



Facts

Challenge

Secure the technical availability of EOS systems for predictable and reliable serial manufacturing of 3D printed metal parts without internal AM expertise in machine service.

Solution

A customized EOS Service Agreement Premium ensures reliable serial manufacturing and machine availability while simultaneously sharing expertise with machine operators.

Results

- Maximum system availability of $\geq 95\%$
- Fast reaction time in case of system failure
- High process quality and stability
- Reliable cost and production planning



A look at the 3D printing shop floor at Siemens, in the Swedish town of Finspång – producing in series metal parts with additive manufacturing (Source: Siemens).

Siemens Industrial Turbomachinery counts on EOS 3D printing technology and customized services



Customized EOS Services for optimal system performance

Brief Profile

Siemens Industrial Turbomachinery AB (SIT AB), headquartered in Sweden, provides gas turbines.

Further Information

www.siemens.com

Increasing customer requirements and constant market changes demand a high degree of flexibility in manufacturing. In order to remain competitive in the long term and produce products of the highest quality, Siemens counts on EOS technology and services. In Finspång, Sweden, Siemens builds gas turbines for power plants and manufactures parts in series using industrial 3D printing from EOS. To economize profitably and maximize machine uptime, Siemens decided to take advantage of the reliable support provided by EOS Services. Besides maintenance and repairs, their tailored EOS Service Premium Agreement includes optimization of the entire manufacturing process, as well as internal development of machine handling know-how at Siemens.

Challenge

In the Swedish town of Finspång, Siemens Industrial Turbomachinery AB builds middle-sized industrial gas turbines. The term "middle-sized" is relative: The heaviest model, SGT-800, weighs 290 tons and has an output power of up to 57 megawatts, which is enough to generate electricity for a large industrial operation or a small community. Additive manufacturing is a revolution for gas turbine construction – and for many other industries. "We are

using EOS technology for rapid prototyping, rapid manufacturing and even rapid repair of industrial gas turbine burners," says Andreas Graichen, Head of AM Center of Competence at Siemens Finspång. "We are now capable of reducing the repair time of burner heads by more than 90 percent, compared to the time needed with conventional methods. With the additive manufacturing technology, we can give our customers exactly what they need: efficiency when producing components and cost

reduction when maintaining them." Several other parts are already in production, and many more are planned in the future. These figures demonstrate that the technical availability of EOS systems is essential for Siemens in order to secure predictable, reliable production. "And that's where we come into play," explains Alwyn Pryse, Service Manager UK & Nordic, talking about why Siemens decided on the customized EOS Service Agreement Premium.



Siemens Industrial Turbomachinery AB (SIT AB) headquartered in Finspång, currently operating multiple EOS systems. (Source: Siemens)

Solution

Over the next four years, Siemens will benefit from EOS Services and expertise, as a dedicated EOS service employee is sent to Finspång. "Many people believe that service only involves repairs, maintenance or a hotline. At EOS, we provide 360° customer service, which means that tailored solutions are the name of the game. We join customers where they are right now and accompany them on their way and at their own speed," says Angelika Cortazzo, Business Manager Service & Spare Parts at EOS. "When working with Siemens, our explicit goal is to support machine operators to such a degree that they can fully leverage the potential of the technology and system uptime," she explains. Having an EOS service employee present on a permanent basis makes it possible to react quickly and ensure high process quality, cost security, and predictability. As soon as the installation of the 3D printing system begins, the exclusive task of the service technician is to care for EOS machinery at Siemens. In addition to two larger general maintenance procedures each year, he continuously inspects the EOS systems and adapts his schedule to the timing of the Siemens production cycle. This ensures that there is no downtime and the machines are always available. At the same time,



The additive manufacturing shop floor in Finspång, Sweden, where Siemens builds gas turbines for power plants using industrial 3D printing technology by EOS.

any potential process optimizations can be identified, and training can be provided to the Siemens machine operators. Reliable processes mean optimal production results for Siemens.

Results

"We are very satisfied with the EOS Service Agreement Premium and expect that, in the long run, the need for general maintenance and the effort associated with it will be significantly reduced thanks to the ongoing support," explains Anders Persson, Operations Manager Additive Manufacturing, Siemens.

The EOS Service Agreement Premium ensures constant high manufacturing levels and secures technical system availability. "The premium service agreement with Siemens is just the beginning," says Dr. Adrian Keppler, CEO of

EOS. "In the future, we will offer customized service contracts to all customers with large EOS system parks so that we can fully match their needs. This offer is currently unique in the 3D printing market," he explains, commenting on future strategy. Thanks to EOS Services, customers can gear their production toward maximum value creation more quickly. "With the on-site premium service, our customers can outgrow their competition, because each service automatically develops the expertise of their machine operators," adds Angelika Cortazzo.

"The EOS Service Agreement Premium ensures reliable series manufacturing and machine availability, which helps make the investment more secure. 95 percent uptime and multiple EOS systems running simultaneously – We are very satisfied with the EOS Premium Service."

Anders Persson, Operations Manager Additive Manufacturing, Siemens.

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