



CYIENT

ACCELERATE COMPLEX PART PRODUCTION AND CUSTOM TOOLING APPLICATIONS WITH ADDITIVE MANUFACTURING

Cyient's additive manufacturing services help minimize costs and lead time for tooling units, in turn, improving performance and process agility.

OVERVIEW

Tooling components often have high manufacturing lead times due to their one-off design nature and a lengthy process of procuring castings, molds, and cores. Flexibility for improvements in design is often low in traditional tooling procedures, which also involves excessive wastage of materials. These factors affect the production of the actual part, which is dependent on the availability of suitable tooling leading to delays and revenue disruption.

Additive manufacturing (AM) is accelerating product design and manufacturing processes leading to its broad acceptance across industries. As opposed to subtractive manufacturing techniques, additive manufacturing creates objects from 3D models by joining materials through a melted layering process.

AM enables businesses to create tools on-demand with multiple design iterations within the same time that it takes to procure a single tool conventionally. With more design freedom, devices such as jigs and fixtures, inspection tooling, end-of-arm tooling, shop floor tooling, and tool inserts for injection molding can be produced faster with increased durability.

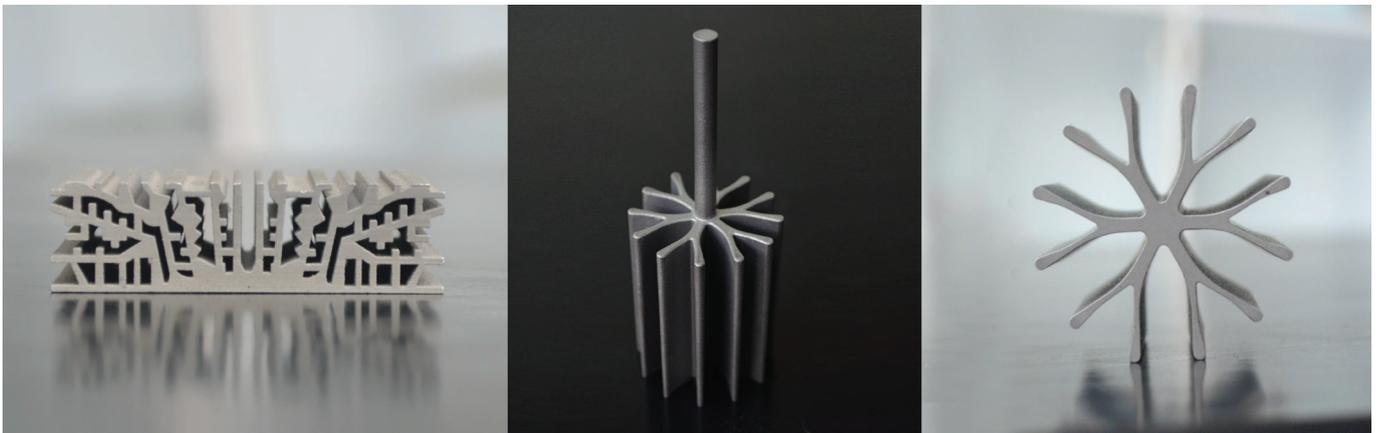
Design and Fabrication of Tooling Components with Additive Manufacturing

Cyient provides end-to-end services in the design and production of tooling components through additive manufacturing. Our service begins with the identification of the right parts, processes, platforms, and materials. We then take ownership of the optimization of tooling components, and provide customers with detailed inspection and test reports, assuring the finest quality. The additive manufacturing initiative at Cyient leverages the opportunities that the technology offers by adding value to an existing part, such as weight reduction, enhanced performance, part consolidation, reduced costs, and shorter lead times.

Our knowledge of conventional and additive manufacturing processes, experience in tool design and production, and deep domain expertise in multiple industries helps create real-world value for customers.

The critical differentiators of our AM service include:

- Dedicated tooling design team of 100+ engineers
- Experience in designing tools for aerospace and defense (A&D) OEMs
- Expertise in both polymer and laser metal printing services for tooling parts for A&D
- In-house materials experts
- Focus on R&D to improve the life and performance of tools produced through AM



BUSINESS BENEFITS

Cyient additive manufacturing services deliver multiple advantages for better tool quality. These include:

Conformal Cooling

Channels improve the performance of the tool and **increase throughput** with a more uniform and quick cooling mechanism around the manufactured component.



Light Weight Tooling

Shopfloor tooling can be produced in polymer material such as PA12 to help **improve the productivity** of workers.

Custom Tooling

Additive manufacturing allows for on-demand custom tooling, usually needed to perform machining operations on a complex part, to inspect parts, and also for testing.

Unlike conventional and time-consuming design and molding methods, AM techniques allow rapid prototyping to realize the design's feasibility.

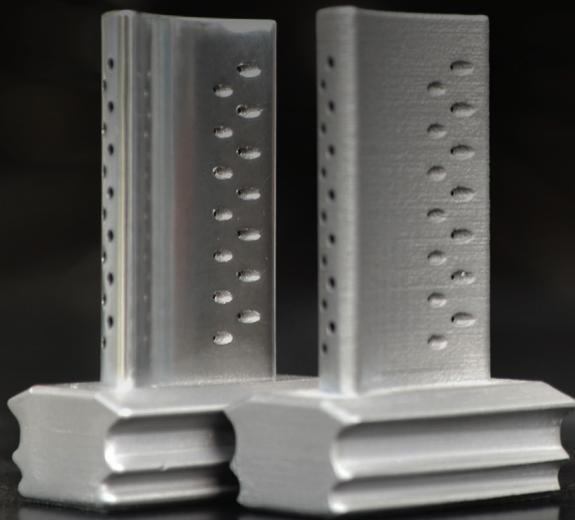
SUCCESS STORY

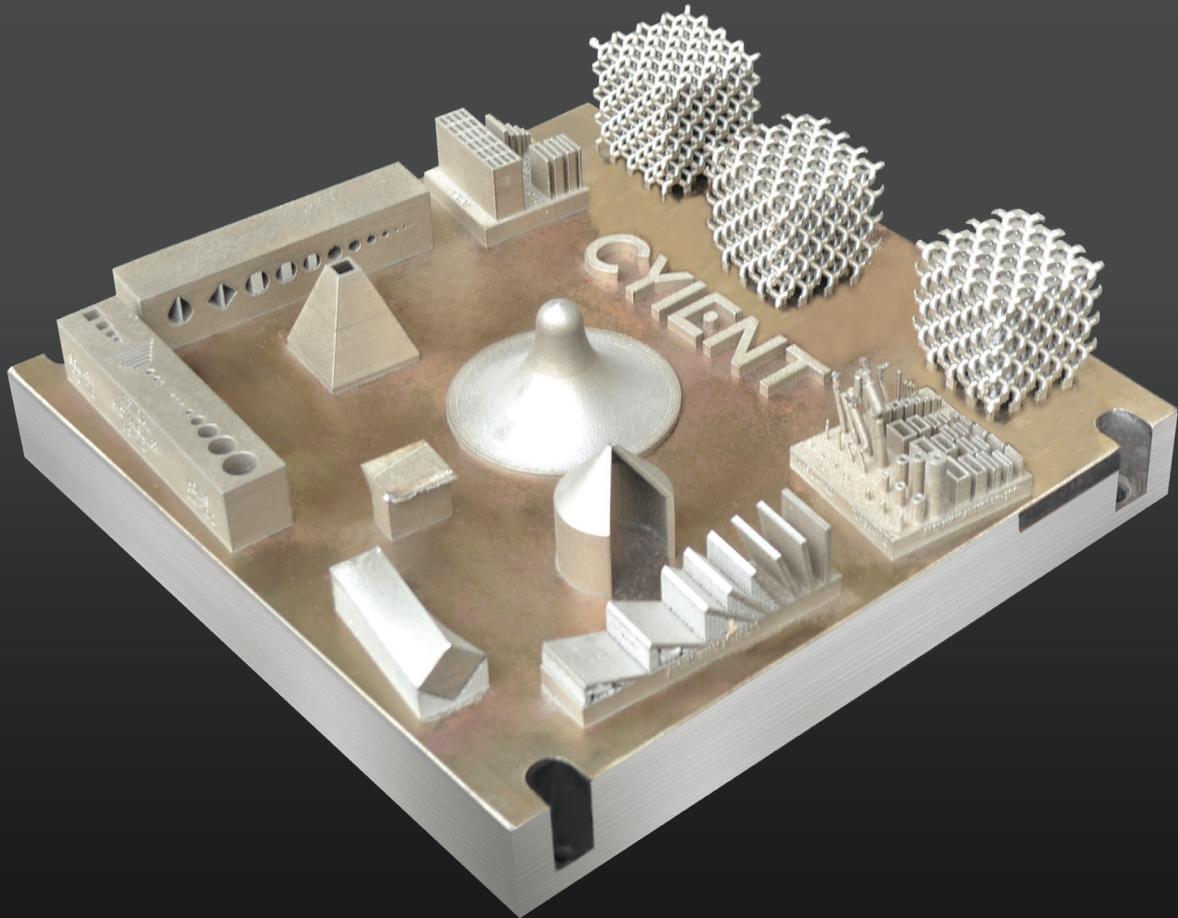
Customized 3D-printed inspection tooling in metal and polymer for a large aerospace OEM

A large aerospace OEM required a customized set of inspection tooling every week. This involved challenges such as high operation time, high material wastage, and increased lead time associated with the conventional manufacturing process. As the end-use of inspection tooling was for project development, there was a high likelihood of change in the design of inspection tooling components. The project scope included designing prospects for AM, 3D printing in metal and polymer, and post-processing quality inspections.

Cyient delivered a pilot set of 10 3D-printed tooling components, comprising metal and polymer parts within 10 days, which resulted in over 40% savings for the customer through reduced material wastage and lead time.

Based on this pilot, Cyient received a larger order for about 500 parts from the customer.





THE CYIENT ADVANTAGE

Our experience of more than 20 years in optimizing manufacturing processes, coupled with comprehensive expertise in digital technologies, provides the ability to transform tooling units across industries. We are committed to delivering high-quality products for our customers at optimized costs and accelerated time-to-market. Our consistent focus on performance, safety and reliability, and customized manufacturing solutions helps us to provide a measurable competitive advantage for businesses and industries.

About Cyient

Cyient (Estd: 1991, NSE: CYIENT) is a global engineering and technology solutions company. As a Design, Build, and Maintain partner for leading organizations worldwide, we take solution ownership across the value chain to help customers focus on their core, innovate, and stay ahead of the curve. We leverage digital technologies, advanced analytics capabilities, and our domain knowledge and technical expertise, to solve complex business problems.

With over 15,000 employees globally, we partner with customers to operate as part of their extended team in ways that best suit their organization's culture and requirements. Our industry focus includes aerospace and defense, healthcare, telecommunications, rail transportation, semiconductor, geospatial, industrial, and energy.

For more information, please visit www.cyient.com

Contact Us

North America Headquarters

Cyient, Inc.
99 East River Drive
5th Floor
East Hartford, CT 06108
USA
T: +1 860 528 5430
F: +1 860 528 5873

Europe, Middle East, and Africa Headquarters

Cyient Europe Ltd.
Apex, Forbury Road,
Reading
RG1 1AX
UK
T: +44 118 3043720

Asia Pacific Headquarters

Cyient Limited
Level 1, 350 Collins Street
Melbourne, Victoria, 3000
Australia
T: +61 3 8605 4815
F: +61 3 8601 1180

Global Headquarters

Cyient Limited
Plot No. 11
Software Units Layout
Infocity, Madhapur
Hyderabad - 500081
India
T: +91 40 6764 1000
F: +91 40 2311 0352