



PREDICTIVE DIGITAL TWIN TECHNOLOGY

OVERVIEW

AlphaSTAR's GENOA 3DP is a cutting-edge simulation software for extrusion-based polymer AM.

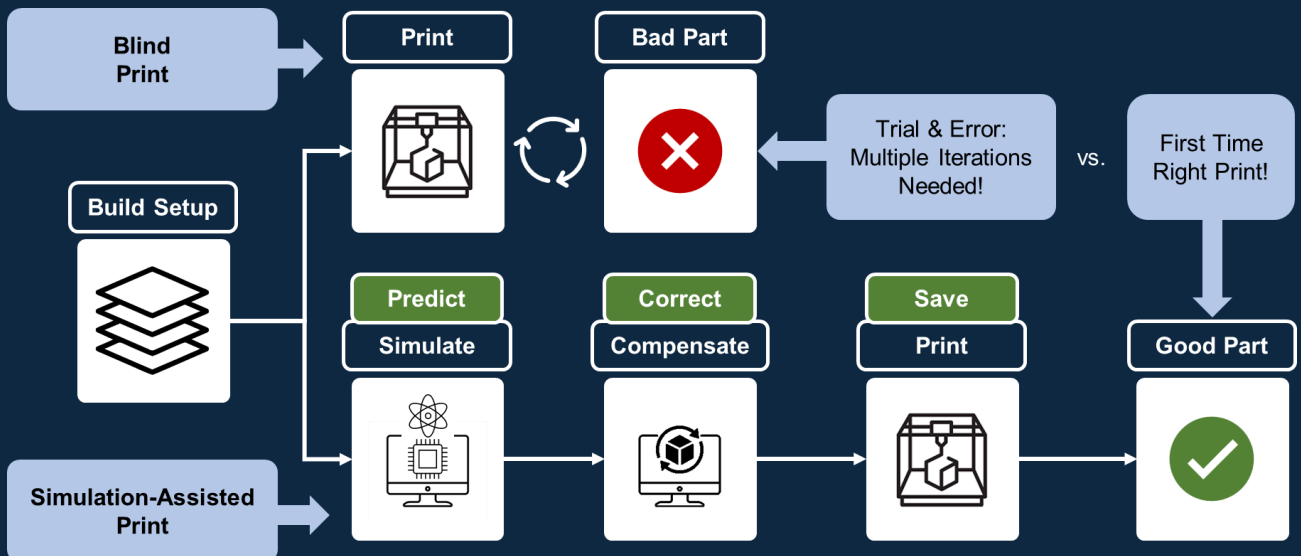
Our **HIGH-FIDELITY, PHYSICS-BASED ICME** approach leverages a digital workflow to ensure accurate first-time-right parts.

Our tools deliver value in applications from desktop FDM to Large Format AM (LFAM).

BENEFITS:

- Reduce print iterations, cost, and effort
- Faster time-to-market/ shorter lead times
- Increased reliability
- Accelerate DfAM processes to enhance production efficiency
- Available in Siemens NX Simcenter 3D platform

SIMULATION-CORRECTED PRINTS



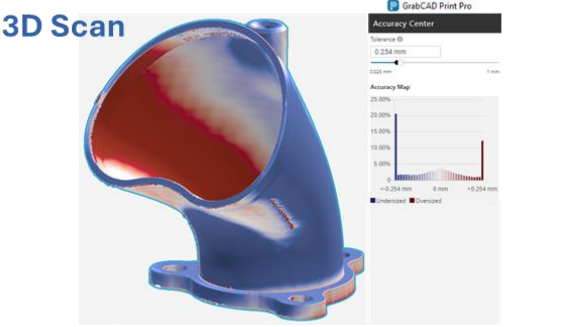
- Leverages machine G-code/toolpath to explicitly model all build features: supports, stabilizer walls, and other print characteristics
- Considers effect of material/ print anisotropy, build plate, chamber temperature, and post-build cooldown
- Built-in transient thermal solver for high resolution thermal predictions
- Mechanical build process simulation performed with preferred FE solver - Simcenter-Nastran® or Abaqus™
- Predict build defects (e.g., deformation, residual stresses, layer separation) and the effect of defects on part performance
- Predict and compensate for warpage to optimize print quality

VALIDATED ON HIGHLY-UBIQUITOUS PLATFORMS

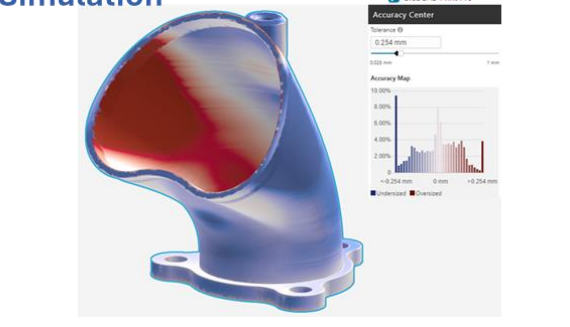
FDM

Distortion Map

3D Scan

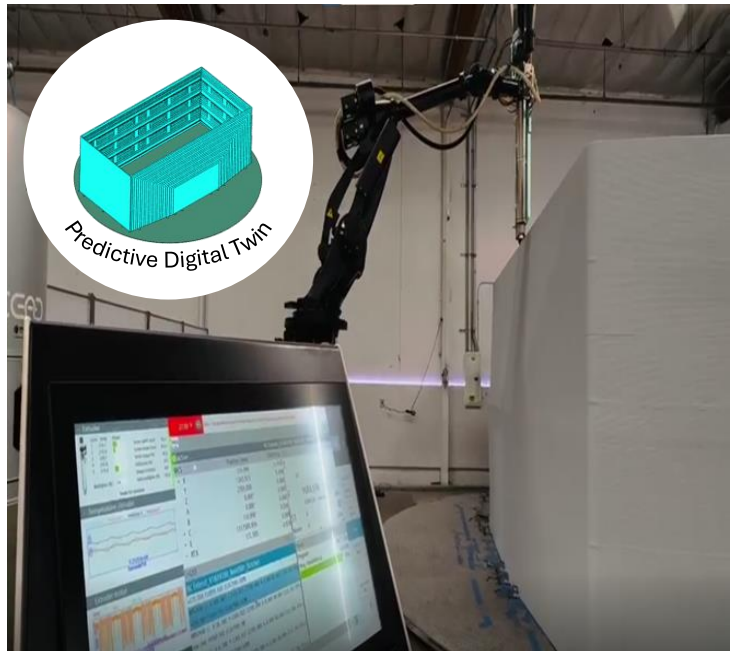


Simulation



Stratasys® F900 with ULTEM 9085

LFAM



CEAD/Sinumerik/KUKA system with rPETG+GF