SOFTWARE
CADS Additive

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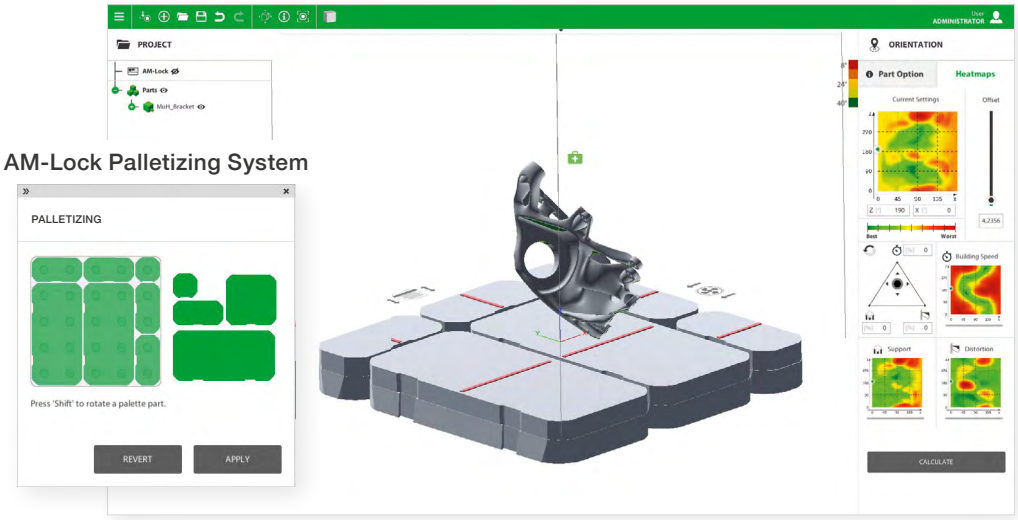
AM STUDIO

Your Path to Component Processing – Simple and Fast.
AM Studio: Successful Data Processing for Additive Manufacturing.

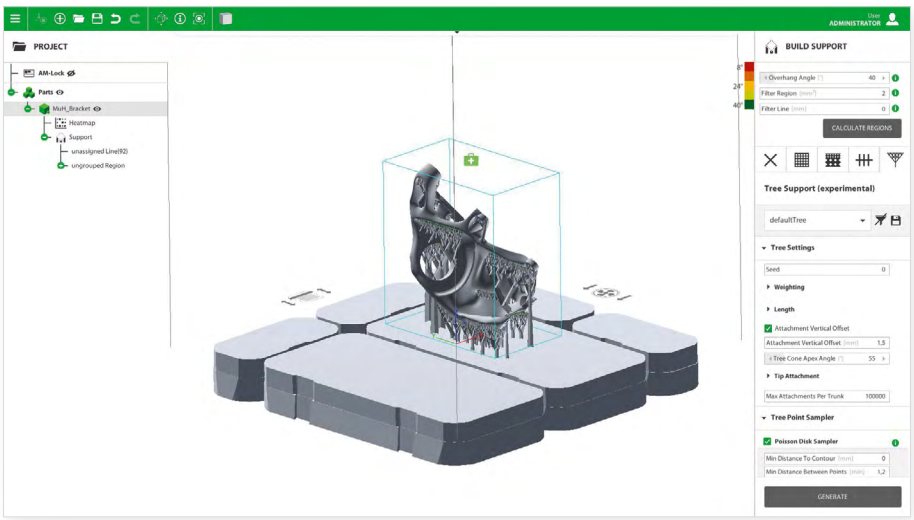
THE DESIGN PROCESS
IN 6 STEPS

1 Start — 2 Orientation — 3 Support — 4 Nesting — 5 Build Strategy — 6 Viewer



1 Start. During the first step, the desired machine is selected and the components to be manufactured are imported. Is your machine already equipped with the **AM-Lock** Palletizing System? If yes – on which pallet configuration is the component supposed to be printed? You will have the choice between various layouts.

2 Orientation. The orientation selects the various features of the component such as, for example, construction time, quality, support structure, warping tendency, etc. Via the user-friendly OrientationMaps, the best position for the component is determined and depicted. A manual orientation is likewise possible.



3 Support. AM-Studio groups all areas to be supposed into support regions. These regions can be filled with individual support structures. The model tree offers a transparent visualization of this. The support library covers not only the industry's standard support geometry types of Block, Rod and Line, but rather offers additional options via the special geometries of Tree and AdaptiveCell. They save material and time also simplify the component post-processing.

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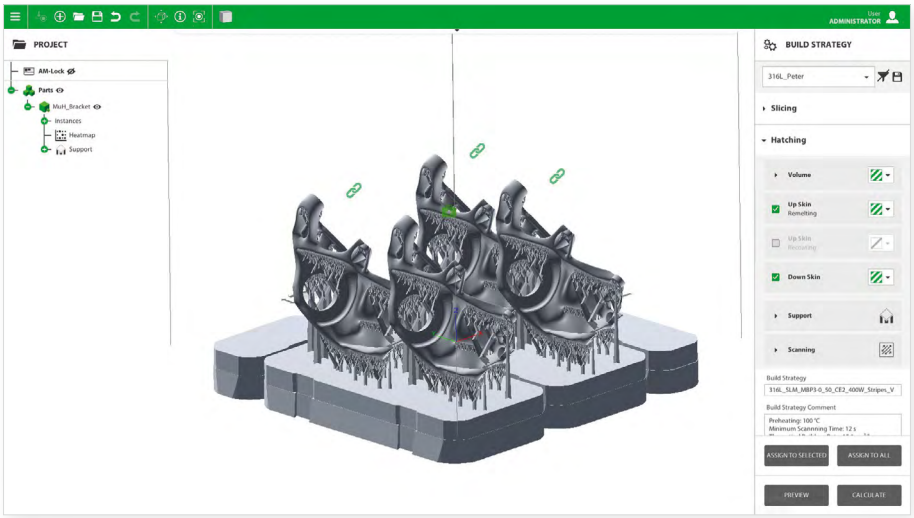


4 Nesting. Multiple instances (copies) of a part are reproduced as a matrix model. Changes are transferred via a mother-child relationship 1:1 to the instances which guarantee identical construction parameters.

5 Build Strategy. The required process parameters are defined and categorized. In this regard, both standard parameters as well as also additional **CADS Additive** specific expanded parameters can be used. Upon this basis, the construction slices are created.

6 Viewer. The last step before production is the examination of the slices that have been created. The various slice areas of Volume, Border, Down-Skin and Up-Skin are visualized for better depiction in various colors. After the verification, the processed data are exported into a desired file format. The **AM-Studio** supports a wide array of file formats. In addition to the native .slm format, slice data can likewise be issued in the following formats: .cli, .mtt and .ntn. Other types and procedures are possible at any time as required.

POST-PROCESSING
HIRTISATION®

If you are a user of the Hirtisation® process, we can offer you the suitable algorithm for the optimization of your components for this form of post-processing. As a user of a zero point tensioning system*, export functions will also be made available to you for the further processing of your data in CAM environments.

* For the SLM process, the tensioning system called **AM-Lock** from Peter Lehmann AG that has been registered for patent right protection has proven itself to be the optimal solution.

Component Geometry © M&H CNC TECHNIK GMBH

KEY BENEFITS
AM-STUDIO

Additive manufacturing encourages design freedom and efficiency. Why thus unnecessarily waste time for the processing of your components for 3D-printing? Via the **AM-Studio**, we offer you a lean and efficient tool which will substantially reduce your Time2Print. Our guided process will lead you through the most important steps of data processing and will support you during the decision-making for good component orientation, the correct support geometry model and the suitable light exposure strategy. The **AM-Studio** will enable you to implement successful and situation-specific data processing for additive manufacturing – intuitively and without expensive special training.

Comprehensive Development Competence

As an experienced CAD development partner, **CADS Additive** is able to fulfill the requirements prescribed by the machine manufacturers and users directly into the software solutions. Since 2016, the requirements have been integrated directly into the development of the **AM-Studio**. The result encompasses features and functions which far surpass the customary market standards and are adaptable at any time to company-specific needs as well as they can also be even more individualized by the user.

Automation Option

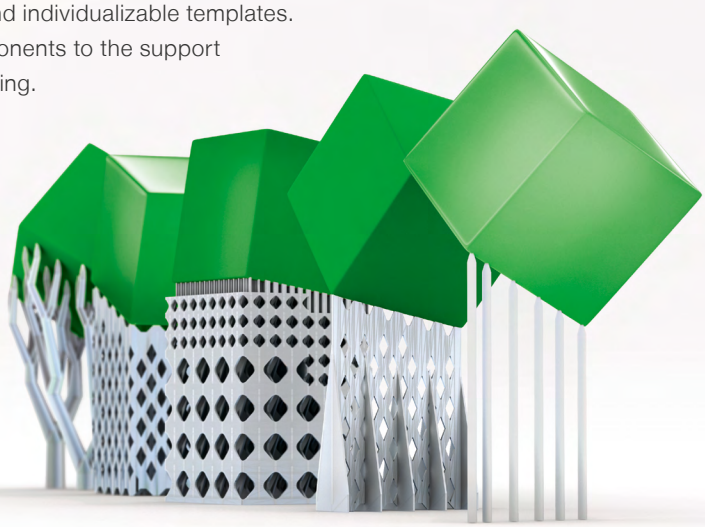
Often, processes must always be implemented in the same manner – regardless of whether it concerns legal guidelines or financial considerations. The **AM-Studio** can be adapted in such a manner that the data processing procedure – from the data import to the generation of the construction job – can run in a fully-automated manner and thus the same quality parameters are always used. Requirements-oriented, individualized, secure!

Best Orientation

Your success in additive manufacturing rises and falls with the suitable orientation of the components in the assembly space. Based on various quality criteria, the **AM-Studio** determines the ideal orientations in the sense of construction time, the required, but minimal support geometry, of the thermal warping to be expected as well as the surface finish quality to be expected.

Constantly-Updated Support Geometry

Regions to be supported are grouped clearly whereby simple support for the individual division or entire components becomes possible. Novel, metal-optimized Tree and AdaptiveCell supports enable up to 40 % time, volume and material savings. The fully-parametrizable support geometries can be created in a some-what automated fashion via pre-defined and individualizable templates.
Optimized connection points for the components to the support geometries enable simplified post-processing.



OVERVIEW
CADS Additive. Modules

We develop highly-specialized software components for the additive manufacturing process. The components are modularly-structured and offer support along the entire process chain – from the product idea to the supplying of the finished product. They can be integrated into the existing software platforms (e.g. CAD providers) or delivered as a stand-alone software suite.

ORIENTATION MODULE
Additive. Optimo

The Foundation: AM-Optimal Component Orientation. The vision of additive manufacturing is additive-specific design and component layout based upon the criteria required by the respective AM-technology. However, as the preparer of the data, one is frequently confronted with components that have been constructed based upon classical criteria. For additive manufacturing, generally other manufacturing criteria are nonetheless valid. **Additive.Optimo** enables the fast selection of suitable component orientation based upon the quality criteria of the additive manufacturing technology that has been selected in order to enable the attainment of the best manufacturing results for these component families.

SUPPORT MODULE
Additive. Support

The Cornerstone: Stable Support Geometries. Whoever would like to obtain good final results in additive manufacturing needs both the right manufacturing strategy as well as also optimal support geometries. Thus, the **Additive.Support** module covers not just the standard industry support geometry types, but rather offers many process-related improvements. The algorithm in **Additive.Support** helps to save materials and construction time without compromising stability.

SLICING MODULE
Additive. Core

The Centerpiece: Calculation and Processing of Slice Data. In the case of complex components, the calculation and optimization of slice data result in enormous data quantities which quickly push the user's PC hardware to its limits. The **Additive.Core** module is high-performing while nonetheless requiring extremely-low resource consumption. Even very large-scale geometries can be calculated on customary industry notebooks. The resulting neutral file format can be used for various additive manufacturing processes and by diverse system manufacturers.

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