

# SONASTAR 3DX

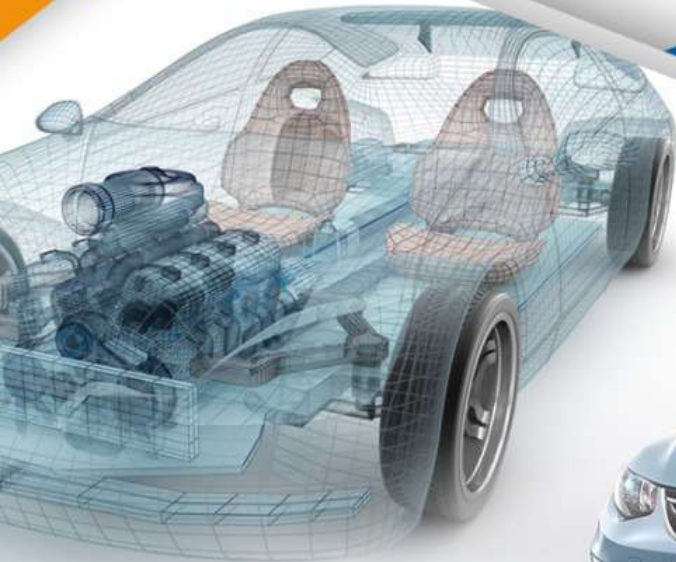
Creating World Class Design Engineers

Powered by

**SONA COLLEGE OF TECHNOLOGY**  
*Learning is a Celebration!*  
| An Autonomous Institution |



**DASSAULT SYSTEMES**



## MANUFACTURING ENGINEERING

Manufacturing engineering practices are constantly evolving. However, all best practices collectively aim to reduce workspace logistics, improve operator safety, and optimize throughput. At **Sona Star Innovation Pvt Ltd** in association with **Tamil Nadu Centre of Excellence for Advanced Manufacturing (TANCAM)**, we provide manufacturing engineering services that align with these industry trends. Our solutions and services for plant engineering, product development, sustenance processes, asset management, and product enhancement help clients successfully tackle current industry challenges, such as disruptive Original Equipment Manufacturers (OEMs), margin pressures, and volatile markets. We support manufacturers across all the product lifecycle phases, particularly in the production and industrialization of different parts and equipment, by providing project management support or technical assistance.

Our association with TANCAM, manufacturing engineering services are powered by extensive industry experience and a team of highly skilled and qualified engineers. We help to improve your manufacturing processes with our pragmatic approach and futuristic technical support. Our in-house technicians and professionals carry decades of experience in the manufacturing field allowing you to quickly mobilize the resources you require to begin working on your assembly or production line.

Our manufacturing expertise includes, but is not limited to the following:

2D and 3D plant drawings for preliminary design specifications

- Automation, modernization and reconstruction of equipment
- Design work coordination
- Preparation of plans, drafts, and specifications
- Assembly line productivity improvement
- Instrumentation schematics
- 3D scanning

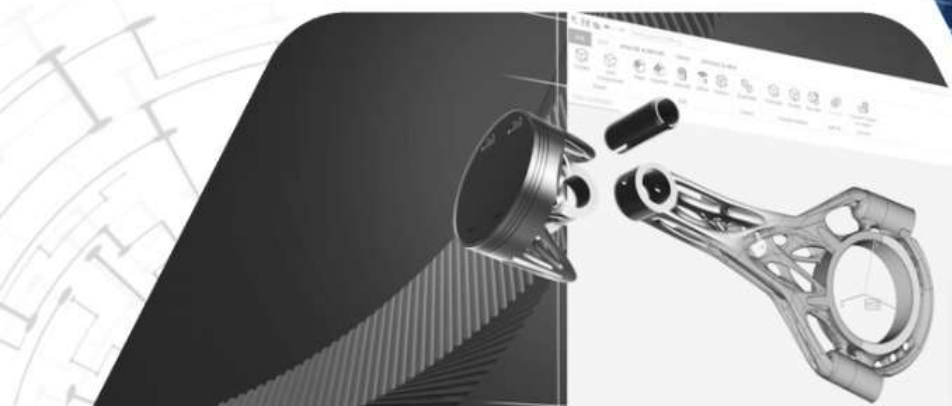
We can also support the designing and manufacturing of jigs for various components that enhance operational efficiency. By streamlining assembly process plans and fixing assembly issues, we help manufacturers complete their projects on time and Within budget. Providing comprehensive assistance with sourcing, major system integrations processes and vendor management, we help our clients to develop products efficiently and on time.

## JIGS & FIXTURE DESIGN

Optimizing existing resources and building capabilities have been the main areas of focus for companies in the manufacturing industry sector. This demand for increased efficiency and performance has led to the need for improved or revamped machinery. At **Sona 3Dx COE** (powered by **Sona Star & TANCAM**), we support our clients as a strategic partner and strong associate with our reliable jigs and fixture design services. We can assist you with simple and complex jigs and fixture designs that assure quality, attention to detail, enhanced production speed, machine error eradication and cost savings.

Our jigs and fixture design services include:

- 2D/3D visualization of mechanical parts
- Welding, Assembly, Machining, Hydraulic, Pneumatic and Testing fixtures
- Billing of materials and estimating costs
- Boring Jig, Drilling Jig, Open or closed Jig
- Verification of data sheet specifications
- Compliance with industry/company specific standards
- Checking fixtures and check gauges
- Creation of 2D drawings
- Woodworking jigs and framing jigs
- Process sheet preparation
- Quality check



## TOOL & DIE DESIGN

The manufacturing industry is continuously transforming by leveraging the latest tools and technologies to increase productivity and optimize operations, Sona Star & Tamil Nadu Centre of Excellence for Advanced Manufacturing (TANCAM) is a specialist in tool design, offering error-free tool drafting services. With extensive experience in tool engineering and design, we have successfully served businesses across various industry sectors including automotive, defence, commercial and aerospace. We provide comprehensive tool design services that include cutting tools, lifting aids, gauges, transportation aids, test equipment and moulds. Our services also include consultation and selection of the best tools suitable to meet specific operations. Backed by our own technical research institutions, we utilize cutting-edge trends and technologies that aid in tool design.

- Inspection gauges
- Testing
- Fixtures
- Specialty machines
- Check fixtures
- Welders
- Jigs and fixtures
- Mould press simulation
- Designing sheet metal forming products
- Designing of die casting products



Our solutions are tailored to your specific tool design requirements. Whether it be large assembly fixtures or small intricate tools, our team of highly experienced and adept design engineers understand your needs and can provide design solutions accordingly. Operating in a culture of cooperation and clear communication, we complete projects on time and within budgeted costs.



## PLANT LAYOUT / AS-BUILT DRAWINGS

Plant layouts and as-built drawings show exactly how the final construction was executed and demonstrates the existing conditions, contrary to the proposed conditions or designs. As-built drawings are important for businesses that use finished products, as it provides a legacy of what was built. Moreover, it facilitates knowledge transfer of all the important aspects related to the plant. Sona Star & Tamil Nadu Centre of Excellence for Advanced Manufacturing (TANCAM) provides discipline-specific plant layout and as-built drawings by accurately plotting all the locations and dimensions. Our drawing and documentation markups updated 3D models, as well as drawings and documentations present you with engineering drawings and drafts that are completely in sync with the actual structures and assembly. With extensive industry experience, we have catered to businesses across numerous sectors, including mechanical, electrical, fire and security, hydraulic, civil, architectural, mining and machinery.

- Plan drawings
- Section drawings
- Exterior drawings
- Fully surfaced CAD models
- Line schematics
- Block plans
- Penetration layouts Security layouts
- Shop drawings
- Power and lighting layouts
- Electrical schematics Zoning layouts
- Schematic drawings
- Line markups



We have a team of highly experienced engineers with a unique set of blended skill sets, including both traditional techniques and adept knowledge in the latest technology. Being a leading plant design and as-built drawings provider, we assist plant owners, equipment suppliers, consulting firms, as well as Engineering, Procurement, and Construction (EPC) contractors to minimize design risks, improve collaboration, and accelerate project delivery.

## 3-D PRINTING AND RAPID PROTOTYPING

3D printing is an essential tool for accelerating the prototyping process. However, its applications stretch well beyond prototyping to other facets of the product lifecycle.

**Manufacturing** — Design freedom and economically viable low-to-mid-volume production enable new possibilities for product design and operational improvement. Applied in combination, these two capabilities have the potential to transform decades old supply chains and business models.

**Tooling** — 3D printed tooling advantages include on-demand production, customization, digitization of designs and unrestrained design flexibility. This cuts out costly suppliers, compresses lead times, enables digital warehousing, and accelerates manufacturing floor productivity.

**Sales and Retail** — 3D printing gives retailers the ability to innovate, delivering highly customized, on-demand products and new experiences such as "co-designed" items developed in conjunction with the customers.

**Aftermarket Supply** — Businesses that embrace 3D printing for spare and replacement parts can replace warehouses of spare parts with 3D printers or a contract 3D printing service bureau to produce parts on a just-in-time basis.

## PRODUCT DEVELOPMENT SUPPORT SERVICES:

- Drawing & Legacy Data Conversion
- 2D drafting of Mechanical parts / assemblies
- DFMA
- 3D Modelling & 3D Mechanical Drafting
- Reverse Engineering
- Manufacturing Support & Process Planning
- Finite Elements Analysis (FEA)
- Computational fluid dynamics (CFD)
- Mould Flow Analysis
- Metal casting simulations
- Static Analysis
- Modal Analysis
- Harmonic Analysis
- Random Vibrational
- Seismic analysis
- Thermal analysis
- Nonlinear Analysis



## INTERIOR & EXTERIOR TRIM

We can produce plastic parts of many types including painting, chroming, IMD, High Gloss etc. as to be able to cover most of our customer needs.

- |                       |                        |
|-----------------------|------------------------|
| • Arm Rest            | • Trim Parts, Emblems  |
| • Storage Compartment | • Rear-view Mirrors    |
| • Central Console     | • Crossbeams           |
| • Ashtray             | • Front covers         |
| • Glove Compartment   | • Front & Rear Bumper  |
| • In Mould Decoration | • Automobile Dashboard |



3DEXPERIENCE™



## Address for Communication

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