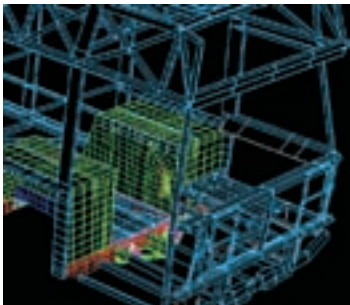


## Engineering Services

Exova's engineering services has supported the automotive, commercial truck & bus, off-highway, military, aerospace, marine, rail, mining, manufacturing, and packaging industries for over 20 years. Exova's engineering service team provides analytical expertise.



We leverage new technology to support the engineering community in the design, development, validation and field issue identification & resolution from components to complete systems.

Our experienced staff clearly understands the synergetic interaction between components, sub systems and total system performance within its operational environment. Exova's engineering staff has supported programs both domestically and in countries throughout the world.

### Engineering Services Provided

#### Computer Aided Engineering

- Component/Subsystem Model Development & Validation
- Product Development
- Design Optimization
- Finite Element Analysis
- Modal Analysis
- Thermal Management/Analysis

#### Road Load Data Acquisition Instrumentation

Exova has over 500 commercial transducers on the shelf

- Acceleration
- Displacement (Linear & Angular)
- Torque
- Load (Single & Multi-Axis)
- Pressure
- Flow
- Temperature
- Current & Voltage
- Speed
- GPS
- Strain (Strain gages & Stress coat)
- Component Instrumentation and Calibration
- Custom Transducer Design and Fabrication (Single to Tri-Axial Loads)
- Torque Transducers
- Custom Transducer Calibration

#### Data Acquisition

- 10 Data Acquisition Systems
- 250+ Channel Capability
- Sample Rates from 1 Hz to 250 KHz

#### Data Analysis

- Data Editing and Reduction
- Drive File Development
- Fatigue & Life Analysis
- Root Cause Analysis
- Acoustical Analysis
- Rotating Machinery Analysis
- Time Domain Analysis
- Frequency Domain Analysis

#### Duty Cycle Development

- Benchmarking
- Customer Service Life Identification
- Usage Profiling
- Accelerated Life Test Development
- Proving Ground Test Course/Customer
- Correlation
- Custom Test Method Development

#### Computer Software Support

- ADAMS
- SDRC-Ideas
- Ansys
- MATLAB
- Auto CAD
- nCode ICE-Flow

Testing  
Advising  
Assuring

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