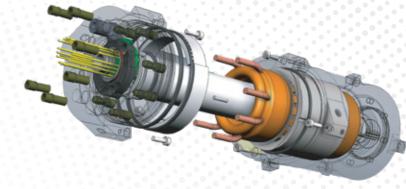


ENGINEERING RESEARCH & DEVELOPMENT SERVICES (ER&D)

"Co-engineering the Future with Our Partners"





At KOOT, we are driven by a passion to engineer smarter, sustainable solutions that empower our customers, employees, and communities to thrive.

As a technology-focused engineering company, we foster a culture of collaboration, continuous learning, and innovation. Our commitment to precision, creativity, and a proactive mindset enables us to co-engineer the future.

Guided by our people's expertise and grounded in integrity and fairness, we relentlessly pursue excellence to deliver the best outcomes and exceptional customer experiences.

It is this unwavering dedication and shared purpose that fuel KOOT's mission for inclusive, sustainable growth and meaningful impact worldwide.

KOOT AT A GLANCE

22+ Global Clients

550+Employees Across the Group

Global Innovation Centres

11+ R&D and Testing Labs

2000+

Engineering graduates from Diverse disciplines readily available from the Group's technical university



WHO WE SERVE

"With Expertise Spanning Multiple Industries, We Deliver Customized Solutions"



Aerospace & Defence



Mining



Healthcare & Life Sciences



IT & Technology



Automotive & Mobility



Oil & Gas



Machinery & Equipment



Transportation



Aviation



Forest Products
Paper & Packaging



Media & Entertainment



Metals



Construction & Infrastructure



Consumer Products



Energy & Natural Resources



Utilities & Renewables





Industrial Goods



General Engineering



Pumps & Valves



Agri Equipments

WHAT WE DO

ER&D Services for







CONSULTING

- Industry 4.0
- Sustainability
- ManufacturingConsulting
- Product Consulting
- Operations Consulting
- Digital Architecture
- Digital Thread& PLM

PRODUCT

- System Design
- Mechanical + Electrical + Electronics Design
- Software
- Hardware
- Testing & Validation
- Video / Media Engineering
- Digital Twin

MANUFACTURING

- Plant Engineering
- Digital PLM
- Enterprise
 Manufacturing
 Management
- Integrated Asset Management
- Digital Factory Modelling & Simulation
- Rapid Prototyping

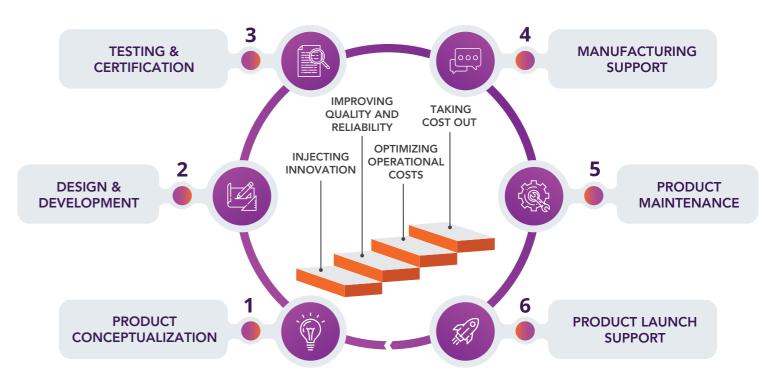
OPERATIONS

- After Market
- AgileSupply Chain
- Asset Care
- Connected Product Support
- Engineering Information Management
- Intelligent Building Management
- System Integration

COMPREHENSIVE ENGINEERING ACROSS THE PRODUCT DEVELOPMENT LIFE-CYCLE

From Conceptualisation to Final Product Support

A complete suite of services ensures seamless integration across the entire Product Development Life-cycle (PDLC)



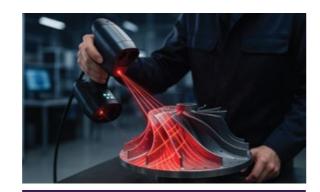


WHAT WE DO



PRODUCT ENGINEERING

- Concept Design
- 3D Modeling (CAD)
- **Detailed Engineering Drawings**
- Design for Manufacturing (DFM)
- Design for Assembly (DFA)



REVERSE ENGINEERING

- Recreating designs from physical products
- Scanning and digital modeling
- Benchmarking and improvement



ELECTRICAL + ELECTRONICS & SOFTWARE DEVELOPMENT

Sensor Integration & Real-Time Systems

HMI (Human Machine Interface) Development

Product Software Architecture

Electrical Design

- Compliance & Certification (CE, UL, RoHS, etc.)



- 3D Printing
- **CNC Rapid Prototyping**
- **Functional Mockups**
- **Design Validation**



VALUE ENGINEERING

- **Cost Optimization**
- **Design Simplification**
- **Material Substitution**
- Performance Improvement



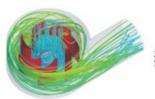
TESTING & VALIDATION

- Mechanical Testing
- **Electrical Testing**
- Field & Lab Testing



SUSTENANCE ENGINEERING

- **Product Upgrades**
- **Technical Documentation**
- Spare Part Design
- ECO/ECR Management (Engineering Change Orders/Requests)





SIMULATION & ANALYSIS

- Finite Element Analysis (FEA)
- Computational Fluid Dynamics (CFD)
- Thermal & Structural Analysis
- Vibration & Fatigue Analysis



EMBEDDED ENGINEERING

- **Embedded Hardware Development**
- **Embedded Firmware Development**
- IoT Solutions
- **Control Systems**
- PCB Design & Layout



PLANT & PROCESS ENGINEERING

- Tool Design
- Jig & Fixture Development
- Automation & Robotics Engineering
- **Process Optimization**
- Materials Technologies



DIGITAL ENGINEERING

- Digital Twin
- AR/VR for Product Engineering
- PLM Integration (Product Lifecycle Management)
- Cloud & Edge Engineering



ADVANCED DESIGN, PROTOTYPING, **TESTING & VALIDATION FACILITIES**

"Accelerate innovation Without Building from Scratch"

At KOOT, we offer R&D Labs as a Service (RDLaaS) - a game-changing model that gives your business on-demand access to world-class research, design and testing infrastructure without the capital burden of building it yourself.

Whether you're a startup, SME or global OEM, our plug-and-play lab services empower your teams to innovate faster, validate smarter and scale sustainably.



HOLISTIC DIGITAL & ENGINEERING SERVICES

HDE Services Across Product Development Lifecycle

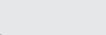
Design & Concept · Development

Testing

Manufacturing

End-of-Life Active **Product Support** Support

€₩) MEDICAL





Product Engineering

AUTOMOTIVE

- NPD/NPI Services | Product
- Point solutions/Services | Full System/Solution development
- Concept » Manufacturing » After Market Support

Digital Engineering

INDUSTRIAL

- Design Thinking
- Enabling Product "smart" and "connected" - Digital Platforms
- Enabling smart decisions Big data | Cloud
- Data Engineering and Al

Cost Engineering

- Cost reduction without design changes
- Supplier Rationalization | Procurement support
- Value analysis | Value Engineering Teardown | Benchmarking

Mechanical Engineering (CAE/CFD)

Embedded Hardware & Software Engineering

> Verification & Validation

PLM Consulting & Managed Services

MES & Application Engineering



















OUR HOLISTIC EXPERIENCE @ VARIOUS STAGES OF PDLC OUTSOURCING AREAS

Digital & Engineering Specialists

Integrated - Design | Testing | Manufacturing

- Legacy Conversion
- Porting & Migration
- Reverse Engineering
- Obsolescence Management
- Process Qualification
- First Article Inspection
- Engineering Change Management
- Technical Documentation
- Technical Publication
- Value Analysis / Value Engineering • Tool design & Automation • 3D Printing & Functional Prototypes • Low Volume Manufacturing • Digital Manufacturing Services

- IT OT Integration • Robotic & Assembly Simulation
- Plant & Process Simulation
- Factory Automation
- Design / Developme
- Industrial Design
- Competitor Analysis
- Feature Benchmarking
 - Manufacturing Feasibility Study

Diverse Technologies Footprint

Styling

Mechanical

- Design, Modelling & Detailing (CAD)
- Design Simulation & Analysis (CAE)
- Structural & Thermal Analysis
- Design Automation
- **Embedded**
- System Bring up
- System Integration
- Embedded Software Development
- Embedded Hardware Services
- PCB design & Board bring up
- PLM Implementation and Customization



- Component / Material Qualification
- Functional, Performance Testing & Validation
- Environmental, EMI/EMC, Compliance Testing





























ER&D SERVICES

From Concept to Market - Smarter, Faster and Safer

1. PRODUCT CONCEPT DEVELOPMENT & PROTOTYPING

We work closely with engineering teams to transform ideas into functional product designs.

- End-to-end support from requirement gathering to conceptual design
- Rapid prototyping using 3D printing and additive manufacturing
- Localized prototyping facilities for faster iteration, validation and time-to-market

2. DESIGN FOR MANUFACTURING (DFM) & SCALABILITY

We engineer designs that are optimized for large-scale, high-quality and cost-effective production.

- DfM practices to simplify designs, reduce part counts and streamline assembly
- Design for Assembly (DfA), Cost (DfC) and Testing (DfT) support
- Scalability planning integrated early into the design phase

3. SIMULATION, MODELING & DESIGN VALIDATION

Ensure your product works as intended before building it.

- Structural, thermal, and flow simulation using advanced CAD/CAE tools
- Finite Element Analysis (FEA) for strength, durability and load validation
- Early detection of potential failures or design inefficiencies through digital modeling

4. TESTING, RELIABILITY & FAILURE ANALYSIS

We help verify product performance under real-world conditions.

- Full-range testing: electrical, thermal, mechanical, chemical
- Environmental reliability testing (humidity, vibration, salt spray, UV, drop)
- Advanced diagnostic tools: X-ray, CT scan, SEM and Shadow Moiré analysis

5. MICROELECTRONICS & ADVANCED PACKAGING

We engineer high-density, compact and high-performance electronic assemblies.

- Expertise in system-in-package (SiP), miniaturization, and thermal design
- Advanced assembly: fine-pitch flip chip, wire bonding and die attach
- Focus on reliability, efficiency and scalability

6. DESIGN FOR AUTOMATION

We prepare your products for smart, automated manufacturing environments.

- Automation-friendly design using Digital Design for Automation (DDFAUT) tools
- Digital simulation and line validation for automated assembly
- Early tooling verification to eliminate manufacturing surprises

7. END-TO-END PRODUCT LIFE-CYCLE ENGINEERING

Seamless engineering support from concept through commercialization.

- Engineering input across the product life-cycle
- Continuous improvements based on real-world performance and feedback
- Support for scaling products across regions and markets with flexibility and speed



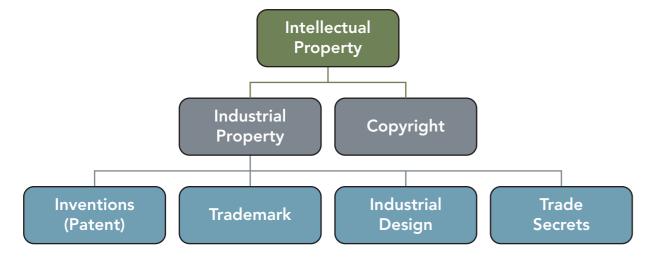


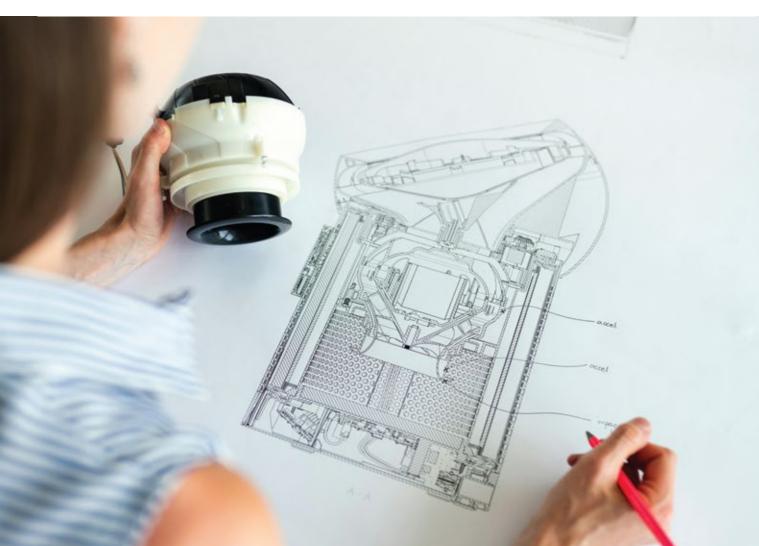


YOUR INNOVATION. OUR RESPONSIBILITY.

At KOOT, we understand that your ideas are your most valuable assets. We are deeply committed to safeguarding your intellectual property and ensuring complete confidentiality throughout every stage of engagement.

Strict IP Protection Protocols: From NDA execution to secured data handling, we follow robust IP management practices to ensure your concepts and technologies remain protected. With KOOT, your innovation is in safe hands. We don't just help you build better we help you build securely.





"WE HELP GREAT COMPANIES CREATE GREAT PRODUCTS"





Innovation, Design, Manufacturing, Sales, Marketing and Service through Licensing and Alliances

nnovation-Led Design and Manufacturing

Joint Product Development and Manufacturing

Original Design Manufacturing (ODM)

Original Equipment Manufacturer(OEM)







Situated in Coimbatore, India, our global headquarters sits at the epicenter of talent and innovation. Surrounded by over 200+ engineering institutions and a vibrant young, tech-driven population, Coimbatore powers our R&D, design and engineering excellence-making it the ideal launchpad for global innovation.

KOOT operates on a Global scale. Our presence across three continents enables us to deliver high-quality solutions and foster innovation to meet the diverse needs of our international clients.

Global Headquarters



INDIA

1391 A-1, Kanapathy Towers, Sathy Road, Ganapathy, Coimbatore, Tamil Nadu, India.



GERMANY

Neunkirchen-Seelscheid, Germany



UNITED STATES

Texas, USA



