Altair
Release Notes

# Altair Inspire 2019.1

Altair Inspire version 2019.1 includes the following new features and enhancements.

## New Features

**Part Replacement**

Seamlessly replace an existing part with a new CAD model without losing your model setup. Altair Inspire automatically re-attaches existing loads, supports, connections, etc. so you can continue iterating uninterrupted.

**Video Recording**

You can now capture videos in addition to still images. This feature is available in the File menu under Screen Capture. Videos can be saved in gif and mp4 format.

**Joint Coupler**

Rotational and/or translational movements of connected parts in your motion model can now be coupled together with the Couplers tool. This tool works on a variety of rigid connections (joints, supports, implicit joints in motors and actuators, and springs). The By Joints option on the guide bar lets you select the entities that you want to couple together, and the microdialog lets you specify scale factors on the connections to achieve the coupling ratio you desire. Alternatively, you can use the At Free Joints option, which is useful in conceptual models that use primitive geometry (cylinders) as well as in geared applications where the Coupler tool is able to automatically compute the gear ratio from the number of gear teeth (or cylinder radii).

**Meshing Improvements for Motion Contacts**

The meshing operation for 3D solid parts in motion contacts has been updated to provide improved performance. Additionally, now you can specify the mesh resolution on a per-part basis. The Property Editor for parts has a Motion Contact category with new options to manually specify the Resolution (Very Low, Low, Medium, High, Very High), or you can continue to use the default mesh resolution via Autocalculate Resolution checkbox.

**Analytical Contact for Spheres and Ellipsoids**

Motion contacts now use shape identification to automatically determine whether any of the parts in the contact sets are either Sphere or Ellipsoid geometric primitives. If so, then geometric contact detection will be solved in its analytical form rather than being meshed. You may want to consider using geometric primitives whenever possible to take advantage of the improved efficiency of the solution.

## Enhancements

The following changes and enhancements have also been added:

- **Updated Mouse Controls**: You can now modify the mouse controls in the Preferences. The default mouse control for turntable rotation is now Shift + right mouse drag.
- **Materials Support for Unigraphics**: When importing UG NX (Unigraphics) files, Altair Inspire will now extract material properties.
- **Updated CAD Format Support**: Altair Inspire has been updated to include support for UG NX (NX 12), Catia V5 (R28), Pro E (Creo 5), and SolidWorks (2018).

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- **Show Output Steps Only for Motion Animation**: The Force Explorer now has an option to Show Output Steps Only when playing back motion analysis results that contain motion contacts. This is helpful when you want uniform time spacing between your playback output frames.
- **Maximum Integrator Order**: A setting for the Maximum Integrator Order is now available from the Run Motion Analysis window in the Advanced category under Solver Settings. This is the maximum order that the integrator can take. The default value is 5; higher orders lead to higher accuracy, but lower stability. In some applications, like intermittent contact, users may wish to override the default value and set it to a smaller value, like 2 (or 1).
- **Spring Limits Stiffness in N/m**: Units handling of stiffness for Spring Limits on Coil Springs has been updated to be consistent with what is done for the Impact collision type on motion contacts – namely that the entered Stiffness value is always in N/m units. This helps to ensure units consistency is maintained when changing Model Units for a motion model.
- **Angular Displacement Plots for Joints**: For the 2019.1 release, the convention for measuring angular displacements in the Local to 1st Part or Local to 2nd Part reference frame for Joints has been changed from PSI, THETA, PHI angles to AX, AY, AZ.
- **Altair 365 Run Status and Online Results Visualization:** When using Altair 365, you can now check the status of uploads and downloads, as well as viewing results remotely from the Run Status window.

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# Altair Inspire 2019.0.1

The following issues were resolved for Altair Inspire version 2019.0.1.

- Resolved a regression adding temperatures to a model. [IN-17573]
- Fixed an issue with incorrect material density conversion for MMGNMS units. [IN-17664]
- Fixed an issue where the Shape Explorer converts Hz incorrectly. [IN-17625]
- Added "(N/m)" units label to Stiffness property on motion contacts that was missing in Japanese translation. [IM-2214]
- Fixed an issue where icon and label text on the Create New Group button wasn't fitting properly in the French and German user interface. [IM-2227]
- Corrected reported licensing timeout problem seen when running complex motion contact models. [INU-4263]

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## New Features

**Units-Based Licensing**

Altair Inspire now supports units-based licensing for both solidThinking and HyperWorks customers. To activate your license, select **File** > **Licensing** and enter your credentials in the License Setup window. solidThinking customers have the option of using Offline Mode so you can continue to run the application when you are not connected to the internet. Details about how to activate your license are available in the *Licensing and Installation Guide*.

**Video Recording for Motion Animation**

Motion animations can now be captured in mp4 format. Use the Play and Record button on the Animation toolbar to start and stop the recording. Files are automatically saved in the Windows Documents directory under Altair\videos. The default is continuous recording, but the recording will stop automatically if the playback option is set to Once rather than Loop.

**Support for Milliseconds in Motion Analysis**

The milliseconds time unit is now supported for motion analysis: You may use either MMKNMS or MMGNMS units sets where the units of time are milliseconds (ms). The Profile Editor, Run Settings window, animation toolbar, call-out plots and pop-out plots are now able to show time units in milliseconds. In addition, the Output Rate now reports the value in kHz when the time unit is ms.

## Enhancements

- **Remote Job Submission**: The remote job submission setup process has been streamlined. Refer to the *Altair Inspire Remote Job Submission Guide* for more information.
- **Customizable Front View**: The direction of the front view can now be customized in the Preferences under **Inspire** > **Modeling Space** > **Front View**.
- **Porosity Tool**: The Cast tool on the Manufacture ribbon has been renamed the Porosity tool, and is now available as part of Altair Inspire software without an additional license.
- **Thinning Tool**: The Stamp tool on the Manufacture ribbon has been renamed the Thinning tool, and is now available as part of Altair Inspire software without an additional license.

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