ADDITIVE MANUFACTURING SOFTWARE TOOL
Preparation of CAD data for 3D printing

With 4D_Additive, CAD data of all major 3D formats can be processed for 3D printing within the shortest space and with the optimum printing results.

DATA IMPORT AND REPAIR
B-Rep Healing and direct modeling functions ensure a seamless process as well as optimal data quality of the converted and for 3D printing optimized models. They can be saved in amf, 3mf and STL format for all machine Types and manufacturing methods. The proven healing functions for CAD models automatically fill gaps and correct overlapping elements, twisted faces, and other geometry errors. In interactive mode, filter functions allow you to locate the geometry errors and fix them in seconds with the help of the clean-up functions.

GEOMETRY OPTIMIZATION FOR ADDITIVE PROCESSES
Within 4D-Additive CAD models can be modified as an intelligent B-Rep geometry through robust "direct modeling" functions, which has clear advantages over a process based on tessellated models. Optimization can be achieved by de-featureing and modifying critical areas of the geometry, as well as merging small surfaces which results in an efficient reduction of complexity. The modern, structured and simple handling graphical user interface of the software allows the easy generation of offset surfaces. The unique scaling function is able to deform models differently along the three major axes to compensate for shrinkage or distortion.

ANALYSIS OF MODELS FOR ADDITIVE METHODS
Through the user defined slicing parameters, the roughness for all areas of the part can be predicted and is afterwards visualized by an additional colour scale. The part can be aligned manually or automatically by system, to guarantee the best selected surface quality.

Measuring functions and analyse functions can be used for critical areas, to certain the manufacturing process. Furthermore, the collision and internal gap test enable to detect problem areas and small details. In addition, the calculation of surfaces, volumes and installation spaces takes place. The CAD geometry is analysed with special test profiles regarding the different rapid manufacturing processes. All analysis can be summarized in freely definable test reports and executed automatically in batch mode, even over a large number of models.
METAL PRINTING
Support structures for manufacturing as well as Lattice geometry for lightweight construction and material savings can be created easily with new functions especially for metal printing processes. The Direct Modeling functions ensure maximum freedom when editing the models. For the Lattice structures different shapes can be chosen - for example honeycomb, octet or centerpoint shaped structures.

NESTING AND OPTIMIZATION OF THE BUILDING PLATFORM
The data of all common machine types e.g. building space as well as the available materials are saved in the user definable database of 4D_Additive. Intelligent nesting functions ensure a fast, easy arrangement of parts and optimal packing density of the effective building volume. Here, the user can either specify a minimum number of parts and a minimum distance or choose an option so that the maximum quantity of a part in a given orientation will be calculated. At a push of a button the building volume will be automatically filled, so that an optimized number of components can be arranged on the platform.
ABOUT CORETECHNOLOGIE

CoreTechnologie is an international software developer with locations in Germany, France, USA, Italy, Japan, India and Great Britain. In the CAD interoperability universe, CoreTechnologie is the leading global producer of the most comprehensive 3D conversion and collaboration software tools available today. Our goal is future-oriented development and customer centric technology to optimize interoperability, thus helping organizations to streamline their Product Life Cycle management. We work with highly professional automated processes and we are always one step ahead from the latest technology. The top priority for us is that our software has the possibility to adapt to all customer requirements.

The customer portfolio by CoreTechnologie comprises more than 400’s customer from several sectors like automotive-, aerospace-, mechanical engineering- and consumer goods industry.