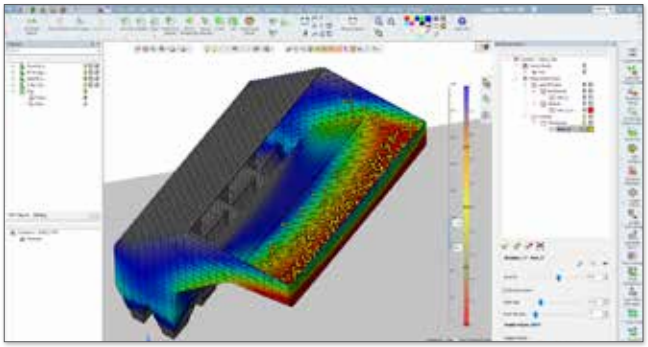
3D SYSTEMS

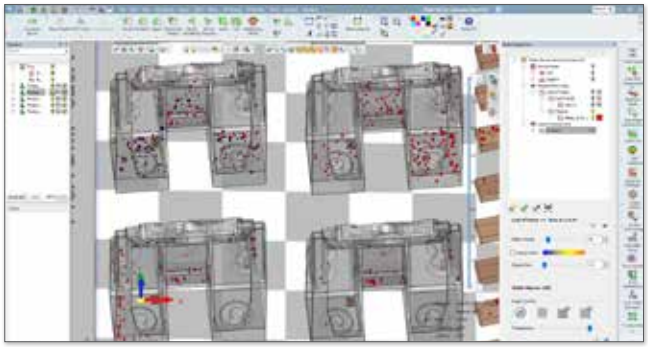
Learn more at
3dsystems.com/dmpinspection

DMP Inspection

Minimize costly post-build processing in Metal AM with automated analysis that correlates with conventional inspection methods

Speed up the validation process with 3D visualization, root cause analysis and correction in one single software solution. Make more informed decisions to effectively ensure consistent part quality and reduce costly secondary inspection in your production process.





SHORTEN VALIDATION TIME

All-in-one software solution:

- Identify - Incidents of lack of fusion and warpage
- Analyze - Root cause analysis with 3D visualization of areas of interest over the digital model and printing parameters
- Resolve - Easily take corrective actions and check if the issues are resolved

REDUCE COSTLY SECONDARY INSPECTION

- Automated algorithms detect lack of fusion and warpage, down-facing surface roughness and recoating quality
- Advanced 3D visualization tool allows to look into the part without having to take a CT Scan
- Save time and cost by making informed decisions before costly downstream post-processing and inspection

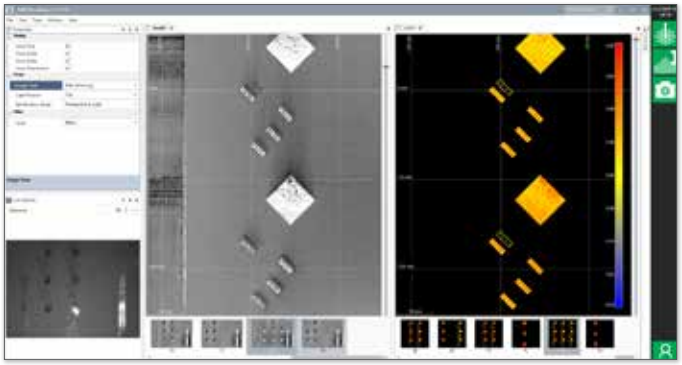
FEATURES

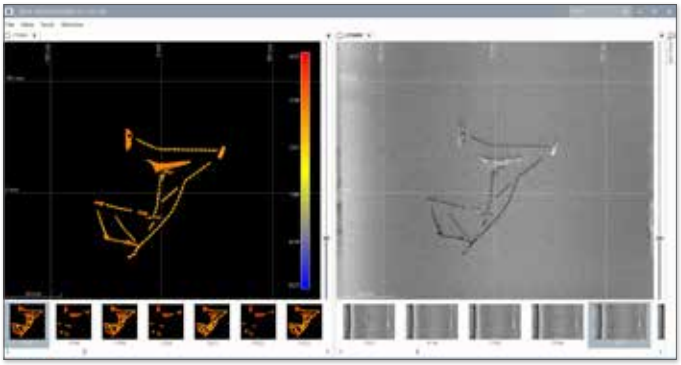
- Automated post-build detection of potential quality issues
- Advanced 3D visualization tools
- Root cause analysis and corrective actions in one single software
- Correlation with lack of fusion (LoF) found in CT scan data for defect > 200 µm verified experimentally in a study for a representative test variety of parts in LaserForm® Ti Gr23 (A) and Maraging Steel (A) printed on DMP 320 metal 3D printer
- Detection and 3D visualization of warpage
- Beta release includes algorithms for lack of fusion and warpage and is available for DMP 320 and 350 metal 3D printers
- DMP Inspection is available as an option within 3DXpert® All-in-one Metal AM software
- DMP Inspection requires the purchase and installation of DMP Monitoring

DMP Monitoring

Real-time process monitoring for informed decisions on product quality

Generate a wealth of process data for non-destructive analysis and understanding of metal 3D printing build quality, accelerated process parameter optimization and enhanced understanding of process results.





IN-BUILD REAL-TIME DATA COLLECTION AND VISUALIZATION

- Visually (manually) detect, analyze and minimize 3D metal printing inherent process effects such as: lumps, spatters, flow quality, porosities, feed quality, etc.
- Control and ensure that the process is running smoothly, monitoring consumables and maintenance items such as the coater and materials
- Remote monitoring capable for combined control from centralized space, e.g. using live camera and remote machine access*

POST-BUILD PROCESS ANALYSIS

- Analyzing Vision and Meltpool images synchronized side by side allows to monitor build quality on a macro level to e.g. ensure powder deposition quality
- The post-build analysis of DMP Meltpool images enables the user to further improve build quality by monitoring e.g. porosity on a micro level
- Use DMP Inspection for automated root cause analysis and corrective actions in one single tool

FEATURES

- Automatic data recording
- Fully configurable user interface
- Real-time job analysis, and offline functionality
- Synchronized side by side comparison of Meltpool and Vision data, comparison with previous print jobs (meltpool-to-meltpool, vision-to-vision, meltpool-to-vision)
- Synchronized zooming and panning through all jobs opened on screen
- Integrated live camera
- Video generation: sequential layers to video frames
- Coordinates and scale display on screen matching with build plate
- Measurement tool: line and surface
- Automatic back-up tool (to server or external data storage)

* Remote machine access requires standard 3rd party software

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