

# ENGINEERING, RESEARCH AND DEVELOPMENT SERVICES

## WE MAKE PRODUCT DEVELOPMENT DREAMS BECOME REALITY

At Tata Technologies, our Engineering, Research and Development (ER&D) group is the largest part of our business. We specialize in product development, project and program execution, providing clients with the capacity to create and innovate new products from components all the way up to complete solutions like full vehicle programs. Our ER&D group is comprised of thousands of skilled designers, engineers, detailers and program managers, the best in the business, available for offshore, nearshore or onsite design and development projects.

## OUR CAPABILITIES

### Product Engineering

Advanced Product Quality Planning (APQP)

- Product Definition
- Specification and Requirement Development
- Advanced Technologies Application
- Advanced Product Design

Concept Development

- Product Specifications
- Mechanical and Usage Packaging
- Advanced Feasibility
- Advanced Concept Design

Product Design and Development

- Vehicle/Machine Target Setting and Specifications
- System Targets Setting and Specifications
- Drafting and Detailing
- Mechanical Design
- Simultaneous Engineering
- Electrical and Embedded Systems
- CAE (Stress, Structural, Computational Fluid Dynamics, Heat Exchange, Durability)
- Product Documentation

Product Verification

- Product Digital Mock-Up
- Manufacturing and Assembly Simulation
- Digital Prototyping
- Digital Quality Assessments

Product and Process Validation

- Test and Validation
- Master Model Verification
- Design Verification Plan and Report (DVP&R)

### Manufacturing Engineering

Manufacturing Solutions

- Digital Process Management (DPM)
- Digital Factory Simulation and Optimization (DFSO)
- Tool and Equipment Design (TED)
- Computer Aided Manufacturing (CAM)
- Feasibility Design for Manufacturing, Assembly and Service
- Manufacturing Quality Control (MQC)
- Manufacturing Automation Controls and Systems (MACS)

Maintenance and Value Engineering/Value Analysis Activity

- Design and Development
- Process Assembly Tooling Design

## AUTOMOTIVE

### Simulation

- Class A Surfacing
- Finite Element Analysis, Mechanism, and Crash Analysis
- Structural/Stress Analysis
  - Strength, Noise Vibration Harshness (NVH), durability using MSC Nastran
  - Front, Rear, Side Impact, and Interior Head Impact using LS-DYNA
- Occupant Safety
- Robcad Process Simulation and PLC Programming

### Manufacturing

- Robotics Simulation
- Material Flow Simulation
- Lightweighting

### Translation

- Direct Translations (no history) for NX, SOLIDWORKS, CATIA, PTC Creo Parametric, AutoCAD, Medusa and Alias

### Communication

We facilitate online collaboration through:

- Secure FTP
- FCA: Teamcenter, Rocket Software (Trubiquity)
- Ford: Teamcenter (TcAE)
- GM: Teamcenter (TcAE), Rocket Software (Trubiquity and Trufusion)
- Nissan: TC Passion, TCP2

At Tata Technologies, we don't put all our eggs in one basket. In addition to our vast engineering and design capabilities, we have over 25 years' experience providing Product Lifecycle Management services and supporting technology. Our Connected Enterprise IT team helps clients bridge the gap between data management, manufacturing and enterprise IT systems.

## Product Lifecycle Management

- Software Implementations
- Project Services
- 4D Process Consulting
- Staff Augmentation
- PLM Assessments

## Connected Enterprise IT Solutions

- Enterprise Resource Planning (ERP)
- Manufacturing Execution Systems (MES)
- Supply Chain Management (SCM)
- Customer eXperience Management (CXM)
- Business-wide Analytics and Intelligence (BA/BI)
- Application Lifecycle Management (ALM)

## Technology Sales and Support

- Autodesk
- Dassault Systèmes
- Siemens PLM

## Proprietary Training and Support

  
Engineering Training

  
Quality Assurance and  
Data Compliance

  
Flexible Support Options

  
Tool for CATIA and Autodesk Inspection  
and Translation Data Validation

## FIND OUT MORE

Need project help during a peak period? Look no further than Tata Technologies. We're experts in the most popular engineering and design software programs on the market today including, but not limited to: CATIA V4, V5 and V6, NX, AutoCAD, and PTC Creo Parametric. Need NC programming help? We're at your service.

+1 248.426.1482 | [tatatechnologies.com](http://tatatechnologies.com)  
Email: [Info.Americas@TataTechnologies.com](mailto:Info.Americas@TataTechnologies.com)

## GLOBAL PRESENCE

Tata Technologies serves automotive, aerospace, and industrial heavy machinery manufacturers and their supply chains worldwide.

### North American Headquarters

41050 West Eleven Mile Road  
Novi, MI 48375-1302  
United States of America  
Tel: +1 248.426.1482

### European Headquarters

The Enterprise Centre  
Coventry University  
Technology Park  
Puma Way, Coventry  
West Midlands CV1 2TT  
United Kingdom  
Tel: +44 (0) 8443 759685

### Asia Pacific Headquarters

25 Rajiv Gandhi  
Infotech Park  
Hinjewadi, Pune 411057  
India  
Tel: +91 20 6652 9090

### International Headquarters

8 Shenton Way  
#19-05 AXA Tower  
Singapore 068811  
Singapore  
Tel: +65 6779 4733

## ABOUT TATA TECHNOLOGIES

Tata Technologies makes product development dreams a reality by designing, engineering, and validating the products of tomorrow for the world's leading manufacturers. With more than 8,000 professionals serving clients worldwide, Tata Technologies is the manufacturing industry's premier partner for advanced engineering and design services, product lifecycle management consultancy and software, and connected enterprise solutions. For more information, please visit [www.tatatechnologies.com](http://www.tatatechnologies.com).