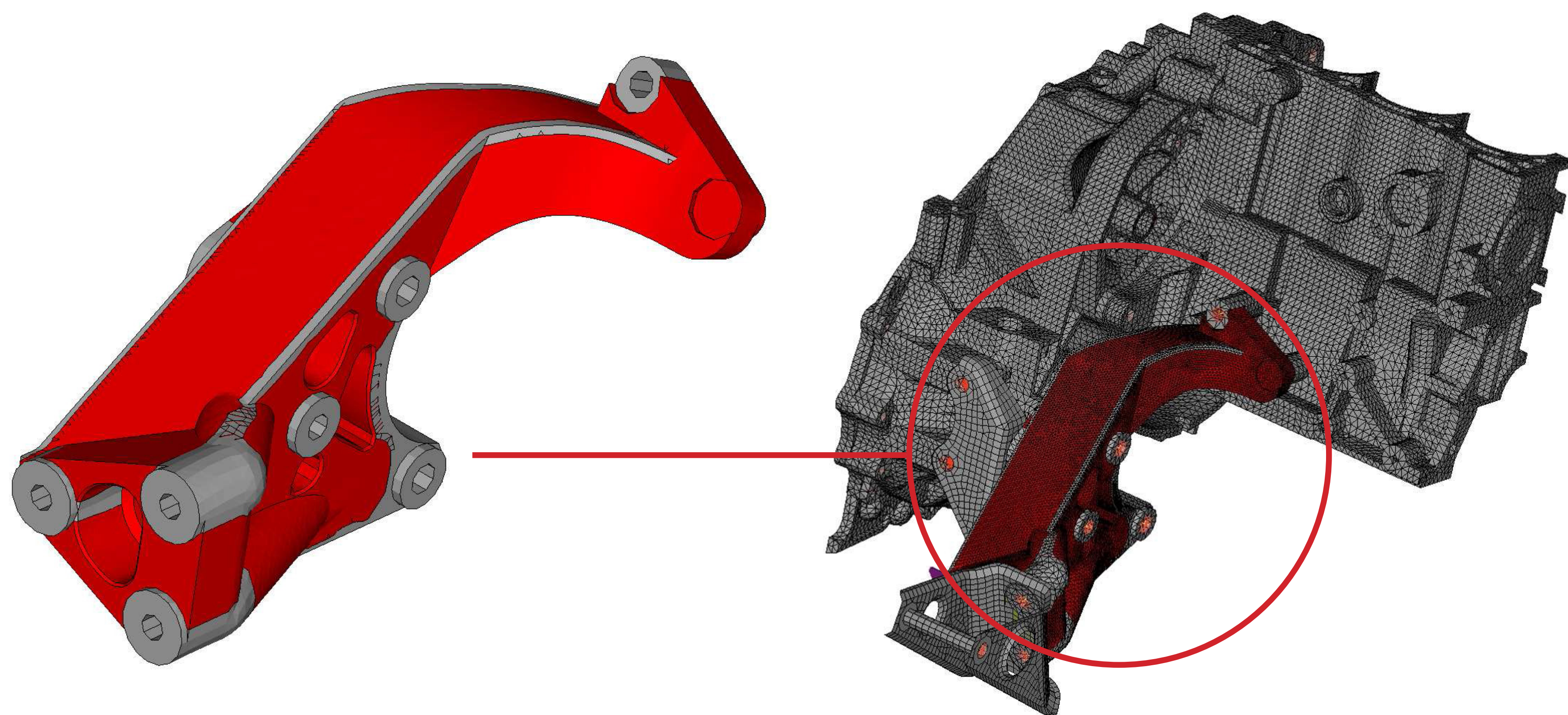


NOMINEE



## Maruti Suzuki India Limited Rear Engine Mounting Bracket for the Maruti Alto

Engine mount form an indispensable part of the powerhouse of an automobile. It is not only responsible for taking distributed engine load but also for minimizing the vibrations being transferred to the body frame. A lighter engine mount can help to achieve better fuel economy and lower emission levels, thereby improving overall engine performance.



- There was a weight saving of 330 grams which corresponds to 15% of the weight of the engine mounting bracket.
- Rather than using a manual iterative approach for weight saving, a more scientific approach such as optimization (OptiStruct) was used which has helped in achieving the best possible solution with minimum number of iterations. The optimized design has been validated for strength as well as vibration in CAE to have a confirmation for design functionality.
- Topology optimization was used for removal of redundant material. The same approach could be used for other engine components for weight reduction without affecting design functionality. In addition, this same approach can be used for the similar components in other car models.
- In addition to the weight reduction of the engine mounting bracket, there is one bolt removal which has led to a significant cost saving. Performance of the optimized design is the same as the performance of the original design in strength as well as vibration.

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