The interconnected manufacturing solution.

We offer you countless complementary programs which optimize all processes, offer multiple functions and thus substantially simplify your internal processes. All products can naturally be integrated into existing process chains and offer, in combination, the total solution for additive production.

**Additive.Designer®**
Additive.Designer® is a diverse and scalable software solution for easy data preparation of complex components in additive production.

**Additive.Palletizing**
The flexible solution for automation. From your design idea to serial production to the finished product.

**Additive.Quality**
The new product line from SLM Solutions for process monitoring and quality assurance in the additive production process.

**Additive.Plant**
More information soon available...
Additive.Quality is a brand of SLM Solution to guarantee component and process quality during the SLM® process. The combination of hardware and software products guarantees the documentation of component-specific data across the entire additive production process. The analysis of the detected data and the subsequent evaluation via specially-developed algorithms enable the user to not only control the process, but also sustainably reproduce the finished component.

AN OVERVIEW OF THE ADVANTAGES
Quality assurance – what does this mean for SLM®-produced components?

- **Guaranteed Component Quality**
  - Reduce and/or prevent quality fluctuations in your components
  - Identification of universal, global and local component defects
  - Comprehensive overview of component quality through selected process monitoring modules

- **Process Monitoring**
  - Real-time process monitoring through carefully-selected systems
  - Various optical systems for an optimal quality image
  - Documentation of the sensor data for validation and qualification

- **Reproducibility**
  - Documentation and traceability of the specific quality features across the entire additive production process
  - Improving reproducibility through the exact monitoring of component features

- **Process Stability**
  - Identification of important process and environmental influences
  - Improved process control
  - Improvement of the process stability of SLM® machines

- **SLM® Process Concept**
  - Deeper understanding of the SLM® process for the development of your knowledge database
  - Indication of influences and correlations which primarily determine the component quality
ADDITIVE.QUALITY – THE PRODUCTS

Overview

ADDITIVE.QUALITY
Additive.Quality currently encompasses the products melt pool monitoring, laser power monitoring and recoating monitoring and controlling. Furthermore, the measured data from the sensors within the entire machine and live images of the process chamber are an important part of the product line.

MPM
Melt Pool Monitoring (MPM) is an on-axis tool for the visualization of the melt pool during the SLM® process. The system records the heat radiation created from the melting during the entire production process. The system is utilized in order to detect errors which can be created during the fusing of the powder.

LPM
Laser Power Monitoring (LPM) is an on-axis monitoring system which measures and documents the prescribed target and the attained actual laser performance continuously during the entire production process. In so doing, any deviations between the target performance and the actual performance are identified.

LCS
Layer Control System (LCS) is a testing and documentation system that has been specially developed for the SLM® process which monitors the powder bed and detects any possible irregularities during the coating process. LCS detects flaws during the coating process and responds before damage occurs during the process.

SENSORS
The sensor system encompasses all sensors installed in the machine. This system can detect indications of irregularities and deviations which may compromise the desired component quality.

LIVE CAMERA
The camera is a live transmission of the process chamber within the SLM® machine. It enables the live monitoring and documentation of the process. In addition, it is possible to record the production process in order to conduct an analysis of the recorded image at a later point in time.

"Highest standards of quality assurance during the additive production process.”
The Additive.Quality Software Suite combines all available modules of the brand in one application. Thus, the customer receives not only the advantages of each individual Additive.Quality module, but also receives the possibility of conducting a correlated analysis of the captured process monitoring data. In this regard, any managed workflows help the user to obtain a report regarding the quality of his documented component. Thus, all process-relevant data can be centrally accumulated, documented and evaluated. The data from the various Additive.Quality modules can be combined and correlated as desired. The real-time monitoring of the construction process enables the user to intervene in the case that irregularities are discovered in order to detect and/or prevent a printing error during the build job. Later, the acquired knowledge can be used for the selection of the best-possible parameter settings for your component.

“Our tool for guaranteeing documented and reproducible component quality.”