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| MxD 14-01-07                | Category: Quoting Process, Engineering Change   |
| Title:                      | Automated Manufacturability Analysis Software “ANA”   |
| Completion Date:            | 2017-08-15  |
| Project Team:               | Iowa State University, MFG.com, North American Die Casting Association, The Lucrum Group, Pennsylvania University (PSU), University of Alabama Birmingham, Tech Soft 3D Inc., American Foundry Society, Deere and Company |
| Coordinator Contact:        | Matt Frank<br>mfrank@iastate.edu  |
| For Additional Information: | If you are a member of MxD (formerly DMDII), go to <a href="https://portal.dmdii.org/">https://portal.dmdii.org/</a> .<br>If you are not a member of MxD, contact Tyler Vizek (Tyler.Vizek@mxdusa.org).                   |

**Summary:**

It is well known that early design decisions limit manufacturing options for a final component and drive the majority of the final cost. Currently, feedback from a potential manufacturer is often too late in the design process. Many existing DfM tools assume the designer knows what “M” they are after, ask for considerable detail, and/or require considerable time and skill to operate. In summary, we lack a simple digital link to the novice designer during the early conceptual design stage.

The project resulted in a new software platform called ANA, with modules for machining, casting, die casting, and welding. The ANA manufacturability analysis software provides early-and-often feedback to guide the component being designed to more manufacturable characteristics in general. ANA also provides a base package with an initial set of process options and an ability to expand to many more in the future. The software allows designers to view iterations of their design over time, compare against different iterations, and compare across manufacturing options. Output can be read on the dashboard or outputted as shareable 3D pdfs. The other version being offered is a software add-in for CAD, currently Solidworks. The add-in is integrated in the functions of Solidworks, where the user’s design iterations are sent to ANA upon saving, or upon request. A video tutorial of the ANA software is available to MxD members.