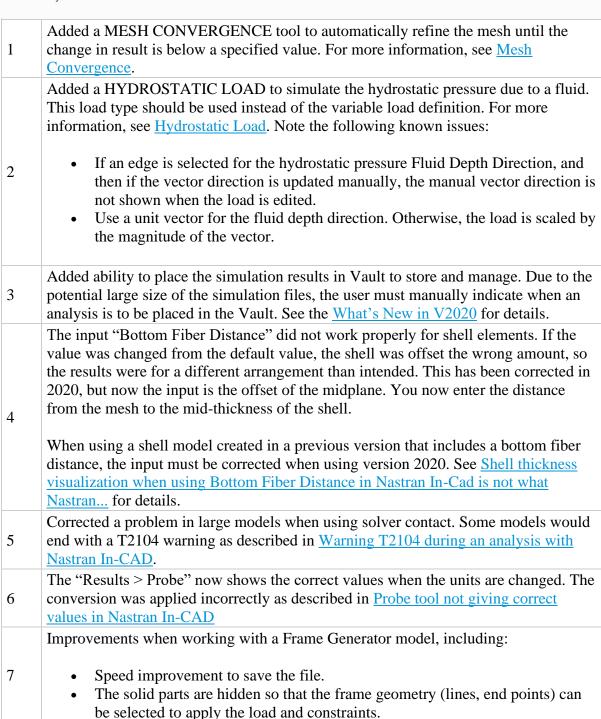
## Inventor Nastran 2020 list of changes

Inventor Nastran 2020.0 is the new name for Nastran In-CAD.

Inventor Nastran is now available to install. From manage.autodesk.com, locate the Product Design & Manufacturing Collection. Click "View items" and locate Inventor Nastran. (Of course, you need to have Inventor 2020 installed before installing Inventor Nastran.)

Here is my list of changes, gathered from the What's New, Release Notes, and issues addressed by development (which includes changes to "In-CAD" and to the Nastran solver that are relevant.)



	The original sketch from which the frame was generated can no longer be selected. Previously, the sketch could be selected which was causing problems described in <a href="Load not applied at valid FE">Load not applied at valid FE</a> mesh location when using Frame <a href="Generator interoperability with Nastran">Generator interoperability with Nastran</a>
8	The contour legend is now shown even when the maximum and minimum results are the same value.
9	Correct results given when a bolt connector has a preload and the analysis is solved with the PCGLSS solver. See <u>Bolt preload gives wrong results with Nastran</u> for details.
10	Input for material properties, loads, constraints, and so on, now use the unit system set in the Units branch of the model tree. Previously, dialogs would use the Inventor Document units depending on how the dialog was activated as described in <u>Load</u> units are not the same as analysis units in Nastran In-CAD.
11	Input for shell element thickness works when using a comma for the decimal separator. Previously, the value was not saved correctly as described in <a href="Shell thickness input does not work in Nastran In-CAD">Shell thickness input does not work in Nastran In-CAD</a> .
12	The default list XY Plots (created for some analyses, such as Normal Modes) will be listed when a previous analysis is activated. See <u>List of XY Plots is missing in Nastran In-CAD</u> for details.
13	Orthotropic materials allow Poissons ratio outside the range of 0.0 to 0.5 for orthotropic material.
14	Stress linearization now shows the results for the current subcase. Version 2019 only showed the results for the last subcase.
15	Fixed E5004 error (stiffness matrix singular) or E5051 warning (excessive solution) that occurred with orthotropic materials when using the PCGLSS solver.
16	Temperatures read from a heat transfer analysis to a stress analysis are now converted to the current unit system. See <u>The results of a thermal stress analysis in Nastran In-CAD are inaccurate when reading temperatures</u> for details.
17	The input table for temperature dependent modulus of elasticity (E) is now identified as load scale factor versus temperature. The input is a multiplier for the entered modulus. See <u>Displacement wrong when using temperature dependent modulus in Nastran In-CAD</u> for details.
18	When loading a material from a user-defined library, the stress-strain data for a nonlinear material is shown properly. See <u>Loading non-linear material database fails</u> to correctly display stress-strain curve in <u>Nastran In-CA</u> for details.
19	The XY Plot of heat rate through elements now includes all faces. See <u>Heat rate</u> through element is from one face only in Nastran In-CAD for details.
20	The input table for temperature dependent thermal conductivity (k) is now identified as load scale factor versus temperature. The input table is a multiplier for the entered conductivity. See <a href="Thermal results are wrong when using temperature dependent conductivity in Nastran In-CAD">Thermal results are wrong when using temperature dependent conductivity in Nastran In-CAD</a> for details.
21	Correct velocity results are shown at midside nodes on bonded faces. Previously, the results were shown as 0. See <u>Velocity results are zero at points on a contact face in Nastran In-CAD</u> for details.
22	Analysis fails with Fatal Error E5073 if normal modes analysis is run after the analysis is changed from shock/spectral response analysis to normal modes analysis.

23	Corrected problem with reading pressure loads from Autodesk CFD analysis.
24	Improved temperature calculation in a heat transfer analysis when using parabolic elements to minimize temperatures above or below the ambient.
25	New iLogic commands to create or deleted analyses and subcases.
26	The files in the InCAD\FEA folder associated with an analysis are deleted when the analysis is deleted.
27	The MFLUID command now works with the Lanczos extraction method. See <u>How to include fluid in a modal analysis in Nastran</u> for details.
28	The CONSTRAINTS command on the ribbon provides direct access to Pin and Frictionless constraint types. (They can still be accessed from the dialog as before.)
29	The acceptable input on the Parameters dialog have been updated for some variables, such as CONTACTSTAB.
30	Multi-axial fatigue analysis with multiple loads gave incorrect results in version 2019. See the forum post Multi axial Fatigue Analysis not displaying the dynamic area results. (added August 1, 2019)