

PRECISION TOOL DESIGN & DEVELOPMENT

Amara Raja Energy & Mobility (ARE&M) approached with Mangal Industries Digital Engineering Solutions team for the design and development of crucial stamping tools, that are essential in battery manufacturing.

PROBLEM STATEMENT

In battery manufacturing, a stripper plate plays a pivotal role in removing the lead sheet from the punch and holding and guiding it during press operations. However, during testing, the team noticed recurring failures with cracks at crucial points. Conducting a root cause analysis, we aimed to devise a resilient design that meets all specified criteria."

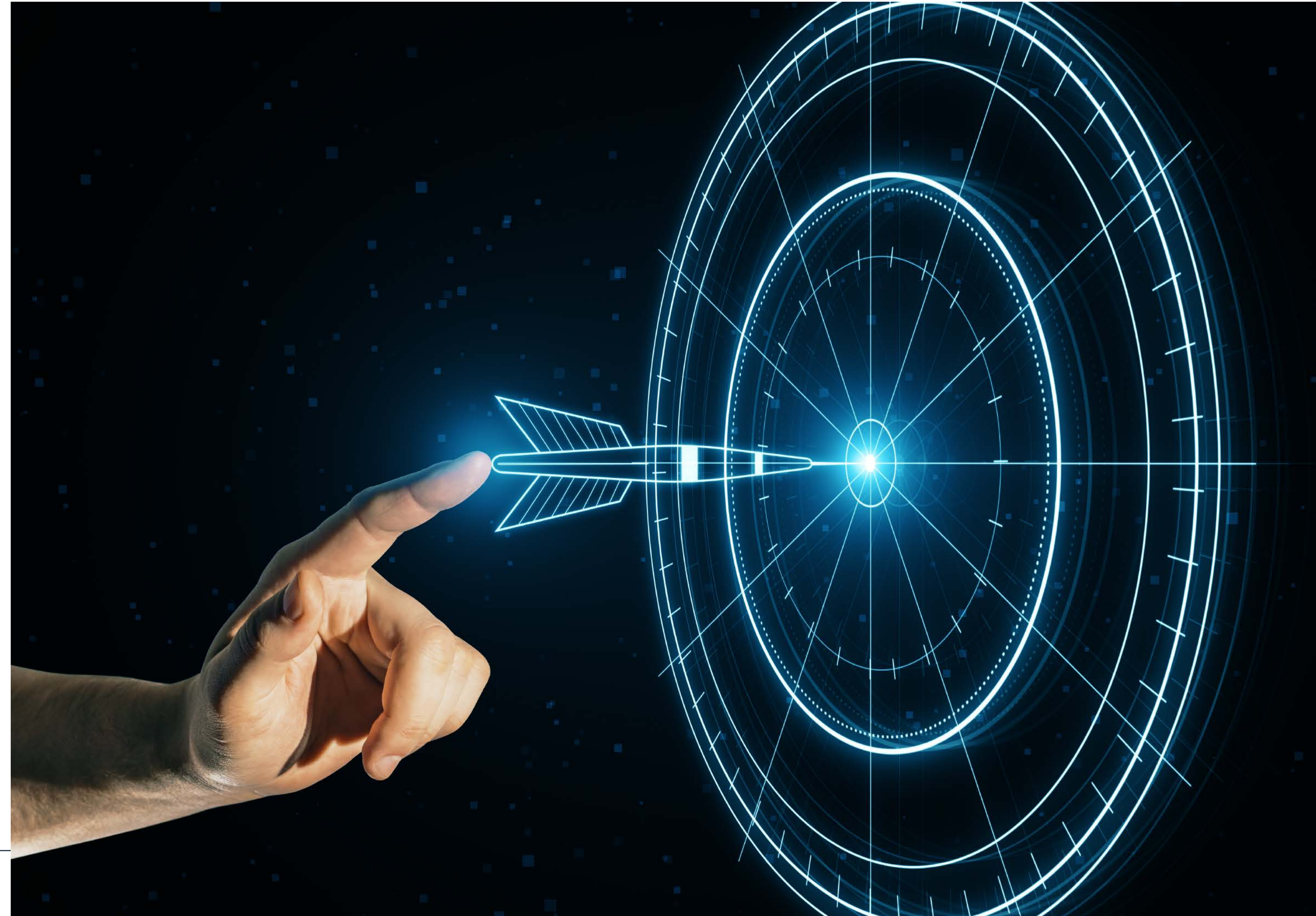


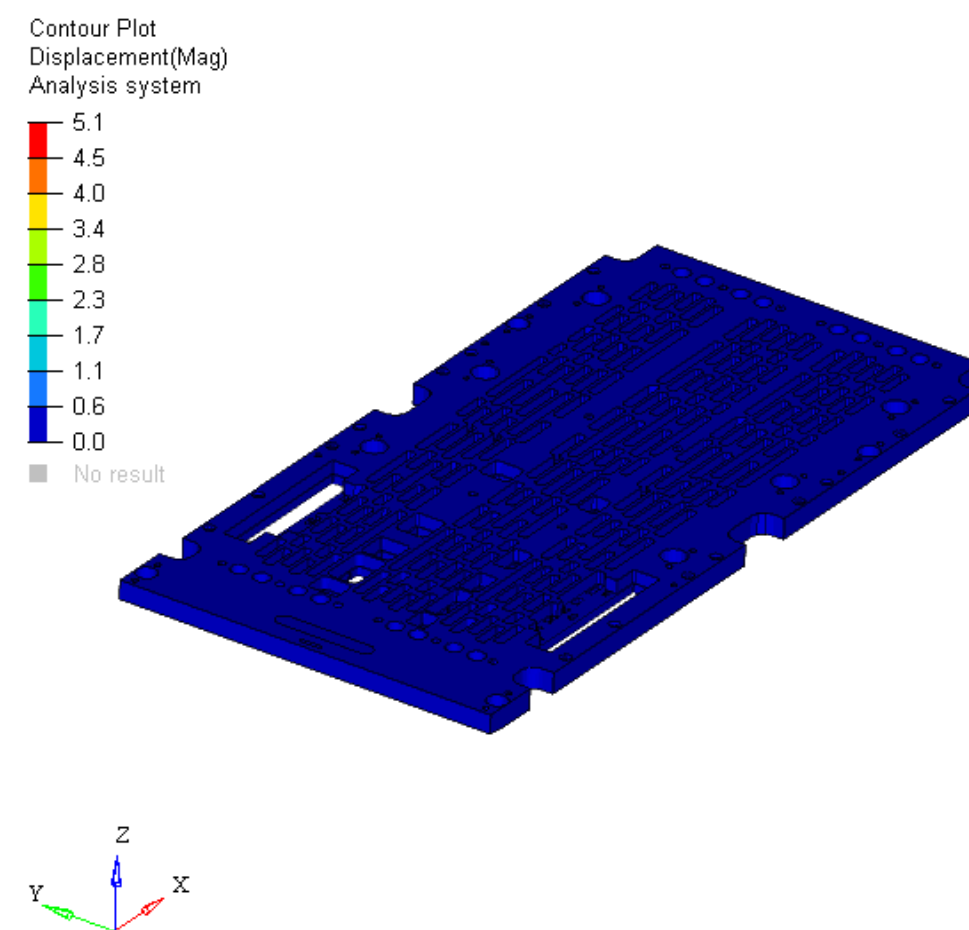
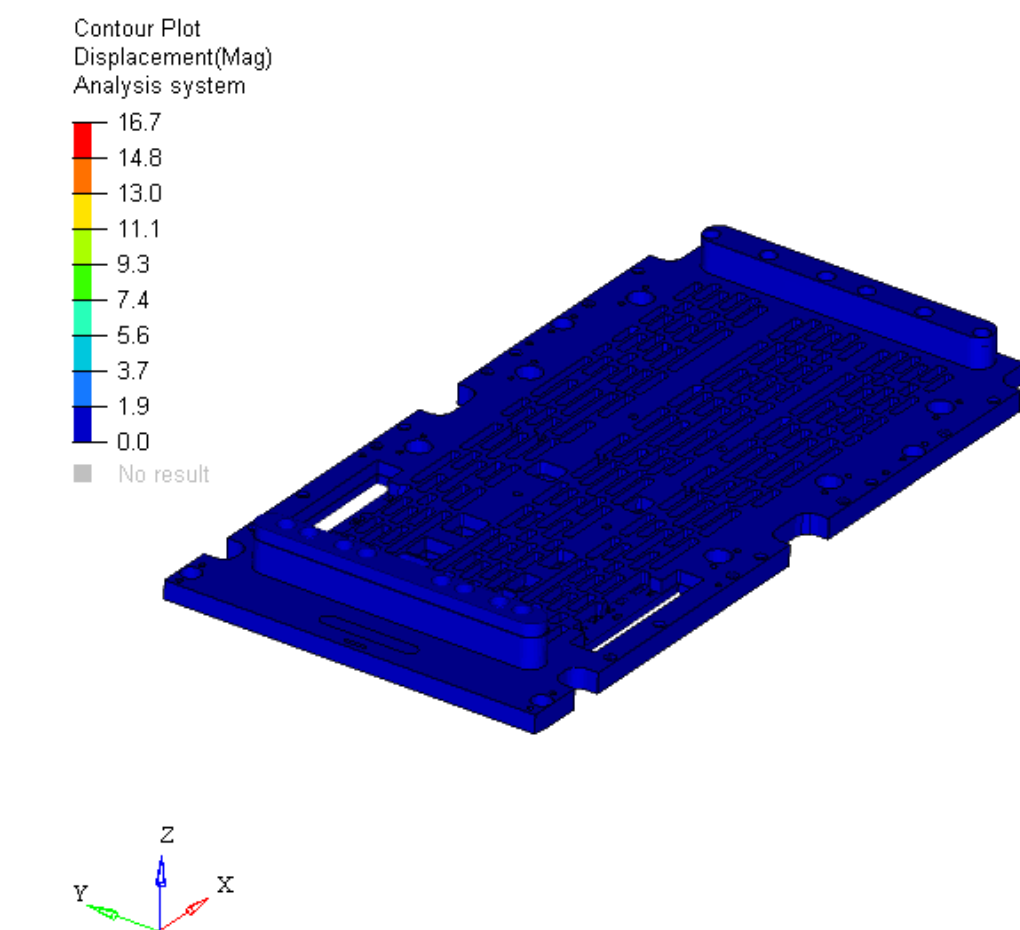
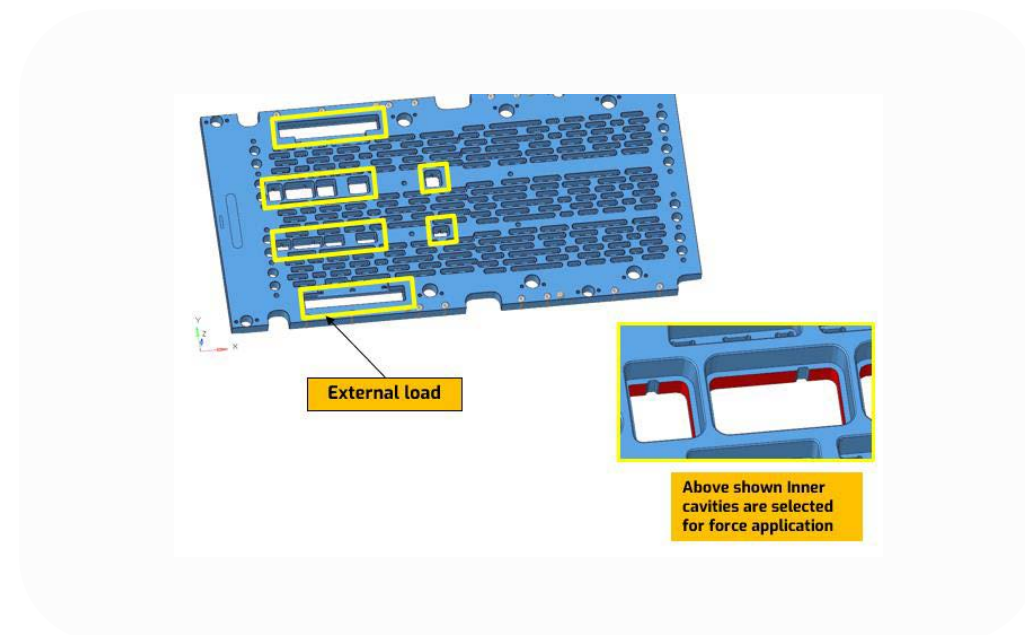
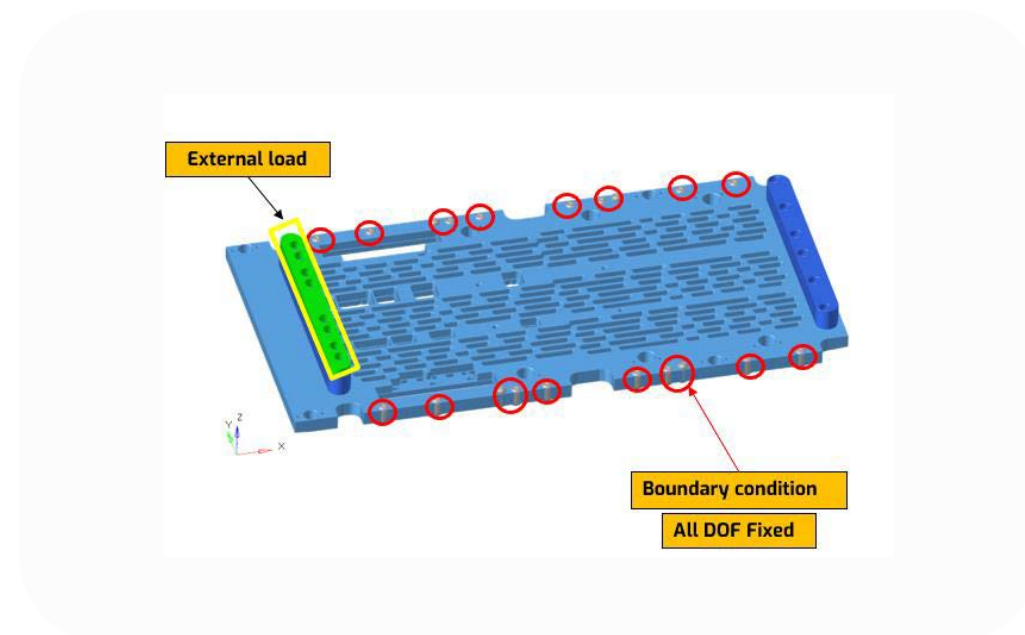
OBJECTIVE

We aim to investigate the effects of two crucial factors: load application and material hardness, utilizing digital technologies. Subsequently, refining design proposals based on the findings to enhance overall performance.

APPROACH

Optimization studies are carried out by applying a maximum punch load of 200 tonnes at various locations on the stripper geometry and testing different material hardness levels.





OUTCOME

After thorough analysis, we determined that the failure was mainly due to the material hardness rather than the applied load. Subsequently, we focused our efforts on designing an optimal stripper, leveraging digital simulation tools. This approach allowed us to expedite the testing and validation process significantly, leading to a more efficient and resource-saving outcome.

Ready to revolutionize your manufacturing processes and drive towards excellence? Reach out today to explore collaboration opportunities.

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