FEMAP v2019.1 MP 1 New Features and Corrections

Updates and Enhancements

Interfaces - Nastran

- Added ability to generate buckling subcases synthetically if no STATSUBs have been defined for an analysis case and the analysis case is not referenced by another case as a STATSUB. In addition, any analysis case generated using the "MultiSet" functionality of the Analysis Set Manager, which also meets the criteria described in the previous sentence, will also synthetically generate buckling subcases, as it did in previous versions of FEMAP.

Interfaces - ABAQUS

- Added read support for *DISTRIBUTION and *DISTRIBUTION TABLE entries. Currently supported variable are ORIENTATION and ANGLE. ORIENTATION gets translated to material angle on the element and ANGLE becomes the layup angle for the ply. This will create property and layup for each laminate element, as compression or consolidation of layups is not performed.
- Added read support for *COUPLING and *DISTRIBUTING entries, which are translated to RBE3 elements when certain specifications are met on the entries. Independent nodes must be specified as *SURFACE using NODES, while Dependent (reference node) must be specified as a single node, although ABAQUS lets you specify a set (NSET) In addition, the COUPLING type must be CONTINUUM and the Weighting must be UNIFORM (at all nodes = 1.0 for all 6 components).

Corrections

General

- Corrected issue that caused FEMAP to exit unexpectedly when saving the model file when the notes section of the Explorer Tooltip text contained more than 9 lines (PR# 9521407).

Geometry

- Corrected issue with the Geometry, Curves - From Surface, Split at Locations command which allows it to properly split a surface, as it did in FEMAP versions prior to 12.0.
- Corrected issue with the Geometry, Solid, Fillet command where redundant solids points were being removed from the entire solid being filleted instead of only the newly created solids points that are redundant.
- Corrected issue where partial surfaces of solids were not considered when stitching, which could make it impossible to automatically include copies of existing surfaces and execute a stitch.

Graphics

- Corrected issue which occurred when using the File, Picture, Copy command when the screen resolution was scaled, which caused text/labels which are not being drawn with Performance Graphics to not be scaled. In addition, corrected issue where the width of the contour legend when it is vertical and height when it is horizontal are also not being scaled correctly (PR# 9520223).

- Corrected issue where parabolic edges on shell elements were not being displayed correctly when previewing.
- Corrected issue where a connection region is drawn or previewed with extra faces on the elements in the connection region when "Elements with no results" is set to "1..Hide" for "Contour/Criteria Style" in the View Options dialog box.
- Corrected issue when using the Mesh, Editing, Interactive command which caused split elements to not appear immediately.
- Corrected issue where the graphics window may not update after closing the dialog box to complete the Magnify, Pan, or Rotate command on the View menu, when only the value of an edit field was changed.

Performance Graphics

- Corrected issue where nodes are not drawn when the "Elements as Free Edge" option is enabled in the "Include In Dynamic Rotation" section of the "Graphics" tab of the Preferences dialog box.
- Corrected issue which caused the material direction to be displayed incorrectly for quadrilateral elements when contour or criteria were displayed.

GUI - Dockable Panes

Meshing Toolbox - General
- Corrected issues where the mesh was not updating properly when moving points, curves, or surfaces when using various tools.

PostProcessing Toolbox - Contour Tool
- Corrected issue where the colors for Contour Arrow could not be edited in certain circumstances.

Interfaces - Simcenter Nastran (formally NX Nastran)

- Corrected issue that prevented SOL401/SOL402 axisymmetric element stress and strain from being read from the OP2 file when imported or attached (PR# 9523758).
- Corrected an issue that would cause SOL402 nonlinear dynamics subcases to not properly import if "ANALYSIS = DYNAMICS" was used in the case control instead of "ANALYSIS = TRANSIENT". Also, updated the translator to only write out "ANALYSIS = DYNAMICS" for SOL401/SOL402 nonlinear dynamics subcases.
- Corrected an issue that exported the incorrect value of ITEREF on the NLCNTL2 card. This would occur if ITMA was defined on the NLCNTL2 entry of an imported input file with a non-default value and did not also include a value for ITEREF.
- Corrected issue that caused illegal formatting of the NLCNTLG bulk data entry when multiple parameters were specified as non-default values in the Multi-Step Global Control Options dialog box in the Analysis Set manager (Analysis set to "28..Multi-Step Nonlinear Kinematic").
- Corrected issue that prevented TABLEDi entries from being written for the CFVE contact control parameter for SOL 402 contact properties
- Corrected issue where design objective response specified by DESOBJ case control command may not be read correctly if SCSET or SCFUNC describers were used in the case control entry.

- Corrected issue where DRESP1 cards created by an Element Optimization Response with Category set to "Strain Energy" would not contain the appropriate entry for the PTYPE field.

Interfaces - ANSYS

- Corrected a number of issues when reading .cdb files, including improved performance when reading bf and bfe entries and ability to read different types of fixed formats.

Interfaces - LS-DYNA

- Corrected issue which would cause FEMAP to unexpectedly exit when exporting a model which had a value specified for Wz in the Rotational Velocity section of the Create Body Loads dialog box for the active Load Set (PR# 9516990).

Meshing

- Corrected an issue when using either the Mesh, Reflect, Element or Modify, Reflect, Element command which could cause an extra property to be created, then the extra property would be used by the reflected elements. This issue could occur when reflecting any planar element types, other than Plate or Plane Strain.

Output and Post-Processing

- Corrected issue where certain ply-based Y normal strain output from laminate elements could be marked as non-linearly combinable in linear output sets. This could create misleading messages when trying to combine output sets containing these vectors which were not categorized correctly.
- Corrected issue when plotting transformed results on a combination of pyramid and higher order elements that may possibly print a message about insufficient results to the message window. The message was in error and results were not affected.
- Corrected issue by removing the CSys ID column from the Data Table when using the List, Output, Results to Data Table command to list results for elemental output. This column was not used for elemental output and could be misinterpreted as a column indicating element output orientation.