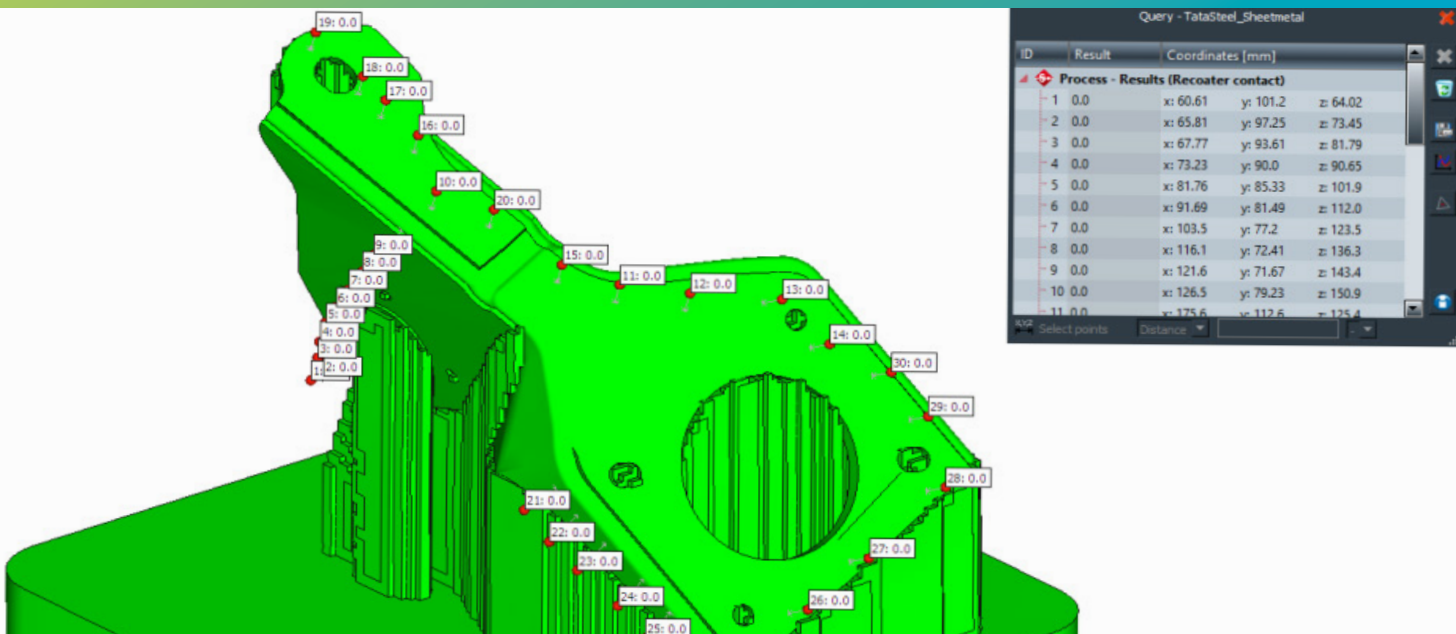


# Design validation for highly efficient Additive Manufacturing

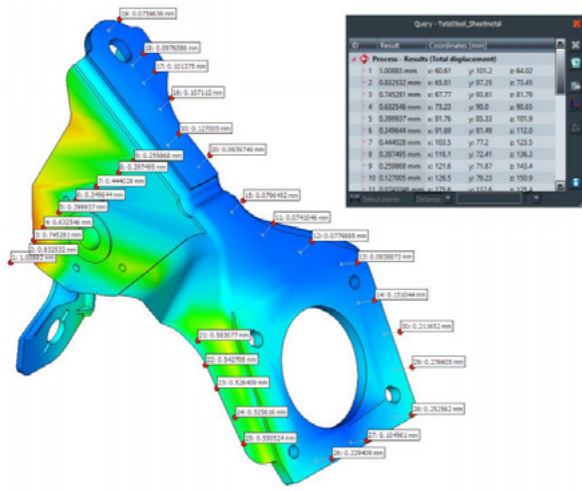
MSC Apex Generative design and Simufact enable Objectify Technologies to validate the efficient additive manufacturability at the early design stage.



**The Objectify team benefited greatly from the versatility of MSC Software and its ability to match test results to a high degree of accuracy.**

Objectify Technologies is India's only in-house metal and polymer Additive Manufacturing Engineering Service Provider (AM-ESP) with expertise in Aerospace, Automotive, tooling, white goods, and medical component building and consulting. The company aims to drive widespread acceptance of Additive Manufacturing / 3D printing across all industries and the supply chain to become a flag bearer of information on Additive Manufacturing.

The Objectify Technologies team works with R&D and procurement teams across various sectors to provide the right fit part for testing. Further, a small batch of the component is created for further scrutiny before it is mass-produced. The company has worked with notable tier-1 companies in Aerospace, Automotive, and space technology.



## Validating design for Additive Manufacturing

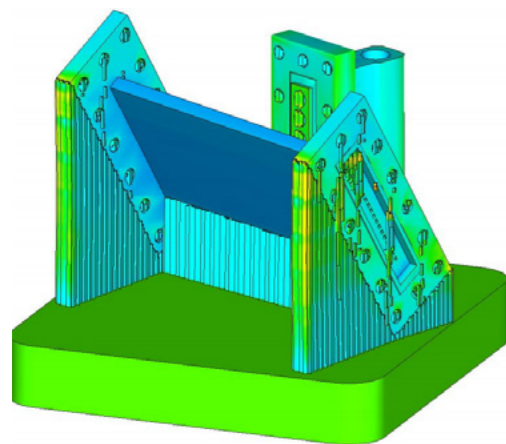
The team was facing issues around data complications due to simulation. There were also machine feed issues since multiple applications needed to be used in succession before the part could be sent for the build. This posed a challenge since different applications supported different file formats and dimensional changes.

With the emergence of rapid manufacturing processes, there is growing demand for faster simulation solvers as well as ways to validate simulation. This helps get approvals quicker for better builds.

MSC Software helps the Objectify team get a basic insight into their current hypothesis in Powder Bed Fusion (PBF) technology. With Simufact, the team can validate the assumptions and criteria for building the correct part at the design stage before investing in printing activity.

This helps save costs and minimises time lost due to build failures. It also enables the team to optimise the build in line with requirements. Insights into stress concentration and failure mode analysis can help the implementation of the production process.

MSC Apex Generative Design helps Objectify generate detailed and highly complex structures that additive processes can manufacture.



Key highlights:			
Product:	Simufact and MSC Apex Generative Design		
Industry:	Additive Manufacturing		
Benefits:	Gain insights into material behaviours in real-time		

## Saving time and cost with quick validation

The Objectify team benefited greatly from the versatility of MSC Software and its ability to match test results to a high degree of accuracy. This helped Objectify save time and money and resulted in considerable Return on Investment (ROI). It also allows the company to deliver parts well in advance of deadlines and helps serve customers better, due to the increased efficiency of data processing.

Simufact and MSC Apex Generative Design provide the company with an added edge for scientific approaches to topology optimisation and data preparation for the laser powder bed fusion process.

Objectify has already used MSC Software to simulate about 79 projects. The application package has helped Objectify greatly to understand orientation, minimise support requirements, help manage residual stresses, and gain insights into material behaviours in real-time. The team is well-equipped to understand machine capacity as well as build orientations and strategy to ensure minimum warpage, powder loss, and build failures.

In the future too, Objectify will continue to understand the microstructure level changes on a build and replicate them in the simulation package for an even better final product.



Ankit Sahu, CEO and Founder at Objectify Technologies Pvt. Ltd



Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

MSC Software, part of Hexagon's Manufacturing Intelligence division, is one of the ten original software companies and a global leader in helping product manufacturers to advance their engineering methods with simulation software and services. Learn more at [mscsoftware.com](https://www.mscsoftware.com). Hexagon's Manufacturing Intelligence division provides solutions that utilise data from design and engineering, production and metrology to make manufacturing smarter.

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