Fact Sheet

HP Multi Jet Fusion™ Technology

Disruptive 3D printing technology for a new era of manufacturing

Designed to advance and disrupt the 3D printing market, HP Multi Jet Fusion™ technology aims to introduce a new era of manufacturing, delivering higher productivity and quality at a lower cost.

Built on HP Thermal Inkjet technology assets, HP Multi Jet Fusion™ technology is a breakthrough innovation featuring HP intellectual property. These proprietary features include a unique synchronous architecture using multiple chemical agents that together resolve the fundamental limitations of current 3D printing systems. Leveraging decades of printing leadership, HP Multi Jet Fusion™ technology intends to support third-party innovation with an open collaboration approach to materials and workflow solutions.

HP’s Multi Jet Fusion™ technology strategy is to provide a platform for innovation that allows the world to realize the full potential of 3D printing. The new technology is designed to produce output that is both beautiful and mechanically useful with the ability to manipulate part and material properties, including form, texture, friction, strength, elasticity, electrical and thermal properties.

Features

- **Unique combination**—Quality that combines strength, accuracy, resiliency and finish for an overall product that is not currently possible at the speed and price HP is planning to deliver to market.
- **Ten times faster**<sup>(1)</sup> speeds—HP’s proprietary synchronous architecture can image an entire area versus one point at a time for breakthrough build speeds.
- **New levels of part quality**—HP’s proprietary multi-agent printing process, where multiple liquid agents are applied by HP Thermal Inkjet arrays, can drive new levels of accuracy with uniform part strength in all three axis directions.
  - The technology uses a unique multi-chemistry process, including a fusing agent that is selectively applied where the particles will fuse together, as well as a detailing agent that is selectively applied where the fusing action needs to be reduced or amplified. As one example, the detailing agent reduces fusing at the boundary to produce parts with sharp and smooth edges.
- **Full-color 3D print solutions**—Over time, HP plans to incorporate a full range of colors into a part, using HP color science expertise to bring the color capabilities of traditional printing into the 3D world.
• **Breakthrough economics**—Area-wide imaging and fewer steps drive improved performance for best-in-class total cost of ownership, and helping reduce energy and waste.

• **Open platform for materials innovation**—HP is developing a 3D platform designed to become an industry standard and inviting creative collaboration in materials.

• **Complete end-to-end solutions**—HP is driving the full potential of 3D printing through collaborative development in workflow solutions.

• **HP reliability**—Decades of HP product development expertise and printing leadership bring a complete 3D system built to HP quality standards and backed by HP’s global service and support.

**Go-to-market**

The core 3D printing technology capability is already a reality today. To ensure the full HP Multi Jet Fusion™ technology solutions deliver on the potential of the technology, HP is engaging early customers in the development process with its Open Customer Engagement Program, which enables HP to work with select customers for expedited solution product testing and feedback. This program is just another way HP is fostering open collaboration.

Availability of the end-to-end HP 3D printing system is planned in 2016, as the product and HP partners’ solutions meet the requirements and quality standards that HP customers expect.

1. Based on internal HP testing of part build time, for a set of representative parts in batch process comparing HP Thermal Inkjet based HP Multi Jet Fusion™ technology to the leading 3D printing technologies in the U.S.—selective laser sintering (SLS) and fused deposition modeling—as of October 2014.
2. HP Multi Jet Fusion™ technology leverages proprietary HP Thermal Inkjet technology, enabling lower cost systems that output similar quality to more expensive devices—such as selective laser sintering (SLS)—and speed.
3. Compared to selective laser sintering (SLS) and fused deposition modeling technologies, HP Multi Jet Fusion™ technology can reduce the overall energy requirements needed to attain full fusing and reduce the system requirements for large, vacuum-sealed ovens. In addition, HP Multi Jet Fusion™ technology uses less heating power than SLS systems for better material properties and material reuse rates, minimizing waste. Finally, the combination of breakthrough economics and speed amplifies the total cost of ownership advantage of HP Multi Jet Fusion™ technology.
4. Availability is subject to change.

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