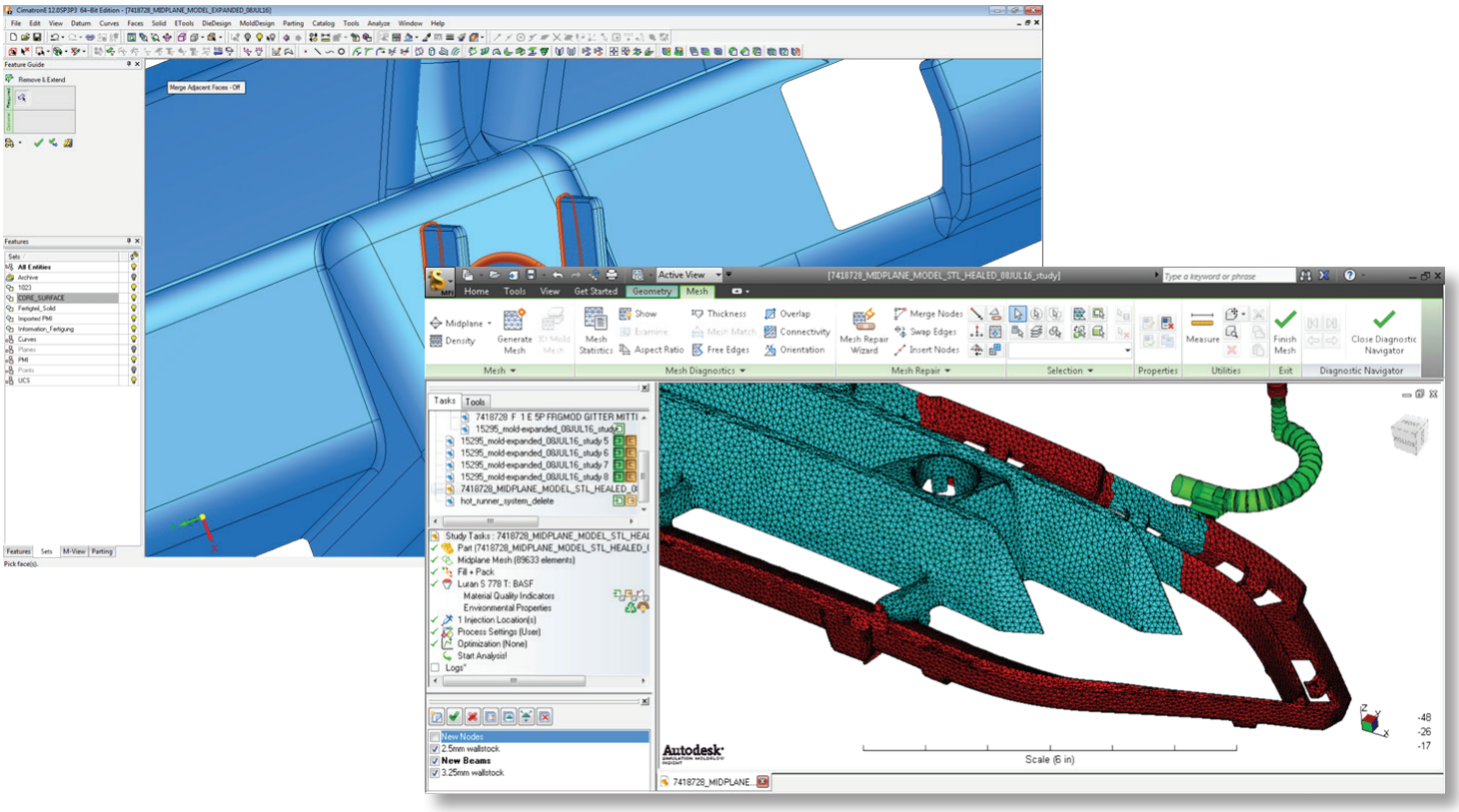
Proper innovation



Proper Innovation is investigating a mid-plane mesh generator for 'Autodesk Moldflow Insight' that is synchronized with Cimatron's QuickSplit functionality. The traditional Moldflow model generation is classified as 'dual domain mesh' which is 300,000 plus elements and takes approximately 15 hours to run a single analysis to define gating. This process may take several attempts to balance internal cavity pressures and ensure structural integrity of our highly engineered tooling. An alternative modeling method is available thru Moldflow and involves 15 to 20 hours of manual modeling, but cuts the analysis time by 90%. The one-dimensional method is referred to as a 'midplane mesh' and consists of a single sheet surface representing a prescribed part thickness.

With the help of integrated Cimatron tools, the midplane mesh is reduced to 90,000 elements, modeling time of 4 hours, and cuts the run time to 2 hours. Simulation accuracy is within 95% of a 'dual domain mesh' on product with uniform nominal wallstock across the entire part. Listed below is the outlined procedure for this process to create a 'midplane mesh' from 3D geometry utilizing tools within our current Cimatron software package.

1). User imports model and establishes die vector.
2). Cimatron splits model cavity to core thru UCS function.
3). User has the ability to review each individual half, and defines which half is preferred.
4). User defines 'special product features' that are critical and require manual splitting (slides, lifters, retractors).
5). Cimatron separates 'special product features' and allows for defining of individual UCS vectors for more precise feature splitting.
5). Cimatron deletes unused half, stitches, and heals usable half to within 0.001".
5). User defines minimum allowable radius.
6). Cimatron selects and removes radii less than minimum radius.
7). User is allowed to manually manipulate the remaining surfaces and chooses to export.
8). Cimatron exports .*stl model in mold position with defined filename.

The procedure is being tested internally to determine overall return on investment. Refinement of this process will require some programming assistance from our ToolStats group. There is a high level of excitement when our engineering and programming groups converge on an innovative concept. I can't wait for the next breakthrough.

To all Proper Group Associates, please enjoy the next few weeks. We are bursting at the seams with new work just in time for the fall and winter months.

Mike Tabbert