

Altair Inspire Print3D is an additive manufacturing (AM) product development and process simulation solution that enables teams to enhance part quality and minimize lead time and AM costs by reducing material usage, print time and post-processing. It provides a fast and accurate toolset for the design and process simulation of selective laser melting (SLM) parts.

Product Highlights

- Generate support structures as part of the design process, within the same environment as the designed part
- Embedded thermo-mechanical solver to accurately simulate the entire printing process from building and cooling to cutting and springback.
- Intuitive, process-driven user experience enabling users to gain deep manufacturing insights quickly

Additive Manufacturing (AM) is making the move from capability to capacity. No longer purely associated with rapid prototyping, research projects and advanced engineering teams, AM is now a viable, timely and cost-effective production solution to produce lightweight parts or to create timely tooling for manufacturing and assembly. Design for Additive Manufacturing (DfAM) is now a discipline with a unique design and simulation toolchain.

Inspire Print3D enables teams to cut product development and additive manufacturing costs by reducing material usage, print times and post-processing. It provides a fast and accurate toolset for the design and process simulation of selective laser melting (SLM) parts.

Engineers can quickly understand changes to process or design that affect manufacturing efficiency then export part and support structure geometry to major build processor software to produce the part.

Benefits

Reduce Manufacturing Cost

Minimize support structure, correct potential defects, such as part deformation, delamination and overheating before printing to effectively enhance product design and reduce post-processing efforts.

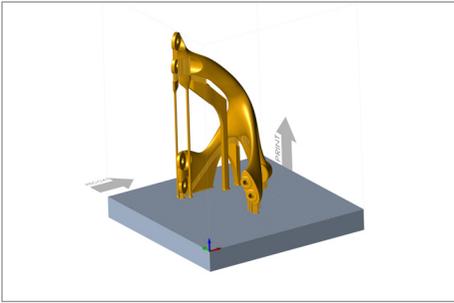
Increase Process Efficiency

From generative design to manufacturability assessment, use performance and manufacturing simulation tools in a single environment that is fast, easy, accurate, and affordable.

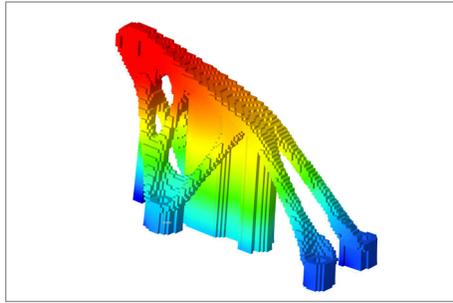
Design Optimal Parts

Create best performing designs for the SLM process by applying advanced thermo-mechanical simulation to reduce post-processing and avoid expensive trial-and-error.

Learn more:
altair.com/inspire-print3D



Users can quickly gain deep manufacturing insights in a process-driven user experience



Inspire Print3D includes advanced thermo-mechanical simulation for the SLM process.



3D-printed prototype of the Protean 360+ suspension arm, designed and produced by M&H CNC Technik

Capabilities

Part and Support Design

Generate support structures as part of the design process; interactively create and edit supports within the same environment as the designed part.

Easy-to-learn Environment

The intuitive, process-driven user experience enables users to gain deep manufacturing insights quickly, driving faster and better design decisions.

Printing Analysis

Run the embedded thermo-mechanical solver to accurately simulate the entire printing process from building and cooling to cutting and springback.

Identify Defects

Easily detect and plot defects - such as, part distortion, excessive heating, and springback - to aid design or process modification.

Materials and Printers

Select from the growing library of additive manufacturing materials and standard printers included or apply a variety of advanced options for a customized setup.

Ready for Printing

Assess the part layer-by-layer to validate its geometry even before any 3D printing analysis is performed, then export a file containing the prepped part and supports.

Scalable Solution

Process simulation scales almost linearly with computation resources to reduce significantly the time to attain accurate results, and allows end users to explore wide variety of alternatives quickly.

The Inspire Print3D simulation workflow comprises of seven process-driven steps:

1. Select and prepare parts for 3D printing
2. Configure the printer
3. Orient part(s)
4. Generate support structure
5. Preview slices
6. Export parts and supports for printing
7. Run thermo-mechanical analysis

Available as a module of the standard Altair Inspire installation, Inspire Print3D includes the following I/O interfaces:

Geometry Import

- ACIS
- Catia (V4 & V5)
- Creo
- IGES
- Inventor
- JT
- Parasolid
- Pro/E
- SolidWorks
- STEP
- STL
- UG NX (Unigraphics)

Geometry Export

- IGES
- Parasolid
- STEP
- STL

“The introduction of Inspire Print3D adds new possibilities and greatly enhances the capabilities for us to evaluate our designs and customer parts prior to manufacturing in order to react accordingly to any arising problems upfront. Being able to make unique parts correctly the first time is a competitive advantage promised with Inspire Print3D.”

Dr. Jukka Pakkanen, additive manufacturing specialist
M&H CNC-TECHNIK GmbH