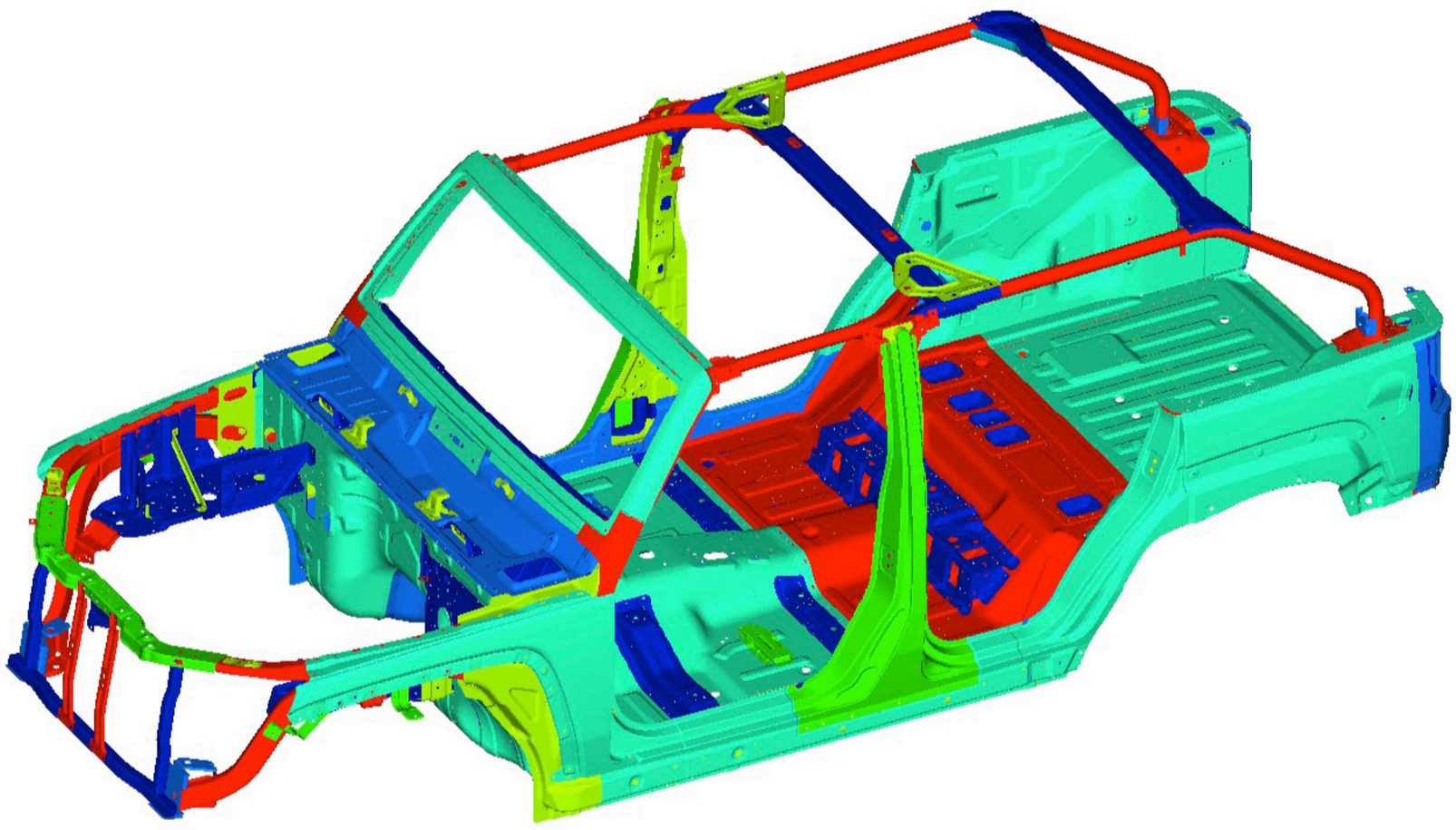
Altair enlighten award

BAIC Group

Weight Lighten of an Off-road Vehicle

New vehicle model of the BJ40. The previous model is made of steel, new material including CFRP and aluminum alloy as well as an innovation new structure of the vehicle's hood, lower control arm, door, car-roof, chair skeleton, frame etc was employed to reduce the weight by approximately 40 KG, comparing to its kerb mass 1830 KG.

- Replacing steel (previous model) with CFRP in engine hood saves 12.5kg weight.
- Replacing SMC (previous model) with CFRP in roof panel saves 5.0kg weight.
- Application Al material in side door outer panel (replacing mild steel) saves 4.8kg weight.
- Topology optimization design with Al casting process for lower control A-arm, replacing stamped component, saves 2.25kg weight.
- Replacing steel tubes (previous model) with Mg-Al profile tubes in rear seat frame parts saves 7.0kg weight.
- Frame size optimization saves 15kg.



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