Rayvatek Uses SLM Solutions' Metal 3D Printing Technology to Achieve Breakthroughs in Aerospace Materials

SINGAPORE, ASIA PACIFIC, July 19, 2023 /EINPresswire.com/ -- Recently, Rayvatek, an innovative metal additive manufacturing technology and service company, has showcased its breakthrough solutions in aerospace materials at several high-profile events. To develop these products, Rayvatek collaborated with SLM Solutions, the leading provider of industrial metal 3D printing machines, to overcome technical constraints associated with traditional manufacturing methods and deliver high-performance products with lower cost and greater efficiency.

Rayvatek, collaborating with SLM Solutions, overcame technical constraints to deliver high-performance products and achieve breakthrough solutions in aerospace materials with lower cost and greater efficiency.

Aerospace was one of the earliest industries to adopt 3D printing technology and continues to be one of the fastest-growing fields for the application of 3D printing globally. It is a key focus sector for SLM Solutions as its metal 3D printing technology is ideally suited to producing materials that meet the strict requirements of aircraft engine manufacturers for metallurgical and mechanical performance, enabling efficient manufacturing processes, superior product quality, and lower production costs.

In terms of weight reduction, which is crucial in the aerospace sector, SLM Solutions' selective laser melting technology can be used to manufacture integral thrust chambers that combine multiple parts into a single part. 3D-printed lattice structures and internal cooling channels help to improve part quality, reduce weight, and save fuel. SLM's technology is useful for small batch production of complex parts, enabling cost reductions and tool-free production, significantly shortening the development cycle.

Rayvatek emphasize the value of SLM Solutions technology in developing high-performance products and overcoming common pain points in aerospace materials manufacturing. For example, oxidizer injectors have highly complex internal passages that cannot be produced by casting and machining. These injectors are intricately designed to fit the engine and oxidizer

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tank, which would require the integration of multiple components if made using traditional manufacturing methods.

3D printing technology helps to overcome other constraints associated with traditional manufacturing methods. By using SLM280 3D printer, Rayvatek can manufacture injectors of different sizes through a single manufacturing process, accelerating testing and development and ultimately enabling more efficient injection of oxidizer into the combustion chamber, increasing thrust power for the launch vehicle.

Using 3D printing means that flow distributors can be printed in one piece, rather than assembled from several pieces, which helps to achieve the goal of smooth and even distribution. The SLM280 can fabricate hollow parts for impellers, reducing the weight and the moment of inertia of the product, thereby improving efficiency, reducing energy consumption.

The SLM280 can help Rayvatek to improve quality control and follow-up testing in the production process, and greatly shorten processing time to achieve cost reduction and efficiency increase.

CBO of Rayvatek said "We are delighted to cooperate with SLM Solutions, a leading metal 3D printing equipment manufacturer. Combining SLM's high-precision printing capabilities with Rayvatek's experience and expertise in the space industry allows us to develop and produce high-quality space components and expand our offerings to a wider range of sectors, including aerospace, maritime transport, electric vehicles, motorcycles, bicycles, heavy machinery and molds, and energy."

About SLM Solutions

SLM Solutions is a global provider of integrated metal additive manufacturing solutions. Leading the industry since its inception, it continues to drive the future of metal AM in every major industry with its customers' long-term success at its core. SLM Solutions is home to the world's fastest metal additive manufacturing machines boasting up to 12 lasers and enabling build rates of <1000ccm/h. With a portfolio of systems to suit every customer's needs, along with its team of experts collaborating at every stage of the process, SLM Solutions leads the way to return on investment with maximum efficiency, productivity, and profitability. SLM Solutions believes that additive manufacturing is the future of manufacturing and has the desire and capability to take its customers there. SLM Solutions is a publicly traded company headquartered in Germany, with offices in Canada, China, France, India, Italy, Japan, Singapore, South Korea, and United States. Further information is available on www.slm-solutions.com

About Rayvatek
Rayvatek is an innovative metal additive manufacturing (AM, 3D Printing) technology and service company. With a total area of 66,000 square factory buildings, first-class additive manufacturing equipment, and a senior professional team, we can provide overall solution of metal additive manufacturing. This includes 3D scan services (reverse engineering), design consulting, characteristic design, trial run verification and mass production as well other services to meet customers' needs.

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