FORUM 8

Press Information

March 2011

Engineer's Studio – New Features & Improvements

Engineer's Studio is an award-winning 3D FEM product featuring material and geometrical nonlinear analysis . Engineer's Studio is the next-generation of software that extends FORUM8's award winning UC-win/FRAME(3D) into full Finite Element Analysis using the Mindlin Plate Element. Engineer's Studio is also the only commercially-available software that fully integrates the original Maekawa Nonlinear Concrete Model.

New Features

- It is now possible to define the effective reinforcing ratio for a reinforced concrete plate section layer in the X & Y directions independently. Previously only the gross ratio was input and this was adopted internally as the effective ratio. Some situations were difficult to model with this limitation.
- A new CAD command was added that creates multiple rigid elements, spring elements or frame elements using an offset and a direction from existing nodes. For example, it is useful for quickly generating joint regions between plate elements. It produces an effect like a kenzan used in Japanese ikebana.
- A new command was added for editing rigid bodies on the main 3D CAD view. Child nodes can be added and removed by direct graphical selection. This extends the editing abilities provided by the table editor.
- Docked tab sheets can now be closed directly by clicking an "X" button on the tab.
- Added support for panning directly from the middle mouse button.
- "Contour Text Color" and "Contour Line Color" were added to the System Options-->Color Setting. These are for the legend on the result form 3D graphical view.
- The order of nodes resulting from an element division command was changed from descending to ascending.
- Warning message is shown if member length is less than 0.01m.
- When selecting a row in the result table for plate element results the view parameter forms are now updated correctly when the magnitude of the out-of plane shear force cell in the table is clicked.
- The result display response time was improved for large models in load case analysis. (The model used in testing was over 40000 nodes.)
- When some named objects were copied and pasted several times, the auto unique name generator created very long inconvenient names. (e.g. Nodes). The name generator now strips off incoming trailing numerical characters before creating a unique name by attaching a new number. The new number starts as the list count.
- Command property editors sometimes appeared to the left of the main form when the editor was wider than the navigation tree. In these cases the editor will now align with the left of the main form.

Improvements (Bug Fixes)

Input / Output

- A section containing reinforcing could sometimes generate an error after merging.
- When nodes were deleted as isolated nodes, they were not removed from the groups.
- There were English captions on the command prompt panel for the commands for the creation of frame and plate elements. The localisation has been updated.
- Access violation error occurred when Play button was clicked after Strain Performance Criteria was selected.
- An unexpected error occurred during an analysis with two runs when the runs had different pick-up keys. Also an access violation error sometimes occurred during analysis when the run editor form was docked on the main window.
- Influence line result and check point result table was not displayed in result mode.
- An error occurred when the order of the load cases was changed or a new load case was added in the Load Case Editor form when the model had Dead Load(St.) or Earthquake Load and had Load Configuration data for design calculations.
- Under certain conditions, the printed reports of plate contour figures had incorrect colours.
- In a large model changing the static earthquake factor in the Model Setting editor created long delays in updates of the screen. Improvements have been made such that if loads are not being viewed graphically the response is much better than the previous version.

Calculation Results

- In some models with over 3000 nodes the 32bit solver occasionally failed and reported an unknown error. This problem has been fixed.
- Plate actions could be set to zero in the contour plots when plate sections with material nonlinear layers were analysed with the global material linear switch on.

File I/O

- If a file was saved after spring elements in a group were deleted, the file could not be reopened. The issue has been resolved.
- If a file was saved after input data for section calculations was deleted, the file could not be reopened. The issue has been resolved.
- The program failed to read a f3d file that include a section that used a "Reuse Outline" element type.
- In a file where reports including sub envelope load cases and pickup keys had been deleted, an error occurred when saving the file. The issue has been resolved.
- An error occurred when a non structural material was assigned to a numerical section.

Help file

- The meaning of Epsilon_a on the fibre member result form was added to the help file.

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