### CYIENT



# ACCELERATING INNOVATION WITH TECHNOLOGY

Driving Innovation and Growth with Integrated Engineering Solutions



Spiraling product costs and margin pressures are challenging the mechanical engineering industry to reinvent itself. Looking beyond the traditional approach to engineering, intensifying focus on R&D, leveraging new technologies, and enabling faster, better, and more cost-effective product development is imperative to remain competitive.

With a strong foundation in mechanical engineering design and industry-specific domain knowledge, we have delivered leading-edge engineering solutions across the Off-Highway Industry.

#### **Value Creation through Mechanical Engineering Services**

## **Key Services/Offerings**

#### Design

- 50+ Million hours of design experience
- Supporting in all Geo locations

#### Modelling

- Top-down modeling techniques
- Feature / Manufacturing based modeling
- 20+ million hours of experience

#### **Control Systems**

 Electro-Hydraulic and Electro-Mechanical systems

#### **Technician support**

 Project life cycle management

#### **Mechatronics**

- 10 years of experience on Engines, Gensets
- Experience in MIL-STD requirement

#### **Product Health**

- Scientific methods for calculating reliability
- Robust mechanism for problem identification & root cause analysis

## Noise, Vibration, and Harshness Engineering

- Analyzing the noise levels in exhaust system and design recommendations
- Design for dampening the noise

#### **Test and Validation**

- · Engine performance testing
- Testing of vehicle electrical systems and harness
- Physical testing of connectors

#### **Materials Analysis**

- Measuring fatigue limits of
  motals
- Mold flow and mold cooling analysis for identifying right plastic materials
- Material compositions for ROHAS compliance

#### **New Product Development**

- NPD of Excavators, Cranes, Utilities vehicles, Concrete and Forestry machinery
- Highly skilled 500 + engineers designing the equipment with optimized and cost-effective designs

#### **Simulation**

- Component, Sub-system and System level analysis with different load sets
- Structural, model, fatigue and dynamic analysis

#### Internal Combustion

- Design of base and other structural members
- Routing of fuel lines and cooling lines
- Instrumentation and piping

## Improve product quality, reliability, and time-to-market while focusing on cost efficiency

As a global trusted partner in the Off-Highway domain, we have delivered comprehensive solutions across our clients' value chain. Our solutions are agile, innovative, and give businesses a much-needed competitive edge.

#### Below are a few case references we have delivered:

#### Complete Product Design and Development of 100-Ton Truck Crane

- Designed and developed a 100-ton truck crane in 11-months for a large heavy equipment/agricultural OEM.
- 30% of cost reduction, \$20K savings per crane and compliant across all 50 states in USA and Canada

#### **Schematic Design**

- Converted mining equipment schematics into system wise and sub-system wise schematics for better maintenance.
- Reduced the AutoCAD to PDF conversion time by almost 70%, Re-use of similar schematics resulted in savings of 15-20% of efforts

#### **Excavator - New Product Development**

- 70% of parts localized for India market and reduce 4000 USD / machine, and achieved 15% less fuel consumption compared with earlier variant
- Pump replaced from radial piston pumps to tandem pump and achieved 5% more hydraulic power with less internal friction to increase overall efficiency
- 28% overall cost reduction, Part communization and reduced 150 new part numbers.

## The Cyient Edge

With a decade of experience in the Industry, Cyient employs pragmatic, flexible, and innovative strategies to meet our client's business requirements. We shape trends for successful products and services in a connected Off-Highway industry by supporting the entire value chain through the Design, Build, and Maintain stages. Working in close collaboration with clients & leveraging our Mining domain knowledge we co-innovate to design and optimize future-ready solutions.

Cyient (Estd: 1991, NSE: CYIENT) is a global Digital, Engineering and Technology solutions company. We collaborate with our customers to design digital enterprises, build intelligent products and platforms and solve sustainability challenges. We are committed to designing tomorrow together with our stakeholders and being a culturally inclusive, socially responsible, and environmentally sustainable organization.

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