphing and Collaboration, embedding handy features such as voice commands, and user-positioning.

Optimization gaining ground with EPILYSIS

The brand new v21.0.0 heads straight for uplifted optimization with the support of Laminates for SOL200 Multidisciplinary Optimization, as well as in-house formulation for multi-objective design problems. On top of that, noteworthy enhancements in EPILYSIS algorithms, such as the Contact algorithm, give boost to the precision and accuracy in engineering solutions.

Expanding post-processing capabilities with META

Acknowledging and further promoting report and automation post-processing needs and capabilities, through a brand new report-

dedicated Python API, new classes add tags in reports and find reports that match user's criteria. This goes along with other enhancements in this field, such as the ability to export a 3D Model in glTF format and embed it into a presentation slide.

Vast developments have also taken place in the NVH domain, and specifically in the Modal Response and FRF Assembly Tool, now solving modal components that contain poroelastic materials (PEM). Implementations have also been noted in the field of Frequency and Transient Response Analyses, with extended applications for Load-cases investigation.

Focusing on the area of aerodynamics analysis, apart from progressive support of more solver formats, such as Converge .h5 and multi-region decomposed OpenFOAM cases, CFD in META comes with a new, enhanced post-processing toolbar, offering improvements in results' calculation with extended functionality. Not to be missed, additional handy features, such as the trim section visibility control and the SPH distance criterion that filters visibility to particles located in regions with low particle densities.

Needless to mention, that such handy features are constantly being implemented in various domains of our software, revitalizing user experience. For example, in v21.0.0 themes and display styles of 2D plot windows can be saved and re-applied to new window/plots, with all their embedded fonts, background and axes color etc.

Furthermore, with the aid of a dedicated META Developer License, the new version offers the capability to develop user-script applications via META Python API, without acquiring a full META license.

Integrating Machine Learning in BETA products

One of the highlights of the new version is the integration of Machine Learning (ML) in BETA Software Products, specifically in KOMVOS through ANSA. It provides a powerful tool to engineers/designers in the early development stages of a vehicle, enabling what-If studies for CAD & CAE teams to examine the impact of certain design changes using ML practices.

From a closer perspective, KOMVOS v21.0.0 offers boosted user performance capabilities, providing handy features such as an advanced Search Filter for all entities, coupled with automated refresh of its GUI upon DM views update.

Making the most of Computed Tomography for further analyses

Promoting BETA Products interoperability, effortless update of material properties of an idealized volume mesh, based on a Computed Tomography (CT) scan, can directly take place through a brand new ANSA plugin, whereas effective stiffness of FE mesh captures the presence of cavities in castings or the varying density of bones.

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

New Documentation in ANSA

Plugins

- Tubes/Wires Mesh Generator
- Remove 3D Ribs
- HPM plugin
- RETOMO Material Mapping

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 21.0.0 are compatible and can be opened by META version 16.0.0 or later. To be readable by META versions earlier than v16.0.0, they have to be saved selecting the option "Version 16.0.0" or "Version <16.0.0".

Support for Mac OS has been discontinued.

Support for 32-bit platform 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 folder named "**BETA_CAE_Systems_v21.0.0**" and are dated as of **July 27, 2020**. **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 not included in the installation package anymore. They are included in the additional META External Libraries package (META Ext Libs v21.0.0) 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.