This is a short guide on exporting a deformed shell-element mesh to CAD. I'm exporting an STL file.

The example model I have is a square plate that has the following deformed shape:



The first step is to Plot the deformations as a vector:



A Vector field is then created which will be used to deform the original mesh to the final deformed shape. To do this, the vector field must be shown on the screen and the settings on the Fields menu should be as shown below:



Create / Spatial / FEM with the "continuous" option takes a result shown on the screen and create a field from that. If set to "Scalar", a Fringe-plot is used while for "Vector" a vector-plot is used.

Now use this field to offset the nodes to the final deformed shape. Go to "Utilities" -> "FEM-Nodes" -> "Node Modify By Field ...". Select the field and group to apply to, then "Apply":



The mesh is now changed to the deformed result. To export an STL you need to have 3-noded tri-elements.

To convert second order into first order elements (if that was what you used), use the "Modify" / "Element" / "Edit" option (on the ELEMENTS form), switch on "type", select the element type you want (Quad4 or Tri3 depending on whether you started with Quad-8 or Tri-6 elements), select the elements to change and press apply.

To convert from Quad-elements to Tri-elements, use the "Modify" / "Quad" / "Split":



Last step is to export an STL file. "Utilities" -> "File" -> "Export/Import STL files". Change to "Export", select the elements to export and choose a file-name:

