

Additive Manufacturing Infrared Inspection

Project Manager(s)/Lead(s)

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Sponsoring Program(s)

Human Exploration and Operations Mission Directorate
Space Launch System Advanced Development

Project Description

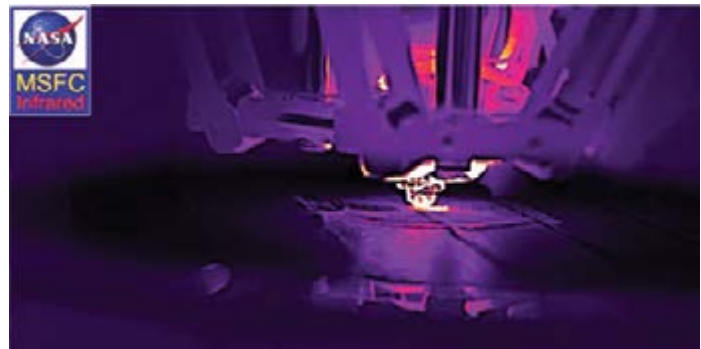
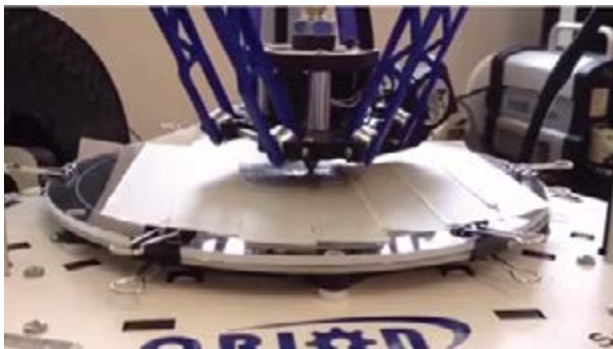
The Additive Manufacturing Infrared Inspection Task started the development of a real-time dimensional inspection technique and digital quality record for the additive manufacturing process using infrared camera imaging and processing techniques. This project will benefit additive manufacturing by providing real-time inspection of internal geometry that is not currently possible and reduce the time and cost of additive manufactured parts with automated real-time dimensional inspections which deletes post-production inspections.

Notable Accomplishments

The task successfully proved the feasibility of infrared hardware detecting an additive manufacturing process and developed custom software which created 3D geometry files of the additive manufactured part.

References

Crumbly, C.M.; Bickley, F.P.; and Hueter, U.: "Space Launch System Spacecraft/Payloads Integration and Evolution Office Advanced Development FY 2014 Annual Report," NASA/TM-2015-218201, NASA Marshall Space Flight Center, Huntsville, AL, January 2015.



Orion Delta 3D printer and manufactured part.