Transportation Project 2

Project	***Steering system design for passenger car. (Rack & Pinion mechanical type)***
Scope of Work	• Design calculations for the steering system (Steering radius-**4 mtrs**, steering ratio-**19:1**, steering efforts-**9 kg** etc-as per **SAE J 695**) • Finalization of caster, camber & king pin inclination. • 3D-Modeling of steering system • Design of rack & pinion gear system • Manufacturing drawings of individual drawings of the steering system.
Inputs	• Cabin & front axle models. • Max steering effort • Required steering radius
Challenges	• Packaging of the steering system in the monocoque chassis. • To meet the steering effort requirements • To meet the steering radius requirements
Deliverables	• 3D Model of the steering system • Design calculation sheet for steering system (Which will show the steering radius) • Steering geometry diagram(caster, camber & King pin inclination) • 2D-Manufacturing drawing of individual parts. • Bill of material
Platform/ Tools Used	• Catia V5
Value Addition to Customer	• Optimized design (Less effort-**7**kg from driver & small turning radius) • Overall manufacturing cost of system has been reduced compared to customer's previous model. • Minimized the steering geometry errors. • As the pinion is located at the center of the rack, the LHD & RHD conversing will be very easy