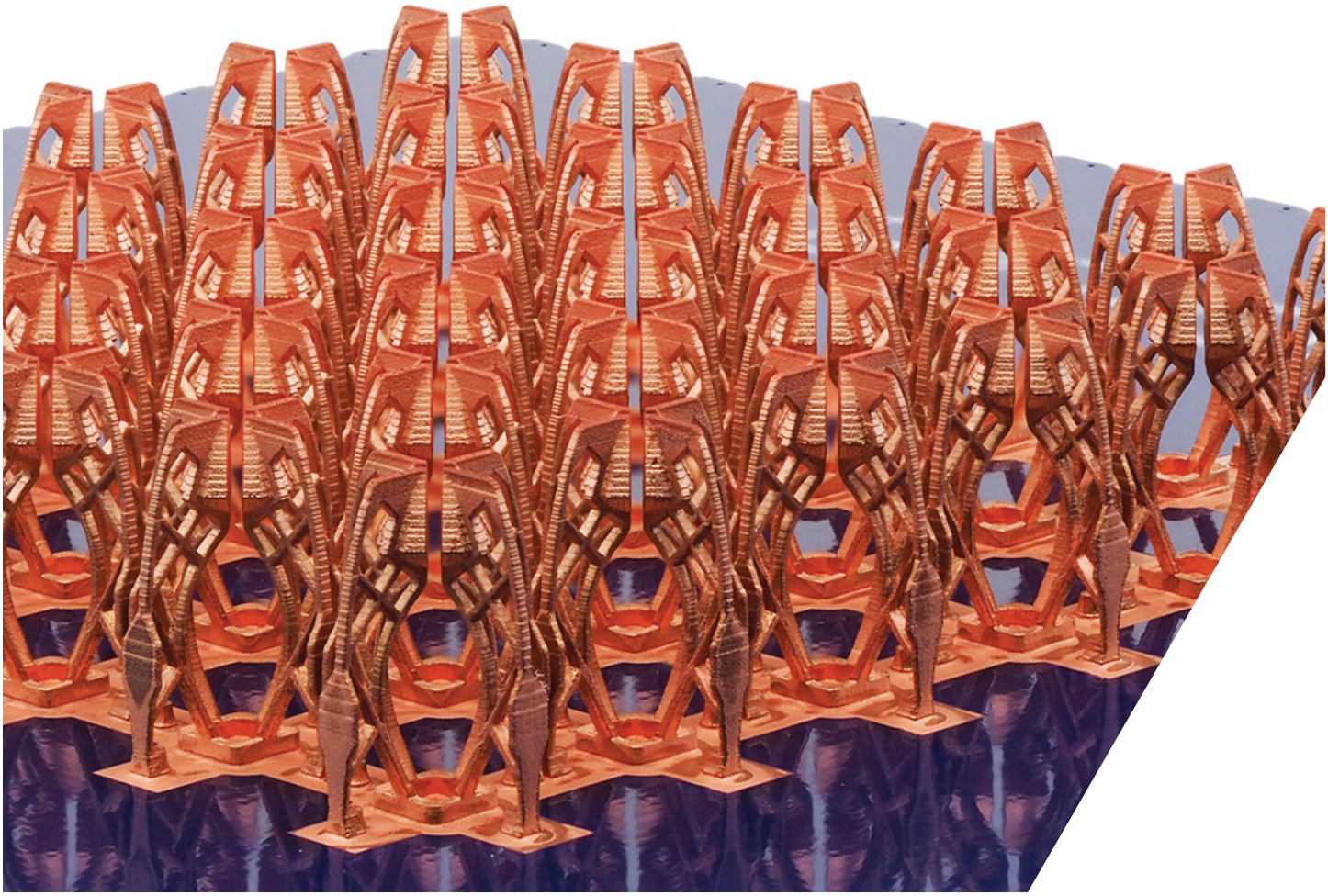


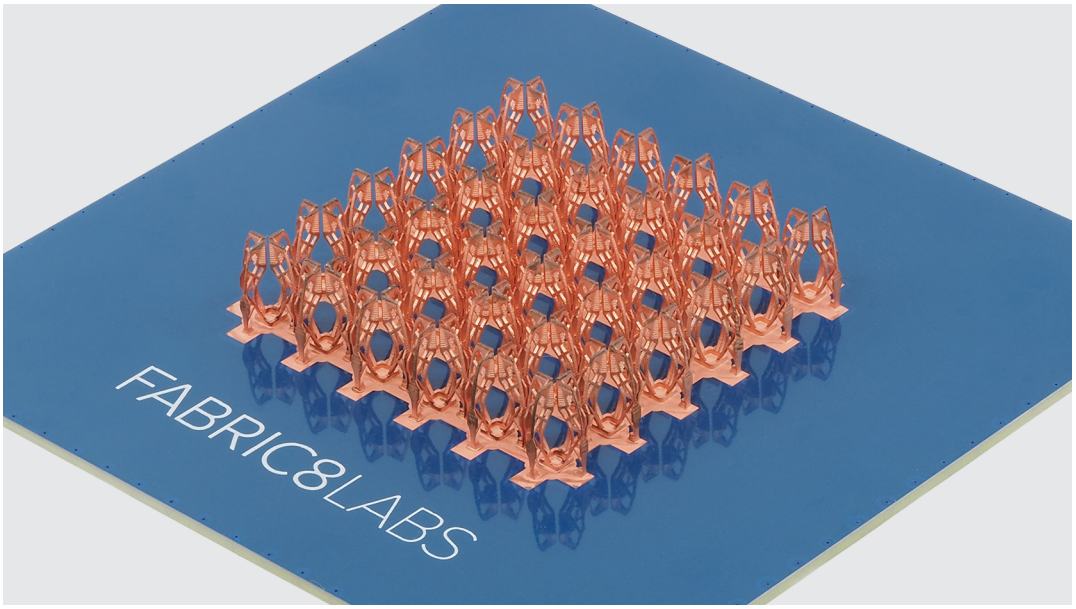
REVOLUTIONIZING MANUFACTURING

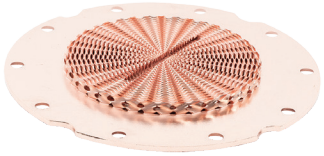
FABRIC8LABS ADVANCES ECAM 3D PRINTING TECHNOLOGY WITH ALTAIR ONE

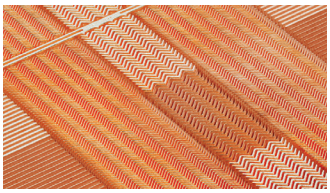
About the Customer

Fabric8Labs is revolutionizing manufacturing with its proprietary Electrochemical Additive Manufacturing (ECAM) technology. ECAM is a key enabler across multiple value chains, including electronics, communications systems, and semiconductor manufacturing. Partnering with customers to provide metal additive manufacturing services, Fabric8Labs enables the production of high-performance electronic components at scale. To support this, their engineers utilize high-performance computing (HPC) via Altair One® to run large solver jobs that simulate complex systems and interactions.

> By leveraging Altair One, our customers benefit from significantly faster turnaround times, receiving results much sooner and enabling quicker design decisions.
>
> Douglas de Aquino Castro, senior thermal engineer, Fabric8Labs







Fabric8Labs utilizes high-performance computing via Altair One to run large solver jobs that simulate complex systems and interactions.

Their Challenge

Fabric8Labs uses innovative metal 3D printing techniques to create advanced products for the thermal management and wireless communications (RF) component markets. The team relies on advanced tools to optimize component designs for their customers' chip power maps, simulate high-resolution antenna elements, and customize product designs to reduce size, weight, and power needs of the components.

However, running solvers — including Altair® AcuSolve® and Altair® Feko® — locally on workstations created a bottleneck. Engineers had to manage their own compute resources without software to organize workloads. This meant submitting jobs without queuing and waiting manually for one job to finish before submitting the next, limiting productivity.

Our Solution

To expand its computing resources, Fabric8Labs worked with TrueInsight to implement the Altair One cloud innovation gateway. Altair One is built on a powerful HPC backbone that gives users easy access, optimizes workload management, and efficiently scales computing resources to the cloud. Users can manage complex workflows, visualize data with user-friendly dashboards, and drive engineering advancements from anywhere in a safe, user-friendly environment that doesn't require specialized IT skills.

Altair One gave the Fabric8Labs team **instant access to powerful computing resources in the cloud**, where they used Google Cloud credits to create bring-your-own-cloud appliances in Altair One and run large solver jobs, including AcuSolve jobs with between 8 million and 150 million elements. With Altair One the Fabric8Labs team more than tripled their throughput on models/iterations per day.

Results

With expert support from TrueInsight and Altair, Fabric8Labs quickly adopted Altair One's intuitive interface, enabling users to leverage HPC with minimal effort. The Altair One gateway's built-in workload manager — part of the Altair® HPCWorks® HPC and cloud platform — simplifies queuing and eliminates the need for manual job tracking.

By offloading solver jobs to cloud appliances, the team preserved local computing resources for critical tasks like meshing and model setup. This efficiency allows Fabric8Labs to deliver solutions to customers faster. "**By leveraging Altair One, our customers benefit from significantly faster turnaround times**," says Fabric8Labs Senior Thermal Engineer Douglas de Aquino Castro, "receiving results much sooner and enabling quicker design decisions."

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