

SLM Solutions At a glance



**Future
Manufacturing
Now**

SLM Solutions Group AG

SLM Solutions, headquartered in Luebeck, Germany, is a leading provider of metal-based additive manufacturing technology (also commonly referred to as „3D printing“). The company's shares are traded on the Prime Standard of the Frankfurt Stock Exchange. SLM Solutions focuses on the development, assembly and sale of machines and integrated system solutions in the field of selective laser melting.



SLM Solutions stands for technologically advanced, innovative and highly efficient integrated system solutions.

1970

Rapid prototyping in Lübeck: market maturity of prototype tooling

1996

Pioneering work and fundamental research by Fockele & Schwarze and the Fraunhofer Institute for Laser Technology

2003

Market maturity of selective laser melting technology and development of the SLM 250

2015

SLM Solutions Group AG grew its consolidated revenue by 96.0 % to reach EUR 65.8 million in the 2015 fiscal year (based on preliminary IFRS results), with the fourth quarter making an especially strong contribution with 116.3 % revenue growth

May 2014

Growth placed on a new foundation: EUR 75 million of growth capital raised by IPO on Frankfurt Stock Exchange

2011

Company renamed SLM Solutions after spin-off from the MCP Group; concentration on laser melting technology

2016

The share of SLM Solutions Group AG is to be included in the TecDAX equity index from March 21

2017

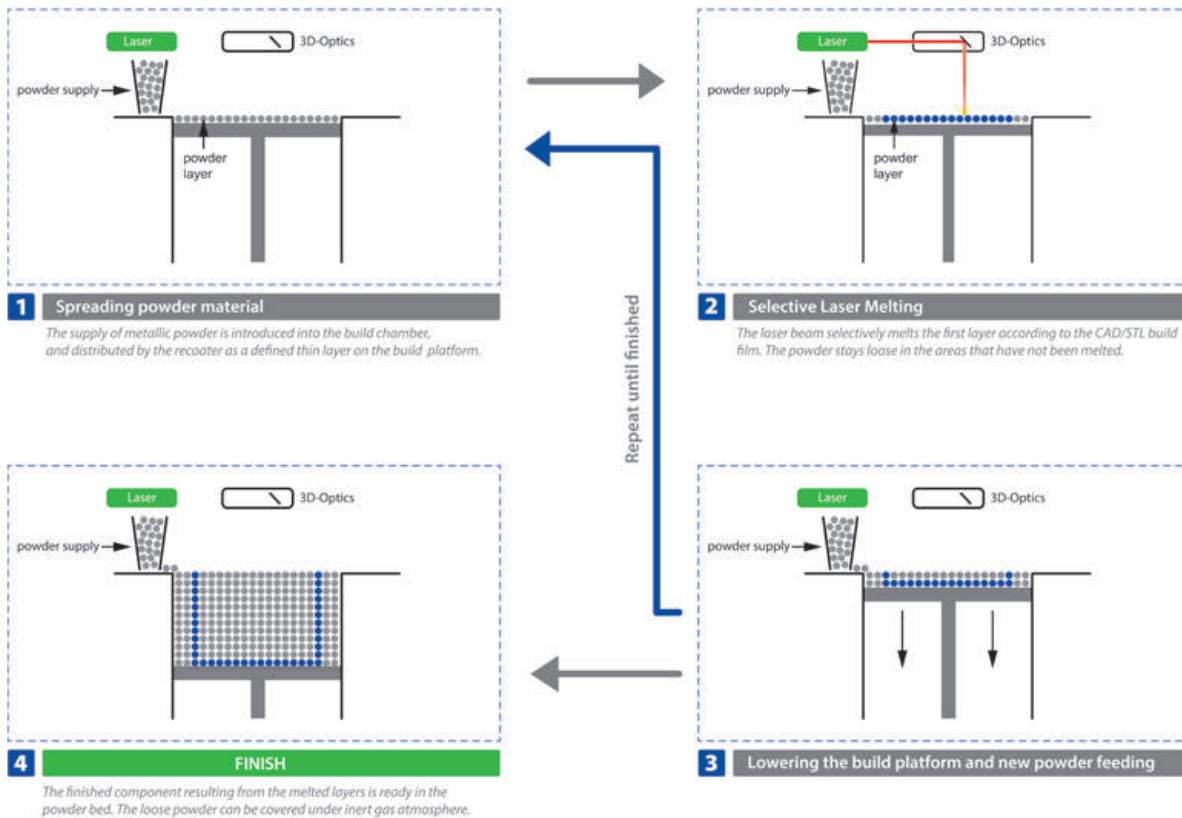
Topping-out ceremony for the new building
TecDax Growth Champion 2017

2018

SLM Solutions moved into the new headquarters in Luebeck-Genin with 25.000 m² on 70.000 m² of property area

SLM® Technology

SLM® technology offers diverse options in the metal-based generative manufacturing of parts, such as a new design and geometric freedom, lightweight construction through the reduction of part weight, significant advantages in terms of production speed and the manufacturing of internal undercut parts in low quantities.



3D printing versus conventional manufacturing

In scenarios involving the production of smaller series of complex metal parts, additive manufacturing is often

- **faster:**
build time reduced by up to 90 percent
- **more efficient:**
weight reduction of up to 60 percent, reduction in number of components of up to 95 percent
- **more cost-effective:**
reduction of part costs of up to 70 percent
- **more flexible:**
„complexity comes for free“
- **in higher quality:**
superior materials properties such as density, stability, temperature and corrosion resistance, surface structure and biocompatibility

SLM[®] Machines



SLM[®]125

The Selective Laser Melting Machine SLM[®]125 offers a build envelope of **125 x 125 x 125 mm³**. The **flexibly applicable machine with high productivity** is equipped with a single fiber laser (1x 400 W) and produces high-quality metal parts.

The **precise and economical** SLM[®]125 has been designed for quick results in the research and development sector, as well as for the **production of smaller metal parts**.



SLM[®]280 2.0

The Selective Laser Melting Machine SLM[®] 280 2.0 provides a **280 x 280 x 365 mm³** build envelope and a **patented multi-beam technology**. During the build process up to two fiber lasers expose the build field via a 3D scan optic.

The **high-performance machine** is available in several configurations, providing single optics (1x 400 W or 1x 700 W), dual optics (1x 700 W and 1x 1000 W) and twin optics (2x 400 W or 2x 700 W). Depending on how the manufactured parts are arranged, a 80% higher build rate can be achieved. In addition, the **patented bidirectional powder coating** helps to reduce the manufacturing time of individually manufactured metal parts.



SLM®500

The Selective Laser Melting Machine SLM®500 provides a large build envelope of **500 x 280 x 365 mm³** and the **patented multi-beam technology**. In the high-performance machine, four fiber lasers (4x 400 W or 4x 700 W) are in action simultaneously, increasing the build-up rate by up to 90 % compared with the twin configuration (2x 400 W or 2x 700 W). The universally usable machine with **high productivity** is perfectly suited for **series production of complex metal parts** and it is specifically designed for use in the production environment. An extremely comprehensive basic configuration and the large choice of options enable application-oriented machine configuration.

With three times higher gas flow, the robust SLM® machine produces parts with the highest density and surface quality. Soot is removed from the process chamber efficiently and reliably, even for the longest duration builds.

SLM® Industries

Customers from highly varied sectors utilise our machines to produce complex metal parts for a large number of applications – from dental prostheses through to turbine blades. All of these products have one thing in common: they must meet the highest standards in terms of stability, surface structure or biocompatibility. And the number of utilisation scenarios is on the rise: almost all geometric forms are possible.

Aerospace

Application example

Gooseneck Bracket

Build Job Data

SLM®280 Twin

Material: Ti6Al4V

Benefits of SLM® Process

Enabler for new topology optimized design



Automotive

Application example

Gear Box Housing

Build Job Data

SLM®500 Quad

Material: AlSi10Mg

Benefits of SLM® Process

Weight Optimization of 30%



Energy sector

Application example

Glass-lined high pressure reactor

Build Job Data

SLM®280 Twin

Benefits of SLM® Process

Integrated temperature channel without support structures



Mechanical engineering

Application example

Forge-SLM®-Hybrid

Build Job Data

SLM®280 Twin

Material: AlSi10Mg (SLM®)
+ AlMg4,5Mn (forged)

Benefits of SLM® Process

Optimized cooling channels only buildable by additive manufacturing

New constructive freedom with regard to complex geometries



Dental prostheses & Medical technology

Application example

RPD Framework

Build Job Data

SLM®125

Material: CoCr

Benefits of SLM® Process

Precision, Mass Customization,
Productivity and Cost Advantages



Universities and Institutes

Modern engineers will find new solutions to the problems of traditional manufacturing on a daily basis.

About SLM Solutions

The Lübeck-based SLM Solutions Group AG is a leading provider of metal-based additive manufacturing technology. SLM Solutions focuses on the development, assembly and sale of machines and integrated system solutions in the field of selective laser melting.

SLM® technology offers diverse options in the metal-based additive manufacturing of parts, such as a new design and geometric freedom, lightweight construction through the reduction of metal part weight, significant advantages in terms of production speed and the manufacturing of internal undercut parts in low quantities.

Our products are utilized globally by customers from the most varied sectors, particularly in the aerospace, automotive, tooling, energy and healthcare industries, as well as in research and education.

They particularly value the following advantages of our technology partnership:

- Highest **productivity** using patented multi-laser technology
- Highest material density and **part quality** through our innovative gas stream management
- Completely closed **powder management** in an inert gas atmosphere
- Cutting-edge process monitoring using various **quality control modules**
- Multilingual open **software architecture** with customer adaptability
- Ultracompact **modular design**
- Long-term and **confidential customer relationships**
- **A technological leader and pioneer** in metal-based additive manufacturing with decades of market experience

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