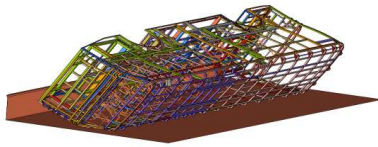


## CTRINE ENGINEERING PVT. LTD.



### Automotive Seating System

- Front Impact Test.
- High-speed Rear Impact Test.
- Luggage Retention Test.
- Low-speed Rear Impact Test.
- Child Restraint Anchorages Test.
- Seat Belt Anchorages Test.
- Head Restraint Performance Test.

### Passenger Bus Analysis

- Passenger Bus Rollover. ( ECE R66/ AIS031)
- Roof Crush Analysis. (FMVSS 216)
- Front Impact Analysis.
- Vehicle Under-Run Protection Analysis.

### Metal Forming

- One-step and Incremental Forming Analysis.
- Blank Shape Optimization.
- Blank Utilization.
- Spring –Back Prediction.

### Automotive Interior Systems

- Complete IP Analysis.
- Head Impact Test.
- Knee Impact Test.
- Door Panel Analysis.
- Central Console Analysis.
- Handling Analysis.
- Overhead System Analysis. (Sun-Visors, Head-liners, Overhead Console)

### Chassis

- Modal Analysis.
- Frequency Response Analysis.
- Tow-Bar Stress & Durability.
- Strength of Chassis Mounted Brackets. (Eg. Engine, Suspension, Outriggers)

### Homologation

- Passenger Vehicle.
- Commercial Vehicle.
- Special Purpose Vehicle.
- Automotive Seat.

### Other Services

- Cost & Weight Optimization.
- Meshing & Model Building.

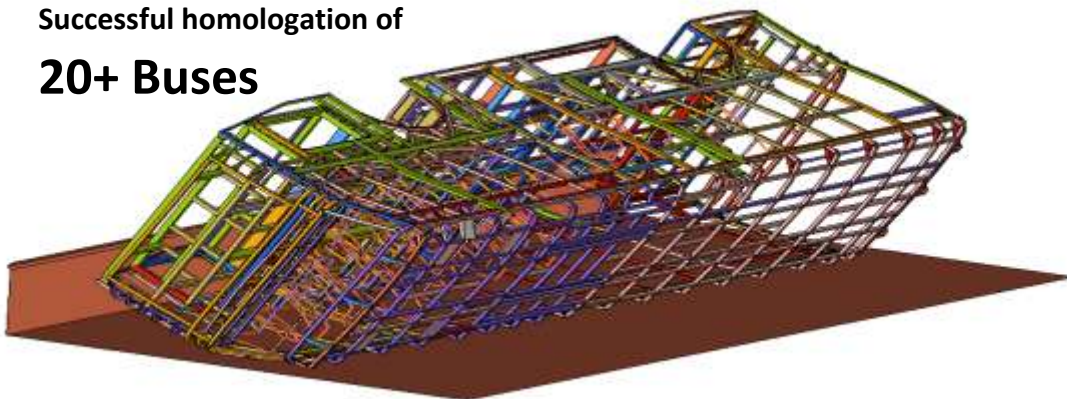
- Reverse Engineering & CAD.
- Test Co-relation with FEA.

## SUCCESS STORY OF CTRINE ENGINEERING



Seating System Development of  
**VITARA BREZZA**

Successful homologation of  
**20+ Buses**



Successful homologation of  
**150+ Seats**