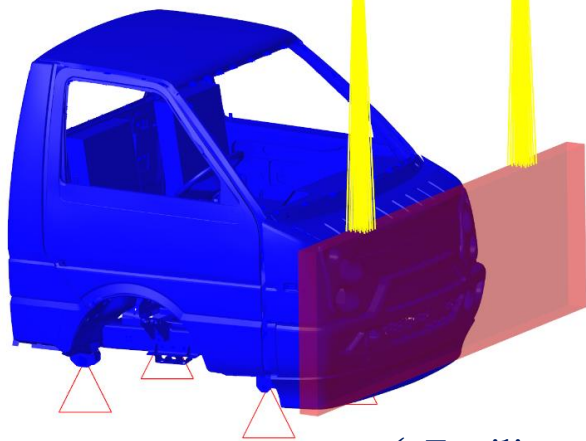




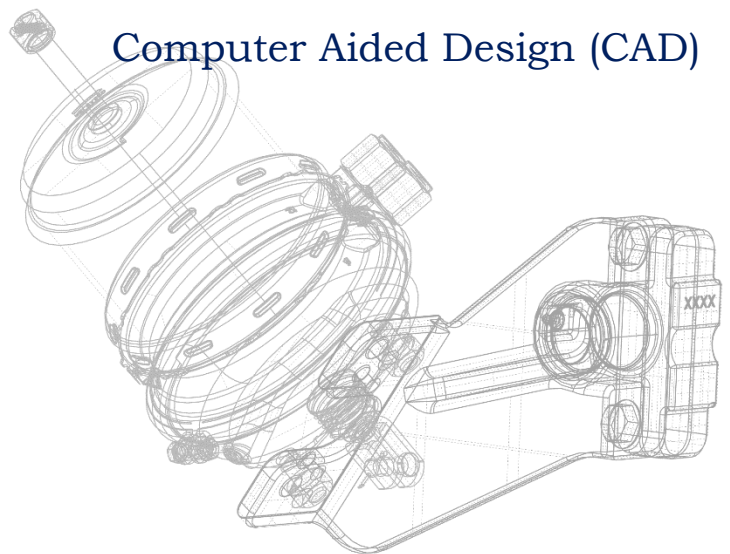
VIRTUAL SIMULATION LAB



Computer Aided Engineering (CAE)



Computer Aided Design (CAD)



- ✓ Facility of Non-Destructive Testing
- ✓ High Level of Accuracy & Correlation with Physical Test
- ✓ Highly Versatile
- ✓ Cost-Effective & Time Efficient

About Us

- ✓ Established under Vehicle Crash Lab (VCL) of CIRT, in January 2024
- ✓ Expertise in Finite Element Analysis (FEA) & Computer Aided Design (CAD)
- ✓ Development of vehicle structure, automotive components & industrial equipment
- ✓ Testing as per CMVR under simulation & providing solutions to design problems

VSL/FEA Competencies

- ✓ Evaluation of
 - i. Strength of Bus Superstructure (Rollover Test) as per AIS:031/ AIS:119 / AIS:052 (Clause 6.1) / ECE R66 / ECE R107
 - ii. Bus Stability Angle determination as per AIS:052 (Clause 6.2) / ECE R107
 - iii. Lateral Protection Device (LPD) as per IS:14682
 - iv. Natural Frequency (Modal Analysis) of Bus Superstructure as per AIS:153
 - v. Strength of Cab of Commercial Vehicle (Front Impact Test, Roof & Rear Wall Strength Test) as per AIS:029 (Part A, B & C) / ECE R29
 - vi. Analysis of Front Underrun Protection Device (FUPD) as per AIS:069
 - vii. Analysis of Rear Underrun Protection Device (RUPD) as per IS:14812
 - viii. Analysis of Truck Load Body Strength as per AIS:093
 - ix. Trailers as per AIS:113
- ✓ FOPS Evaluation as per IS/ISO:3449
- ✓ ROPS Evaluation as per IS/ISO:3471, IS:11821 Part-II, EU-1322/2014
- ✓ Car Crash test analysis as per AIS:197, AIS:098, AIS:099
- ✓ Airbag, Seat belt modelling & Full vehicle crash analysis
- ✓ Analysis & simulation of electrical components, braking of powertrain & transmission
- ✓ Evaluation of Bus Superstructure Design as per MoUD UBS-II Requirements
- ✓ Any other FEA testing requirement as per National/ International Standard which comes into force regarding Computer simulation.



HyperLife – Fatigue Life Estimation & Durability Test



AcuSolve – CFD & Thermal Simulation



MotionSolve – Multibody Dynamics Simulation



HyperMesh – High-fidelity Finite Element Modelling



Virtual Wind Tunnel - External Aerodynamic Studies



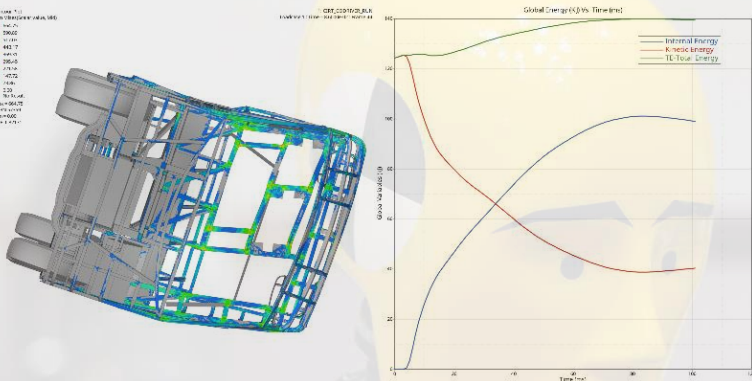
HyperMesh NVH - Advanced platform for full vehicle NVH simulations



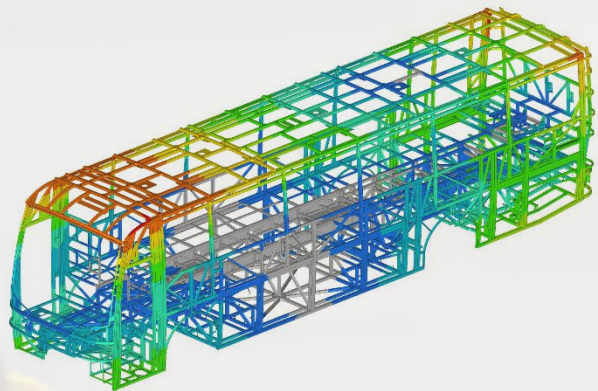
LS-Dyna – Dynamic Analysis of Braking, Transmission Components

One Stop Solution for Mechanical Simulation, CAD & Vehicle Certification

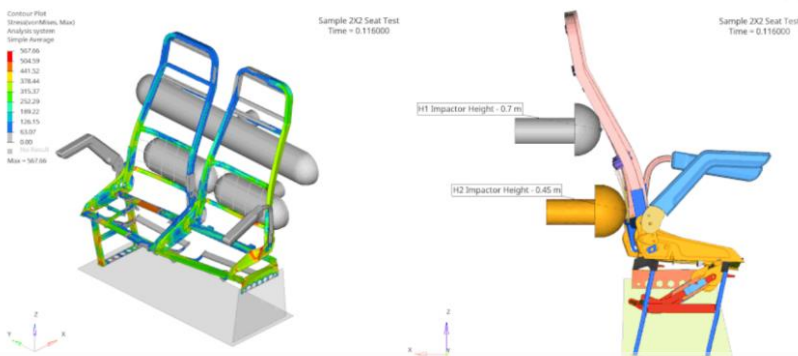
Get Reliable, Fast and Accurate
Results with FEA analysis of
complete bus as per CMVR
Conformity to safety of bus, with
Non-Destructive Analysis



Build simulation models even
for highly complex structures,
verification with Modal
Analysis in FEA



Simulate & Verify Every
Aspect of Designed
Components for Safety &
Economic Manufacturing

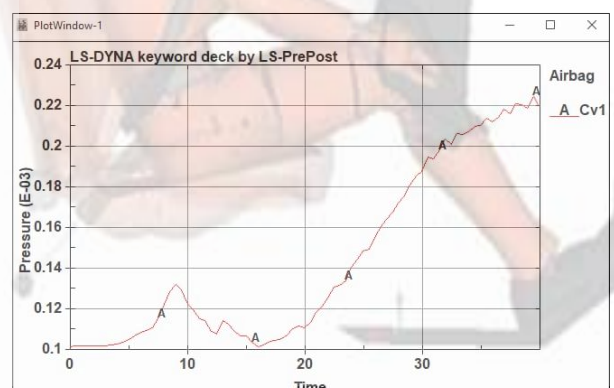


Testing

Validate stress, strain,
displacement, energies,
pressure & much more
with Iterative Design
Improvements

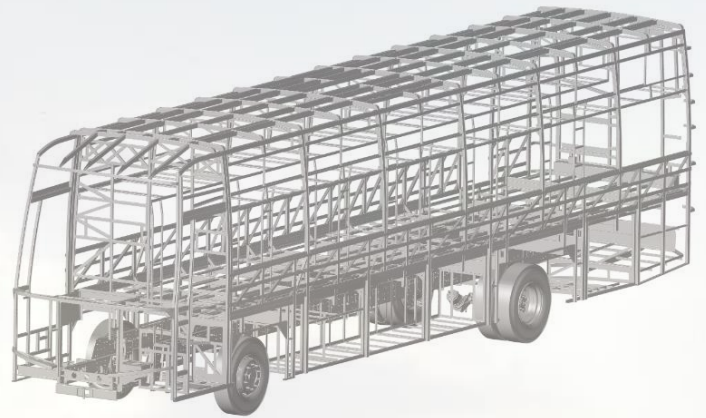
Evaluation

Creation



Perform CAD operations like,

- ✓ Parametric Part modelling and CAD customization
- ✓ Design of Interior and Exterior parts
- ✓ Full Vehicle Integration and design of under-body parts
- ✓ Adaptation of existing design to new vehicle variants
- ✓ Drawings generation for manufacturing



ALTAIR
HyperWorks

Ansys

LS-DYNA
R11 / R14

2019.1/2022.3/2023/
2024/2025/2026

Contact Us

Dr. Devendra Singh
Director (CIRT)



Landline: 020-67345401/402



director@cirtindia.com



Mr. S.B. Salunkhe,
Head Automotive Division



Cell: +91 9850241554
Landline: +91-20-67345491



headed@cirtindia.com



Mr. S.S. Dhanave,
Incharge - Virtual Simulation Lab (VSL)



Cell: +91 9423434885
Landline: +91-20-67345489/468



fea.vsl@cirtindia.com

Central Institute of Road Transport

Reg. Office:

Pune-Nashik Road, Bhosari, Pune-411026,
Maharashtra, India

Website: www.cirtindia.com

Mr. Prashant kakade

Head -Technical Directorate (TD)

Landline: +91-20-67345450

Cell: 9561962626

Email: td@cirtindia.com

