3D_Evolution© Conversion Engine is today's leading MCAD collaboration suite. Designed for a seamless, integrated process, it is the ideal enhancement for your PLM environment.

MCAD CONVERSION ENGINE
Today, collaborating and sharing 3-D data within MCAD environments is a major requirement for organizations, and expanded CAD data exchange capabilities are an important competitive factor. 3D_Evolution©’s native interfaces – a powerful healing technology combined with the fastest conversion process as well as our 64-bit technology – are taking CAX interoperability to a new dimension.

MCAD FORMATS AND MORE
3D_Evolution© has been designed for a flexible and easy data exchange with your customers, sub–suppliers and engineering partners supporting your requirements of design, engineering, FEA, CAM and digital factory. The software supports all primary systems and data formats such as CATIA®, NX®, ProEngineer®, I-DEAS, SolidWorks, Robcad®, JT®, STEP, PDF... and many more.

WEB INTERFACE
The 3D_Evolution© Web interface allows users in a worldwide company network to access 3D_Evolution© in batch mode. Conversion tasks are being processed in the central job list on the Enterprise Batch Manager server. The systems scripting language is designed to automate workflows and facilitate process integration.

On multiprocessor machines the computation of jobs can be distributed so that huge data volumes will be processed within the shortest time, using hardware resources optimally.

PDQ CHECKER
Our PDQ Checker assures the quality of 3-D models regardless of format or generating system. Used in the design process or checking your incoming and outgoing CAD data, the 3D_Evolution© PDQ Checker verifies all 3-D geometries in accordance with SASSIG and VDA 4955/2 specifications. The results can be saved in a HTML format.

In interactive mode failures are displayed on the model. Specific repair functions allow for an easy correction of indicated modeling errors.

It combines an easy-to-use graphical user interface and a powerful scripting language for process integration and automation. The flexibility and scalability offered by 3D_Evolution© means it is immediately ready to start in any MCAD environment.
3D_Evolution© Feature Based technology converts 100% workable, fully functional CAD models, maintaining features, parameters, PMI and metadata.

THE FUTURE OF INTEROPERABILITY
Today, companies are looking for interoperability that goes beyond the need for CAD translations in a boundary representation (B-Rep) of 3-D models. Our innovative Feature Based technology gives companies the freedom to optimize human resources within MCAD environments and to convert legacy data without losing product knowledge and time.

INDEPENDENT INTERFACES
Our native interfaces extract the history, features and related parameters directly from the binary file, without requiring access to a license or the API of the original CAD system. By importing CAD data directly, the entire information necessary can be retrieved extremely fast and without any limiting factors.

ADAPTIVE REMASTERING
3D_Evolution© Feature Based performs an adaptive optimization of the model’s history taking full account of the feature types and the data structure of the target system.
Plug-ins available for major CAD systems are automatically remastering the adapted Feature Based models, maintaining assembly structure, features and related parameters, PMI and metadata as well as B-Rep geometries.
If a parametric model contains skins for surface split operations or imported solids, our proven healing functions allow for a robust remastering of subsequent feature operations.

RELIABLE VALIDATION
After conversion, the shape of the original parts and assemblies can be compared with the converted models to validate the resulting geometries.
If a difference is detected, the logfile lists the maximum deviation and the software creates a lightweight visualization displaying variances in detail.
Save your intellectual property through sharing 3-D data. Within seconds the Simplifier creates bounding geometry from parts and assemblies providing lightweight solid models.

**IP PROTECTION AT THE PUSH OF A BUTTON**
Within seconds, through a simple push of a button, the Simplifier creates bounding geometry from parts and assemblies. This technology is the most efficient IP protection for 3-D models available today. This unique technology also creates lightweight models used for digital mock-up and virtual reality applications in order to alleviate the handling of large assemblies.

**SOLID QUALITY**
The Simplifier removes the interior geometry of a model providing perfect lightweight solids of the bounding geometry, easy to handle for further use in any CAX system. Simplified models can be converted to all B-Rep or tessellated formats available for 3D_Evolution©.

**SIMPLIFIER DETAILS**
Details, e.g. specific holes or other features that should be excluded from simplification, can be selected by the user before the process is being started.

Bodies can be deleted automatically by names, e.g. “DIN” or “M12”, listed in a text file. Also a minimum volume can be defined, bodies falling below this value will be deleted automatically during the process.

**AUTOMATIC SIMPLIFICATION**
The simplification process can also be executed fully automatic in batch mode controlled by the Enterprise Batch Manager. Using the batch mode, the Simplifier facilitates the automatic simplification of very large data volumes within the shortest of time.

By separate handling of the assembly and part files using distributed multiprocessor computation 3D_Evolution© reaches an unrivaled performance.
FEM Tools is bridging the gap between CAD and CAE with easy-to-use direct modeling, midface and defeating functions for a flexible and accelerated product development process.

INDEPENDENT QUALITY
Interfaces for all major formats are making CAE analysts independent from access to a CAD system. Check, healing and conversion functions assure perfect model quality, while easy-to-use manual functions are helping to repair even very difficult geometries – for a fast and focussed model clean-up.

DEFEATING AND DIRECT MODELING
Through intelligent defeating functions for geometry simplification, features such as holes, rounds, chamfers, letters and other details can be deleted within seconds and without specific CAD know-how. Robust direct modeling functions allow for an easy-to-use and reliable manipulation of geometry, to optimize models for CFD and CAE mesh generation.

MIDFACE
This clever tool set creates midfaces from solid bodies and automatically trims the resulting faces for a connected high-quality sheet body. A wide range of semi-automatic functions efficiently reduces the time needed to create perfect midface models. Several parameters to limit the maximum wall thickness and draft angle are helping to automate the process. The wall thickness of the original solid is attached to the midface model and can be saved in FEA-specific formats such as Nastran.

META-facing MINIPATCHES
Minipatches and their basic surfaces can be merged by the Metacee function at the push of a button. Depending on the geometry, the elimination of minifaces is resulting in up to 75% lesser faces. Thanks to Metaface, geometry can now be meshed and handled easier for CFD and CAE calculations resulting from an efficient reduction of elements.
Advanced Analysis is easy-to-use and provides reliable results. It works for all current CAD formats and allows a fast computation even for very large data volumes.

**GEOMETRIC COMPARISON**
Advanced Compare indicates and displays reliable and fast all variances between different 3-D geometries. Parts and assemblies of different formats can be compared with a user-defined accuracy. The powerful 3D_Evolution® graphics provides a clear overview. Discrepancies are highlighted with a colour scale, and filter functions allow for an easy interactive analysis. Not only geometric variances can be detected, but also separated assembly structure as well as PMIs can be compared. Performed in batch mode the Advanced Analysis functions create HTML logfiles and a lightweight viewer format as graphical output.

**COLLISION DETECTION**
For digital mock-up our reliable Collision Detection finds intersections between parts in assemblies. Parts with allowed intersections can be listed in a XML file and will then be excluded from the process. The detected collisions are highlighted by intersection curves while the model can be displayed transparent. The collision report file contains the list of collision partners as well as the related fully functional 3-D models and the collision curves.

**THICKNESS CHECKER**
The Thickness Checker indicates areas of a critical, user-defined wall thickness, e.g. in casting parts. Areas where the wall thickness falls below or rises above the defined value are highlighted clearly and can be displayed separately while the values are indicated by colour. The Advanced Compare technology saves precious human resources, increases quality and avoids costly changes already at an early stage of the product development.

**CLEARANCE CONTROL**
This technology is important to assure the quality of assemblies, e.g. to avoid vibration noises caused by parts outside a defined clearance interval. A clearance can also be checked within parts to avoid design errors causing manufacturing problems. Reliability, high-resolution display as well as outstanding performance are shared between all Advanced Analysis modules.
ABOUT CORETECHNOLOGIE

Our mission is to optimize interoperability, helping organizations to efficiently share engineering data in the PLM process. Founded in 1998, CT CoreTechnologie consistently presents the most innovative developments and has shown an outstanding performance.

In the market we are recognized as reliable and fast reacting partner offering a wide range of sophisticated interoperability software solutions.

3D_Kernel_IO is also the core of our 3D_Evolution© suite which is the first-choice conversion tool of leading technology companies developing complex products in the automotive, aerospace, mechanical engineering and consumer goods industries.

Therefore, CoreTechnologie knows what counts in the CAD interoperability business and supports your needs. We understand that sometimes small details make a big difference. This is why we are also offering tailored solutions for our OEM customers.

Based on your specifications and our outstanding experience we develop customized interfaces and functions that meet all of your requirements perfectly.

Using 3D_Kernel_IO, you benefit from well-established and mature products as well as the entire expertise and experience of the market leader for CAD interoperability solutions.