

MAHLE

Streamlining the Simulation Reporting Process

MAHLE is a Tier 1 automotive systems supplier based in Stuttgart, Germany, that employs over 64,000 staff across the world. Analysis plays a significant role in the development of new components and systems to test and improve their performance. However, the analysis of these components generates a huge amount of simulation data which is used to generate project reports. This reporting process can be a slow, manual process that ties up a great deal of the engineering team's time that could be better spent investigating the results. The company wanted to explore ways of streamlining its simulation results reporting process when developing new pistons and connecting rods.



solution

As long time users of Altair's HyperWorks suite of simulation tools, MAHLE collaborated with Altair ProductDesign to investigate the problem. Altair ProductDesign's team suggested an implementation of the Automated Reporting Director (ARD) to help MAHLE streamline reporting activity. ARD is a configurable and customizable reporting solution which is embedded in HyperView and loops over all defined groups and load cases, creating a single report page for each combination.

ARD automates the detection of result maxima or hot spots, best view selection, creation of notes and legends, and highlights the most interesting results in an interactive tab. The solution is flexible, allowing the analyst to step through each page before exporting it into PowerPoint or another desired format. Through an intuitive user interface, ARD allows the analyst to post-process results with given criteria, generate interactive overview result tables highlighting critical results, compare results between model iterations, and export results using preferred, customizable reporting templates.

result

A close collaboration was forged between MAHLE and Altair ProductDesign to create the automated reporting solution. While Altair ProductDesign developed the code, MAHLE described the current process and reporting requirements to ensure business alignment and an effective result. Previously, users had to create a HyperView session, adjust all the pictures, snap a picture of each desired view, bring the visual assets into PowerPoint, crop and place, go back and create call-outs, and re-examine results to create notes for the report; this is now a push button operation. Using ARD, MAHLE has successfully reduced time spent on non-engineering tasks, enabling CAE analysts to better utilize their time as engineers - yielding more analysis and better design.