Premium Performance for the Ditigal Enterprise

ASFALIS®

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POWERFUL. PRECISE. AUTOMATIC.

CAD models are crucial to the engineering and manufacturing process. ASFALIS enables you to share an accurate and/or simplified model that can be optimized for the targeted end-user.

An Enterprise Solution Designed Around You

Built for You

ASFALIS utilizes scenarios and scripting to achieve high customizability for translation, optimization, and validation results. This flexibility allows system integration using ASFALIS components into your current environment seamlessly.

Workflow Automation

ASFALIS can add automation to your workflow. Now jobs such as translation, product data quality checking, optimization, and simplification can be automatically be initiated, perform the proper operation, send notifications, and deliver an accurate and desired file format.

Scalability

ASFALIS can be configured to best suit the use cases for single to multi-users. From a desktop application to enterprise-level scalability, ASFALIS is designed around you.

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ASFALIS

ASFALIS facilitates seamless communication of CAD data between enterprises, divisions, and teams by editing and translating geometry and attribute values flexibly, conforming to the requirements defined by the customer's process. It provides a scalable and configurable solution to best suit the use, size and workflow needs. Processing options for ASFALIS are available individually by function, or combined as a system, so that users can quickly and efficiently meet their business needs.

Highlighted Feature

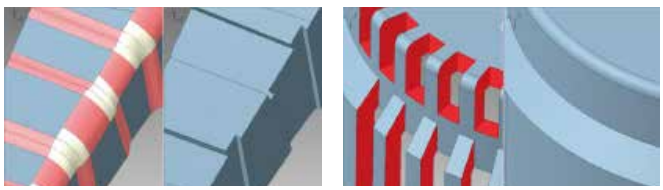
3D Data Translation

Elysium's best-in-industry geometry handling technology guarantees the highest translation success rate which cannot be achieved by data exchange via neutral formats such as IGES or STEP, or by using other translation tools.
Beyond geometry handling, Elysium's technology includes support for non-geometric data such as manufacturing and material information, and 3D annotations, which are vital components for efficient communication of 3D CAD data.
Elysium's data translation also includes the capability to check PDQ criteria in conformity to guidelines provided by SASIG, JAMA, JAPIA and VDA, or customer-specific PDQ standards.

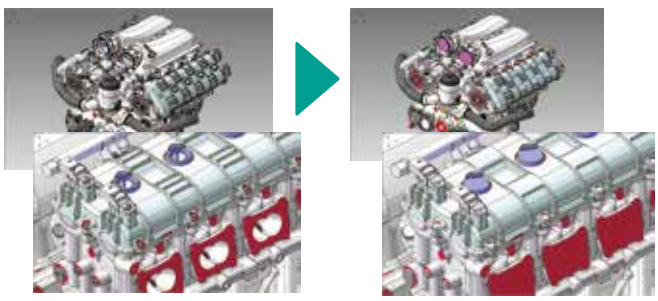
Rich 3D Geometry Handling Technology

Advanced geometry handling technologies that are wellknown from Elysium's CADdoctor are also available as individual components for ASFALIS. For example, Geometry Simplification can be configured within ASFALIS to automatically detect and remove features such as fillets, chamfers and holes, or merge faces to prepare a model for analysis or other purposes.

Geometry Simplification

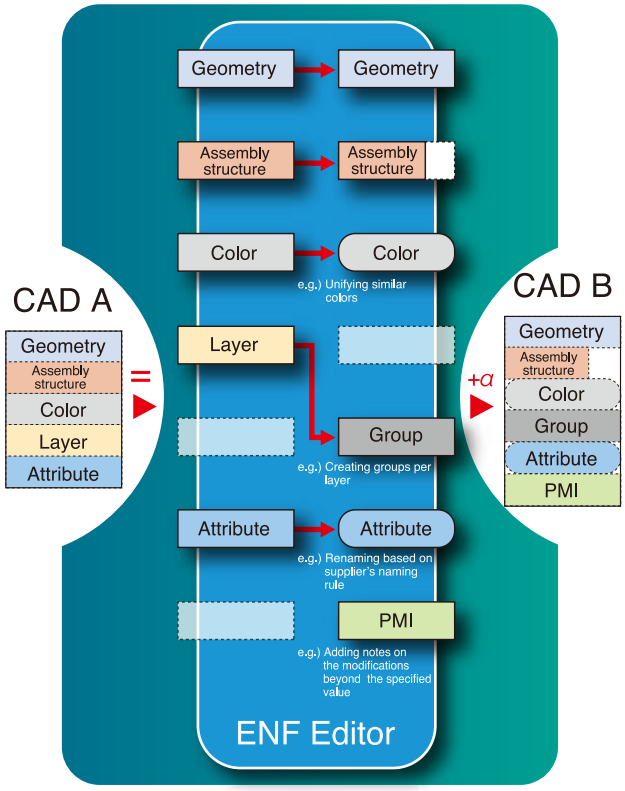


File Size Reduction



Mapping & Editing Various Information in CAD Data

There is a growing demand to not only fully translate nongeometric information, but also to edit non-geometric elements to ensure that they will be visualized correctly and usable in the target systems. This has arisen because each company sets unique design standards, numbering and naming rules, standardization of each part, etc., for internal processes which can become barriers when exchanging product information using CAD data with other companies.
The ASFALIS ENF Editor component overcomes these barriers by mapping and editing colors, layers, attributes, and PMI according to internal process rules or requirements defined by companies or divisions. This component also provides the ability to flatten the assembly structure which aids in data preparation for CAE analysis.



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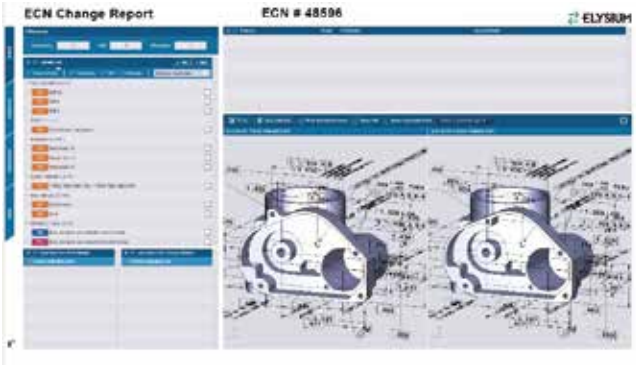
Validating CAD Data and Detecting Differences

As data exchange moves quickly between companies and divisions, it becomes crucial to identify differences between engineering changes. The ASFALIS CAD Validator component quickly compares 3D data, and automatically detects the differences on not only geometry, but also PMI and attributes between any two files. It lists geometrical differences, numerical values such as hole diameters and illet radii, and structural differences such as assembly structure, part names, and even part positions. It even detects differences in font size and arrow position during PMI comparison, as well as the semantic information. It also allows for flexible customization on the definition of differences to detect on PMI and attributes, to avoid overdetections.



Moreover, the validation results can be quickly viewed in ASFALIS Model Viewer, and can be exported in 3D HTML and 3D PDF reports. The 3D HTML and 3D PDF reports encourage efficient communication between companies and divisions while eliminating the need for additional tools.

Automating the Process

ASFALIS uses a “Scenario” – a predefined series of processing options defined by a scripting language – to control settings for data translation, conditional branches in attribute editing, procedures for geometry simplification, and more.
This eliminates human errors as users simply select which scenario to run. This automates and streamlines even complex processes. One of the advantages of a scenario is the flexibility to classify the output by PDQ error type or severity, and repair those errors according to predefined parameters. Scenarios, combined with front-ends which support batch automation, enable processing large amounts of 3D CAD data by simply selecting a scenario and specifying input files or folders.

ASFALIS Front-ends

ASFALIS is available in various levels of configuration to best suit each use case. It ranges from a desktop application for a single user to a collaborative system among multiple users, thus maximizing the power of ASFALIS. Furthermore, it can be integrated into in-house proprietary data management and process management systems, such as a PDM system or a data exchange portal, using ASFALIS API.

ASFALIS SmartLauncher

This is the simplest application to utilize the power of ASFALIS. It is available as a standalone interface or as a plug-in that can be executed from within a CAD system interface. It’s a one-click solution enabling point to point translations.

ASFALIS Controller

This is a desktop application targeted for single users to translate and optimize 3D data with batch functionality.
Simply select input files/folders and options, such as data translation or geometry simplification, from a pull-down menu, and the 3D CAD data will be automatically processed. This option includes the capability to create and register Scenarios, which automates complex processes.

ASFALIS SmartController

This is a simple desktop application for automated and simultaneous batch processing with registered Scenarios and multiple CAD data sources.

ASFALIS TransServer

This is a Web-based, client-server type application which accommodates multiple users or teams via a Web browser.
This means that it no longer requires installation onto each client computer, yet still provides the users with the same high quality data translation, geometry simplification, property editing or other processing options of 3D data. This also offers essential capabilities required for multi-user systems: manage users, control access rights, manage jobs, and more.

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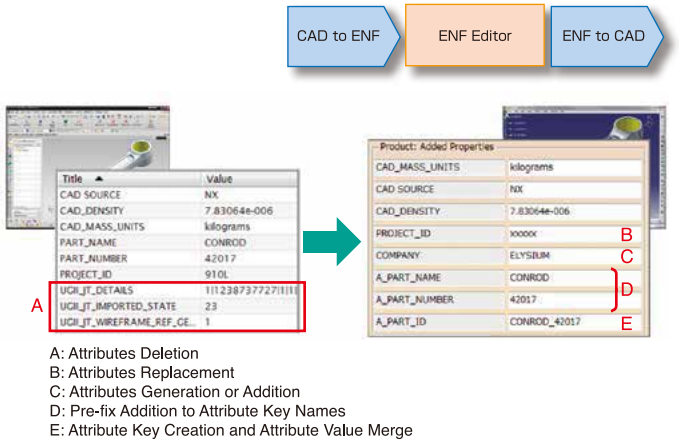
Optimizing Attributes

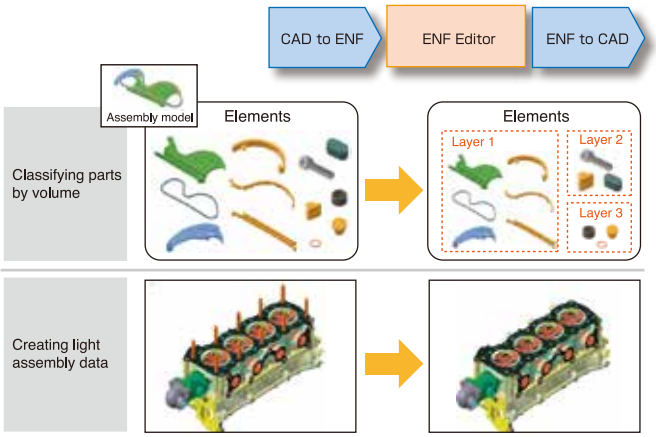
In addition to accurate geometry translation between multiple CAD formats, attribute mapping is essential for companywide or enterprise-level collaboration.
ASFALIS ENF Editor enables users to flexibly define complex instructions for automated attribute mapping. For example, assigning part numbers to part names, converting lowercase haracters to uppercase characters, replacing spaces with underscores, or even advanced editing such as replacing specific character strings or creating an attribute value by combining multiple attributes. This provides information which best conforms to the design standards at the destination company or division.



A: Attributes Deletion
B: Attributes Replacement
C: Attributes Generation or Addition
D: Pre-fix Addition to Attribute Key Names
E: Attribute Key Creation and Attribute Value Merge

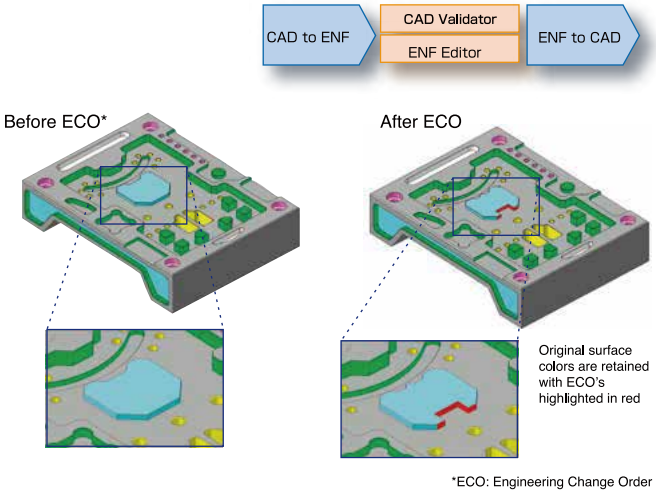
Reducing the Data Size by Part Categories

ASFALIS ENF Editor classifies parts in assembly models onto separate layers defined by categories or characteristics using part names, attribute values, mass property values, etc.
Moreover, this component makes it possible to reduce data size by deleting tiny parts recognized as unnecessary at the post process level, deleting parts that exceed a specified threshold, or deleting parts whose names satisfy the part-todelete condition and more.



Applying Original Manufacturing Attributes to CAD Data after Engineering Changes

Historically, every time engineering changes were made, part faces were re-colored manually to classify new manufacturing attributes. The combination of the ASFALIS Geometry Validator component in tandem with the ASFALIS ENF Editor streamlines this process by detecting the area with engineering changes, and then automatically copying face colors from the original model to the area without changes, while highlighting the area with changes to alert that manufacturing attributes need to be defined. This allows users to quickly update the model with engineering changes by minimizing the work required to update/maintain manufacturing attributes after engineering changes.



*ECO: Engineering Change Order

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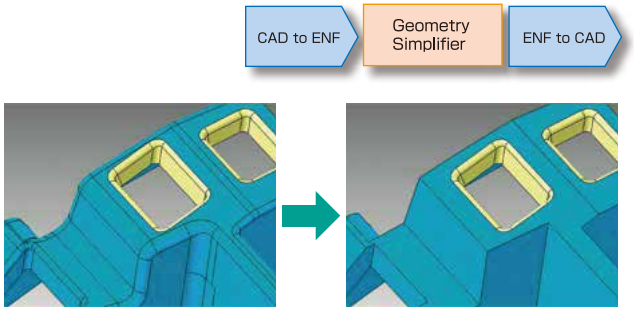
Generating Simplified Model for CAE Analysis

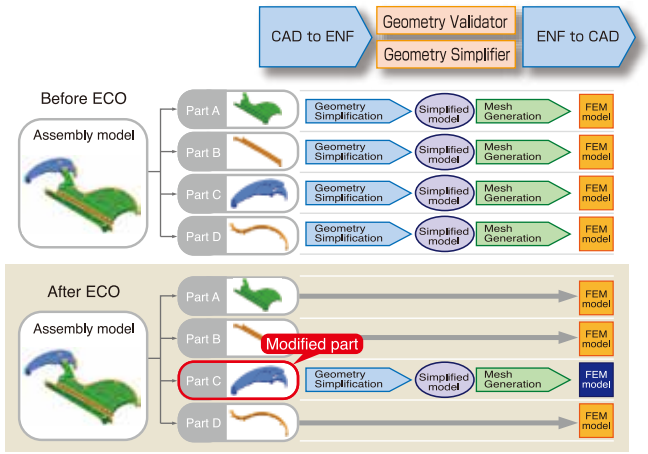
When utilizing CAD data designed for CAE analysis, it is a common headache that often times entities become too small or uneven due to complex geometry. For this reason, it is important to create simplified abstracted models for meshing, which minimizes the processing time for CAE analysis.
The ASFALIS Geometry Simplifier component generates simplified models automatically based on predefined rules. This function can be extended to maintain certain geometries to avoid unintended simplification by specifying minimum attribute values. Moreover, it can automatically default to the previous state in order to avoid interferences.



Automated geometry simplification excluding yellow-colored area

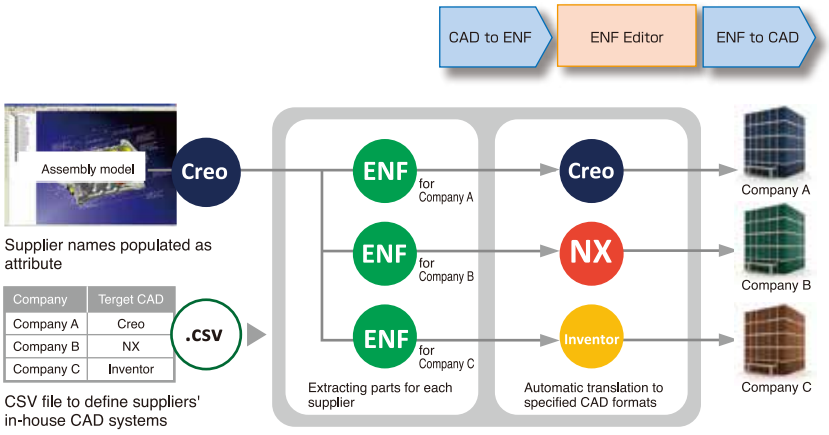
Generating CAE Models Efficiently by Skipping Already-generated Parts

Delta detection is the ability to recognize a change over an assembly during an iterative optimization process. When conducting an iterative optimization analysis on a large assembly, it is usually very timeconsuming to regenerate meshes for each part every time an assembly is changed. ASFALIS, however, decreases this time by using the Geometry Validator and Geometry Simplifier components in combination to automate the process by script, bypassing and reusing unchanged parts within the assembly, and only generating meshes for delta parts that have been changed.



Automating the Data Distribution Process

ASFALIS ENF Editor significantly reduces the time required to procure all the elements comprising large assemblies. Translating assemblies to appropriate formats and then forwarding data to different manufacturers for each of the elements within those assemblies can be incredibly daunting.
ASFALIS ENF Editor, however, is a powerful, automated system which disassembles assembly models, translates and optimizes each part according to each supplier's inhouse CAD systems, and then distributes the data appropriately to each supplier.



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