

ADDITIVE ENTERPRISES CLOUD MANUFACTURING AND NETWORKING (ACLOUD)



ACLOUD PROJECT GOAL

By employing theoretical and empirical process models as well as cloud services, the ACloud project aims to improve the Additive Manufacturing production process & line level operation, including advanced production planning, Enterprises Resource Planning (ERP) and scheduling.

These tools are integrated on a platform software that offers awareness to the producer regarding the working condition of the machine and the process performance as well as executes the production scheduling based on the machine availability, the raw material availability, the predicted duration of the process and the product requirements

The utilization of this platform on the production line also ensures the secure storage of production data in cloud in order to be available for future post processing and from different devices



ACTIVITY GOAL

This platform aims to provide with flexibility and significant cost savings the industrial world, primarily SMEs, by indicating the optimized values for the process parameters in terms of energy and time savings as well as product quality.

LINK TO INDUSTRY

- Increase the profit margin by optimizing the production planning and ERP scheduling
- Process & Line level operation optimization and production flexibility
- Reduce the expenses for “try and error” solutions
- Create data bases for different AM machines and materials
- Store production data in cloud. Accessibility from every device that is connected to a network.
- Real Time monitoring of the working condition of the 3D printer.

BENEFITS

- Improve the process understanding and how the several process parameters affect the process performance and the product quality
- Create products with the desired quality with the first try
- Minimize the material waste either by selecting correct process parameters or by optimizing the required mass for support structures with the aid of models.
- Increase the productivity in an efficient way, by identifying the efficiency map of the 3D printer.
- Improve production planning, reducing the machine idle time and the energy consumption during this time.
- ERP scheduling: Order raw materials based on the demand and the predicted material consumption
- Prevent malfunction / damage of the equipment by utilizing tools that analyze data from real time monitoring of machine working condition.
- Make the most from the equipment: experimental work based on proposed guideline and monitoring equipment to identify the efficiency and the limits of the process.

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