

Designing Better Products with T-FLEX
Software Solutions from Top Systems

T-FLEX PLM Software

Top Systems provides integrated software solutions for product design, manufacturing and data management. The comprehensive set of applications includes MCAD, CAE, CAM, and PLM.



T-FLEX CAD

Full-function software system providing mechanical design professionals with the tools they need for today's complex design challenges.



T-FLEX Analysis

Wide spectrum of specialized analysis tools to help engineers virtually test and analyze complicated parts and assemblies.



T-FLEX Dynamics

General-purpose motion simulation for studying the physics-based motion behavior of a CAD design.



T-FLEX Gears

Fully integrated add-on application for T-FLEX CAD that provides a wide range of tools for design, analysis and calculation of gears.



T-FLEX Electrical

Wide spectrum of specialized tools for development of electrical systems: from construction of two-dimensional circuits to the placement of 3D models of electrical components.



T-FLEX Nesting

Automate nesting of sheet materials for various types of cutting in such a way that the remnants of the material are minimal.

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Top Systems provides integrated software solutions for product design, manufacturing and data management. The comprehensive set of applications includes MCAD, CAE, CAM, and PLM.



T-FLEX CAM

Fully integrated manufacturing add-on to T-FLEX CAD for generating NC programs as well as toolpath verification and machine simulation.



T-FLEX VR

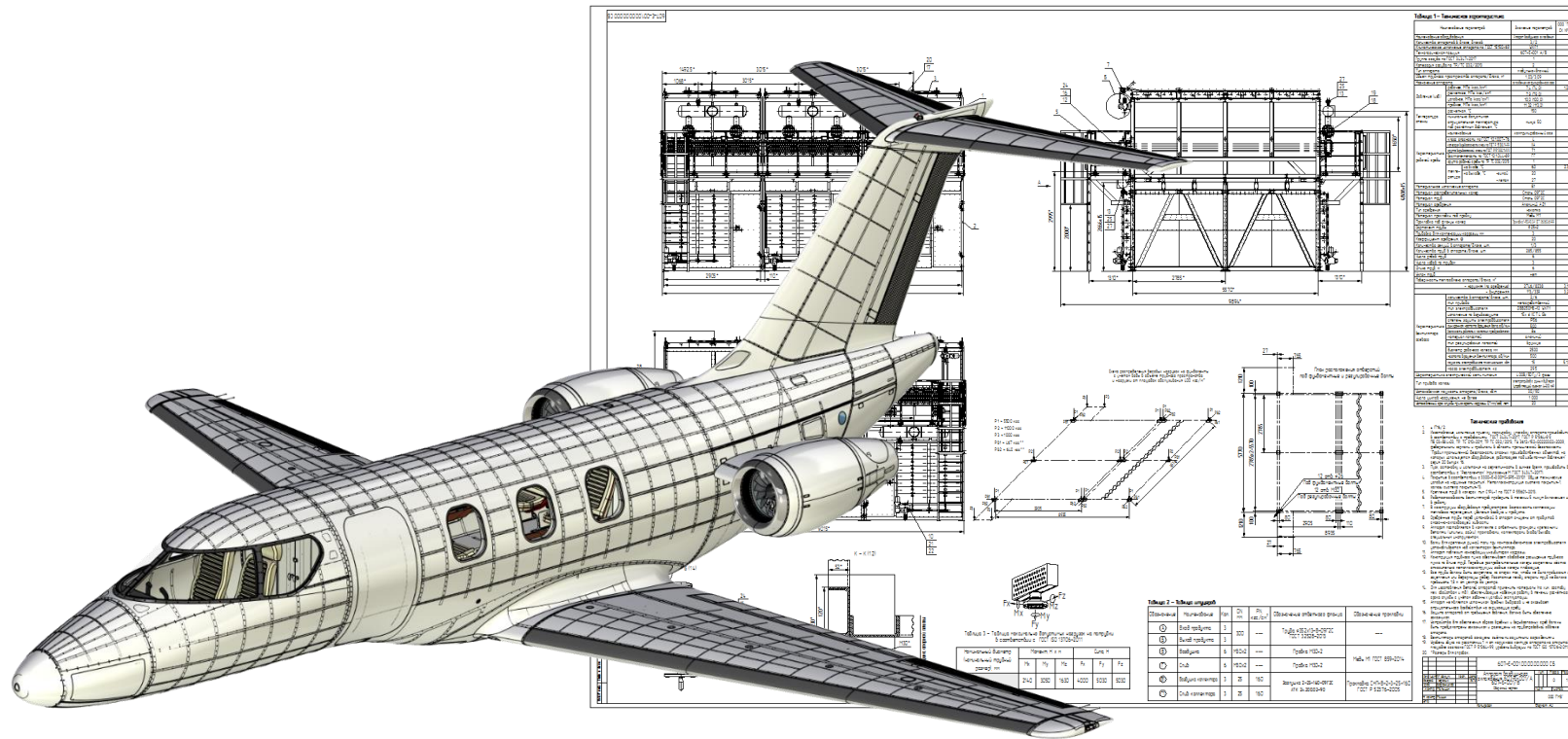
Explore 3D model in a virtual 3D space and interact with it as if it is already a manufactured product.



T-FLEX DOCs

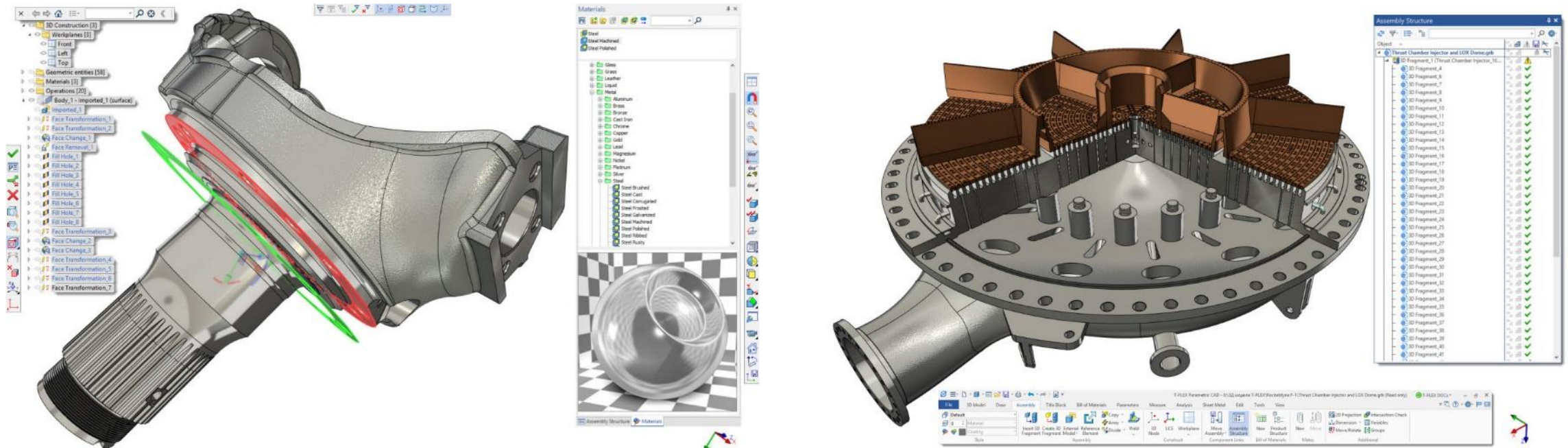
Product Lifecycle Management (PLM) system, helping companies manage complex products, streamline operations, and increase productivity.

Parametric Drawing and Design, 3D Solid Modeling



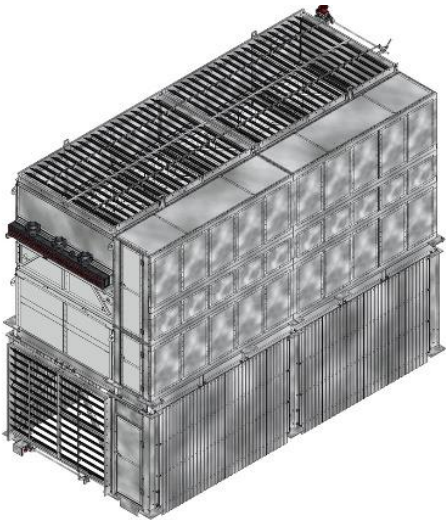
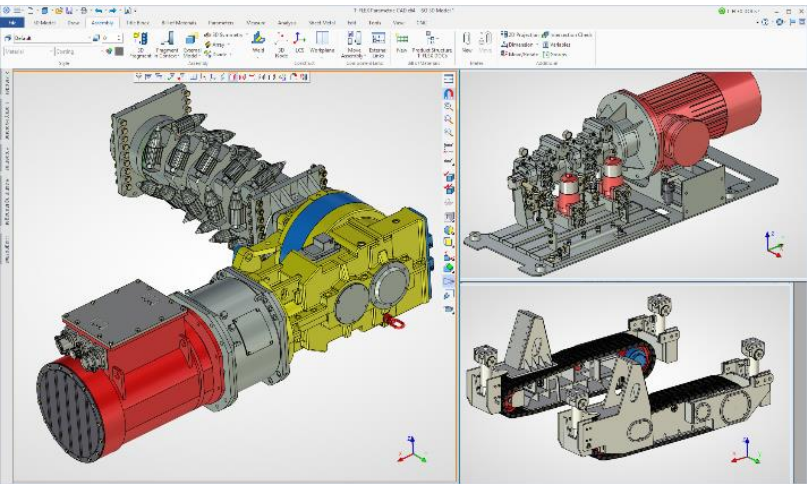
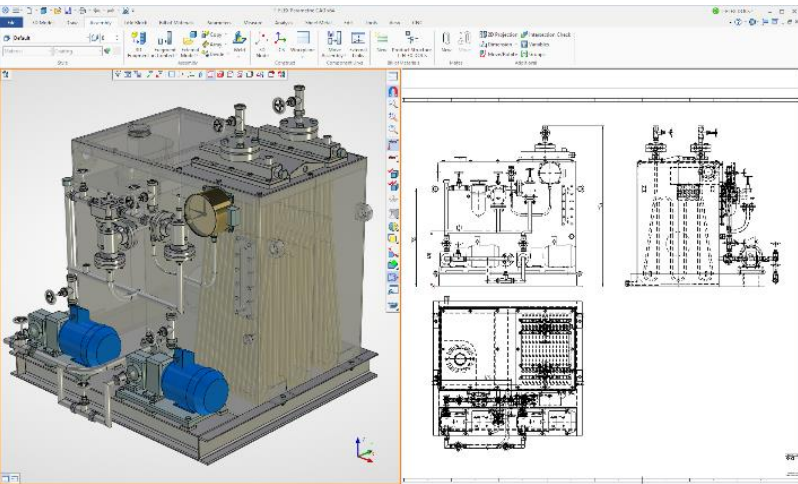
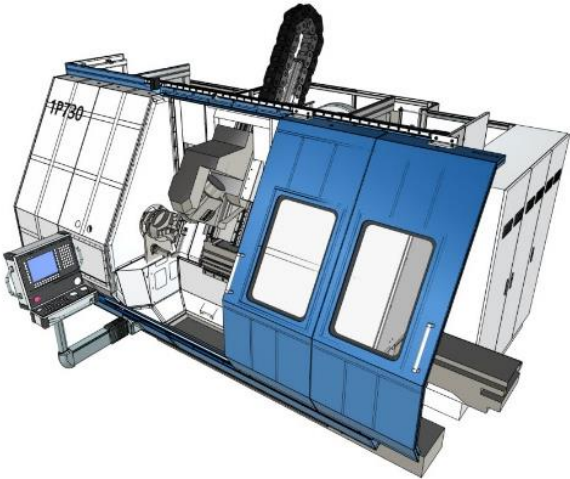
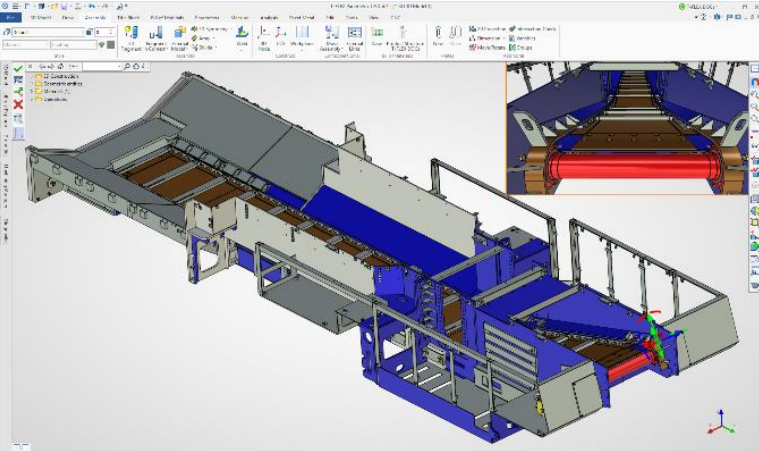
T-FLEX CAD is a full-function software system providing mechanical design professionals with the tools they need for today's complex design challenges. It unites powerful parametric 3D modeling functionality with the parametric drafting and drawing production toolset.

Modeling Tools

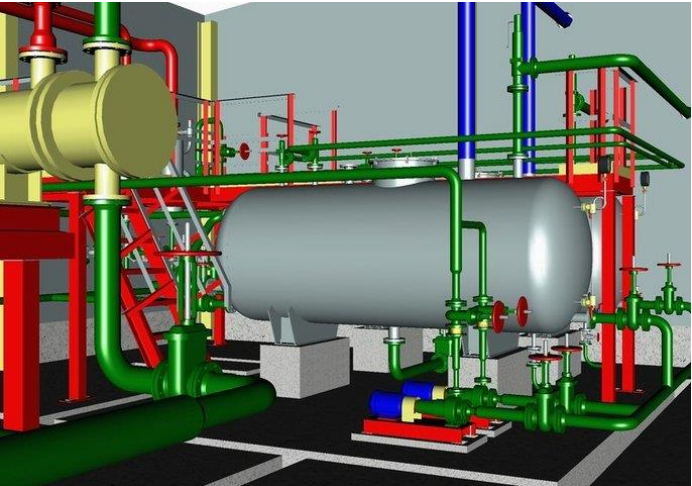
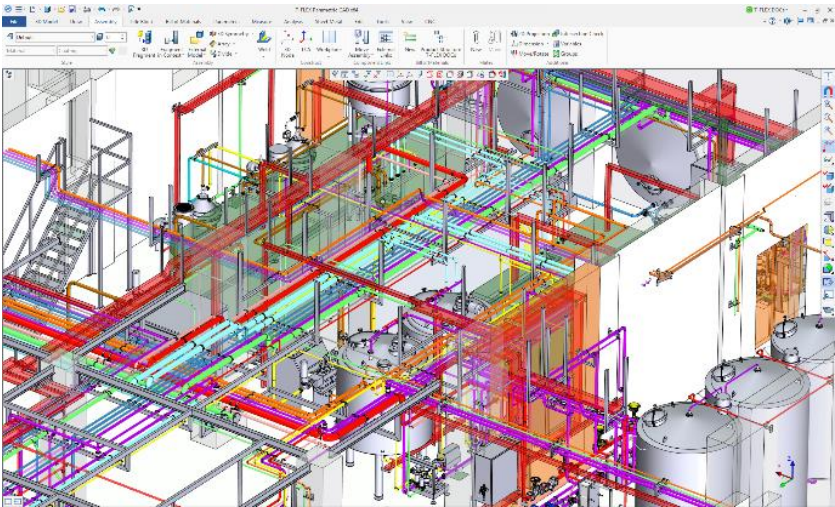
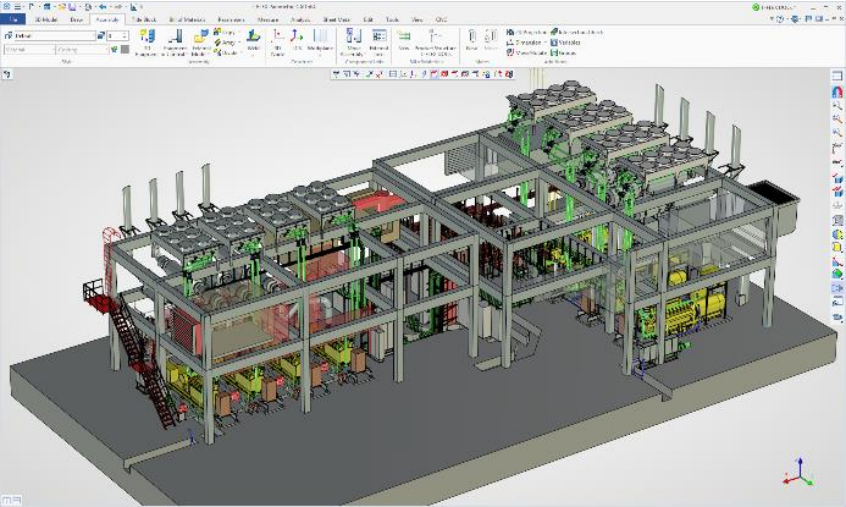


- ✓ T-FLEX modeling and assembly tools enable to easily develop a full range of products, from single parts to assemblies containing thousands of components.
- ✓ Highly innovative parametric modeling tools allow designers to quickly create basic shapes and easily add common mechanical features.
- ✓ T-FLEX harnesses the power of Parasolid® production - proven modeling kernel developed by Siemens PLM Software.

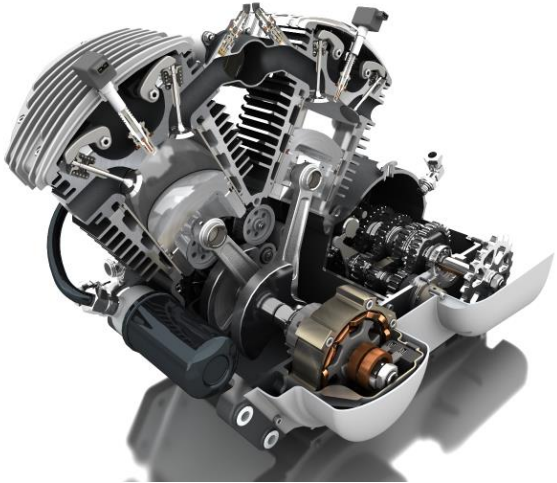
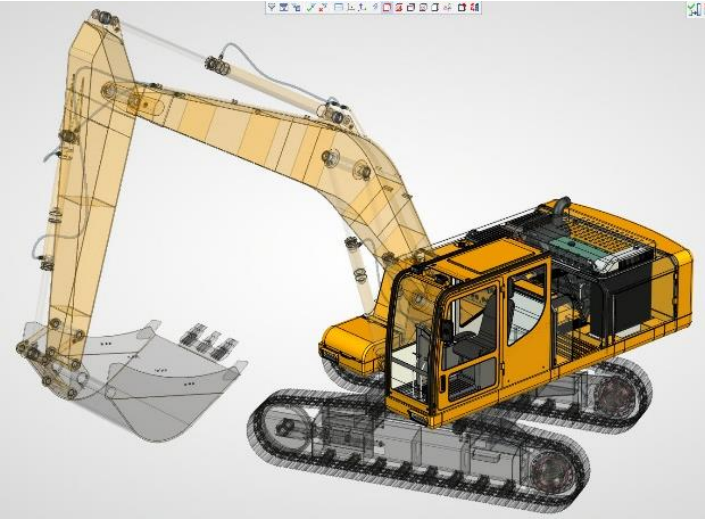
Industrial Machinery & Heavy Equipment



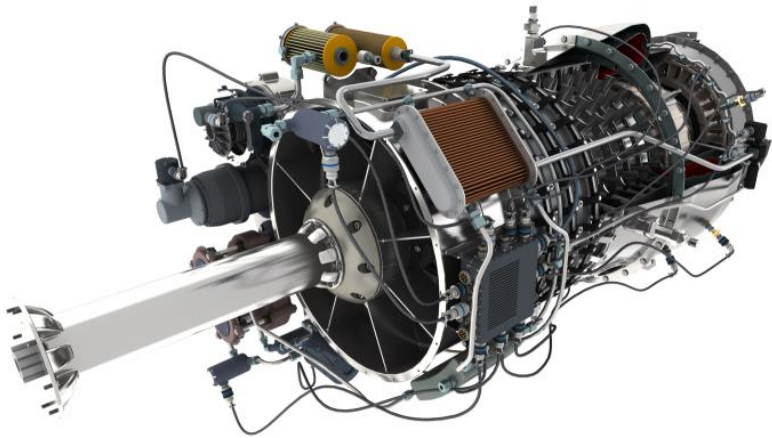
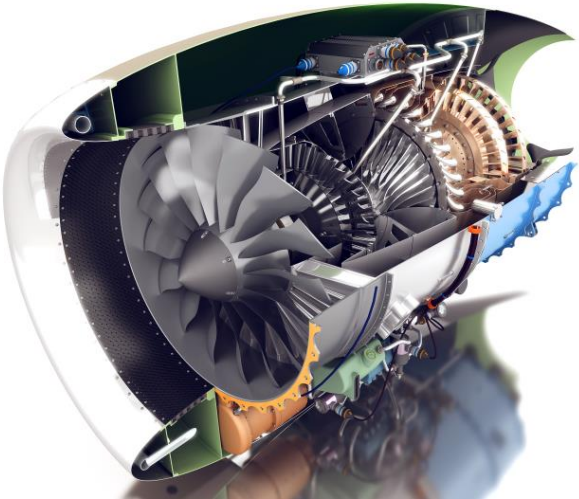
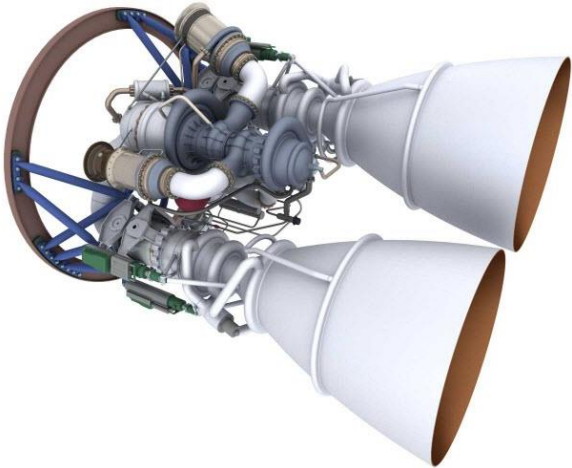
Construction and Structural Design



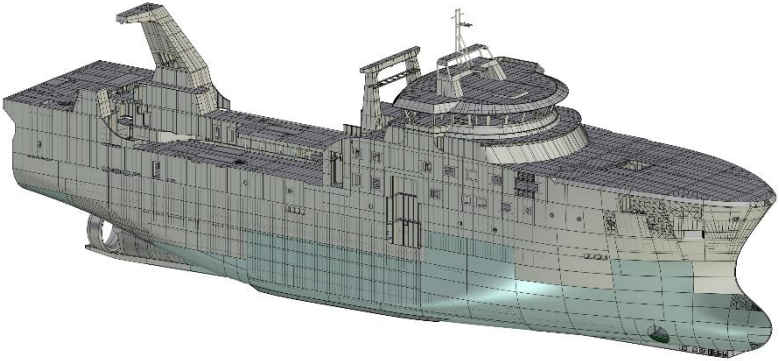
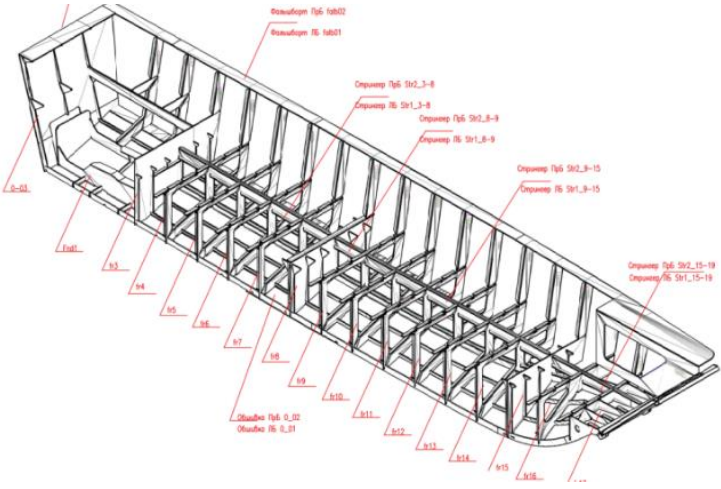
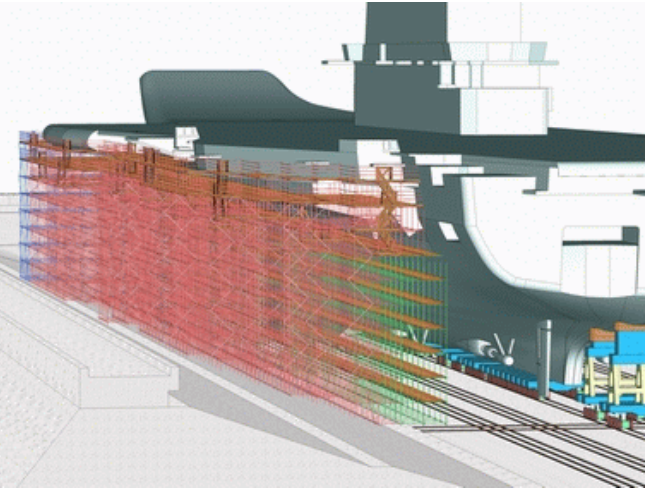
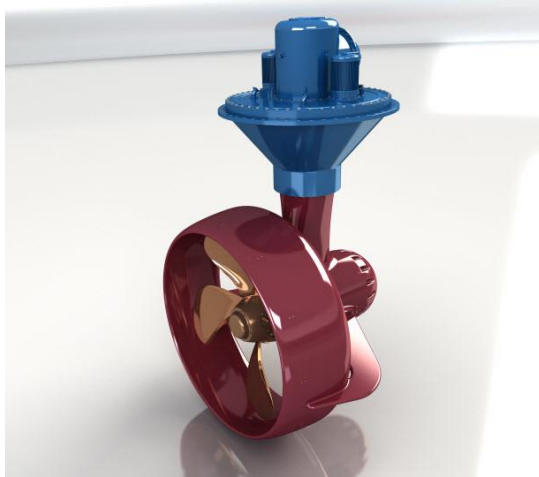
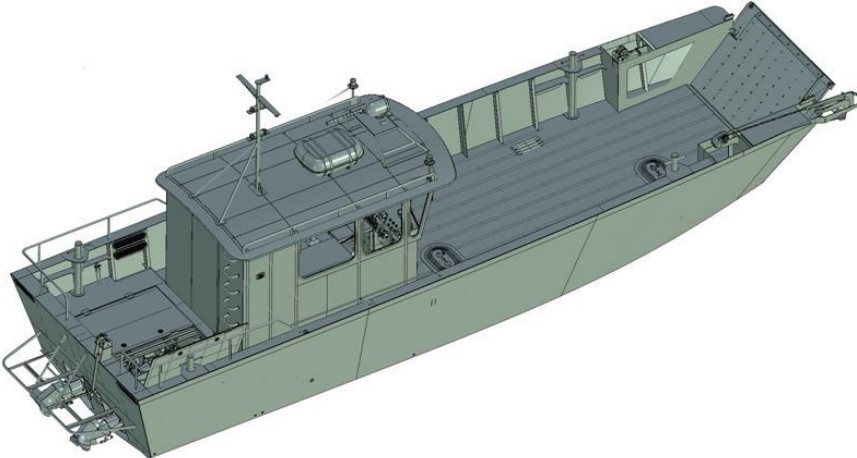
Automotive



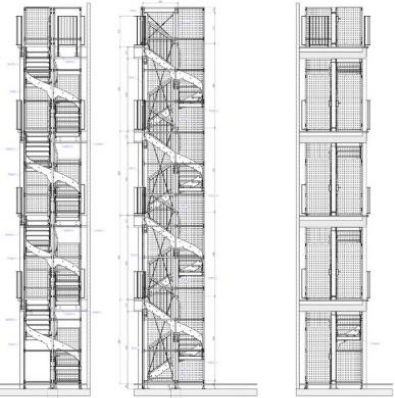
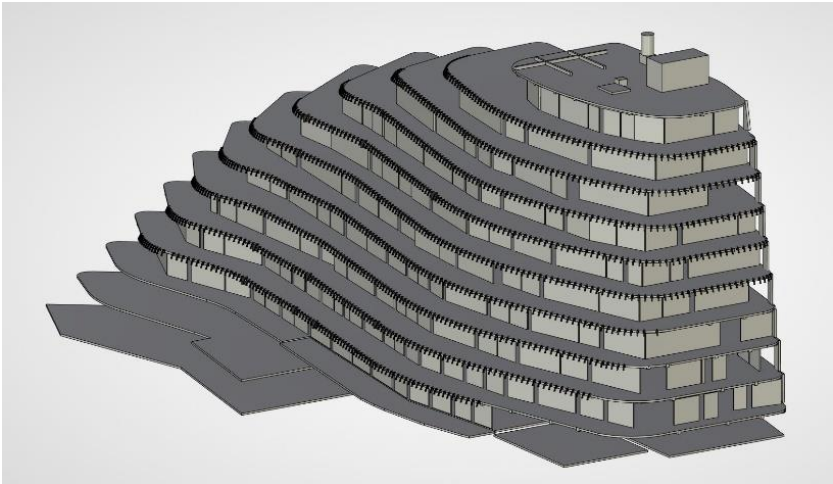
Aerospace



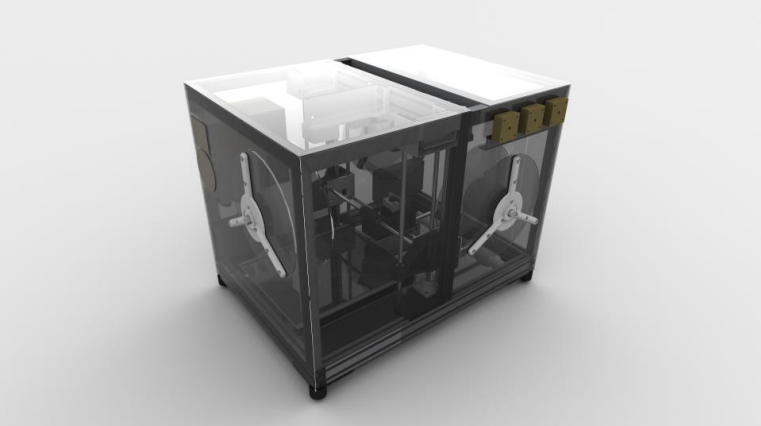
Shipbuilding



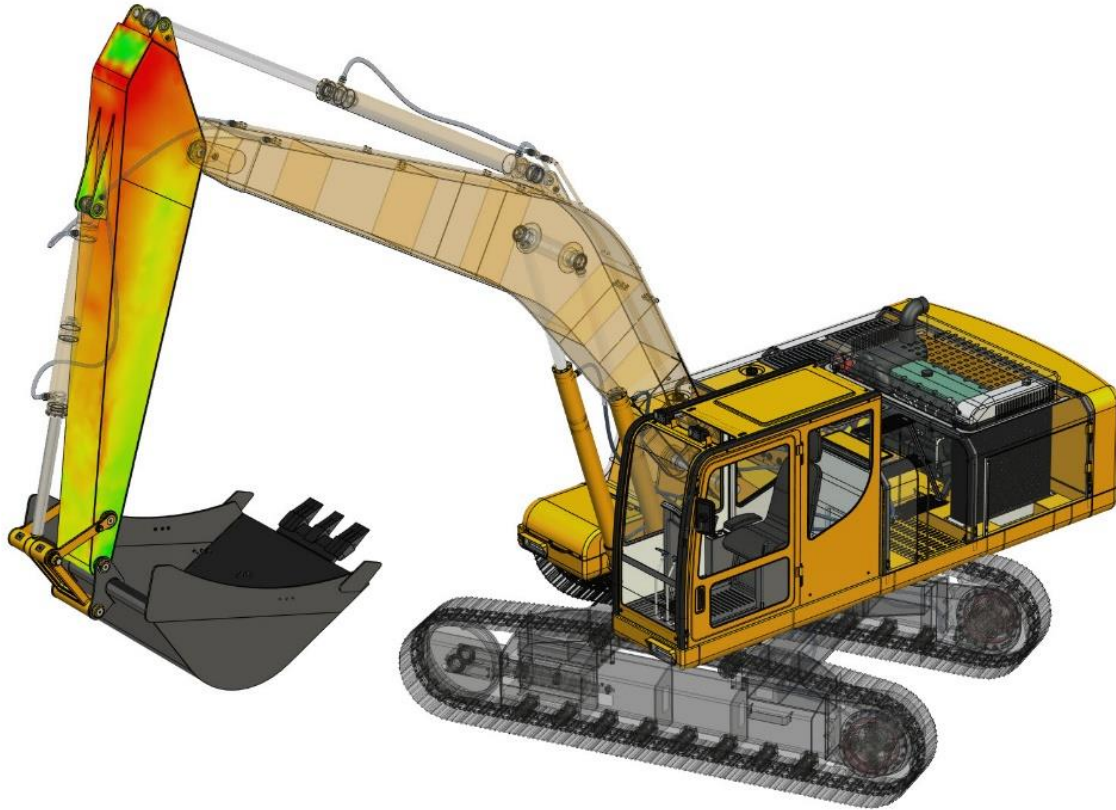
Architecture & Construction



Consumer Goods



Finite Element Simulation



T-FLEX Analysis offers a wide spectrum of powerful tools to help engineers to perform virtual testing and analysis for predicting the physical behavior under various loading conditions.

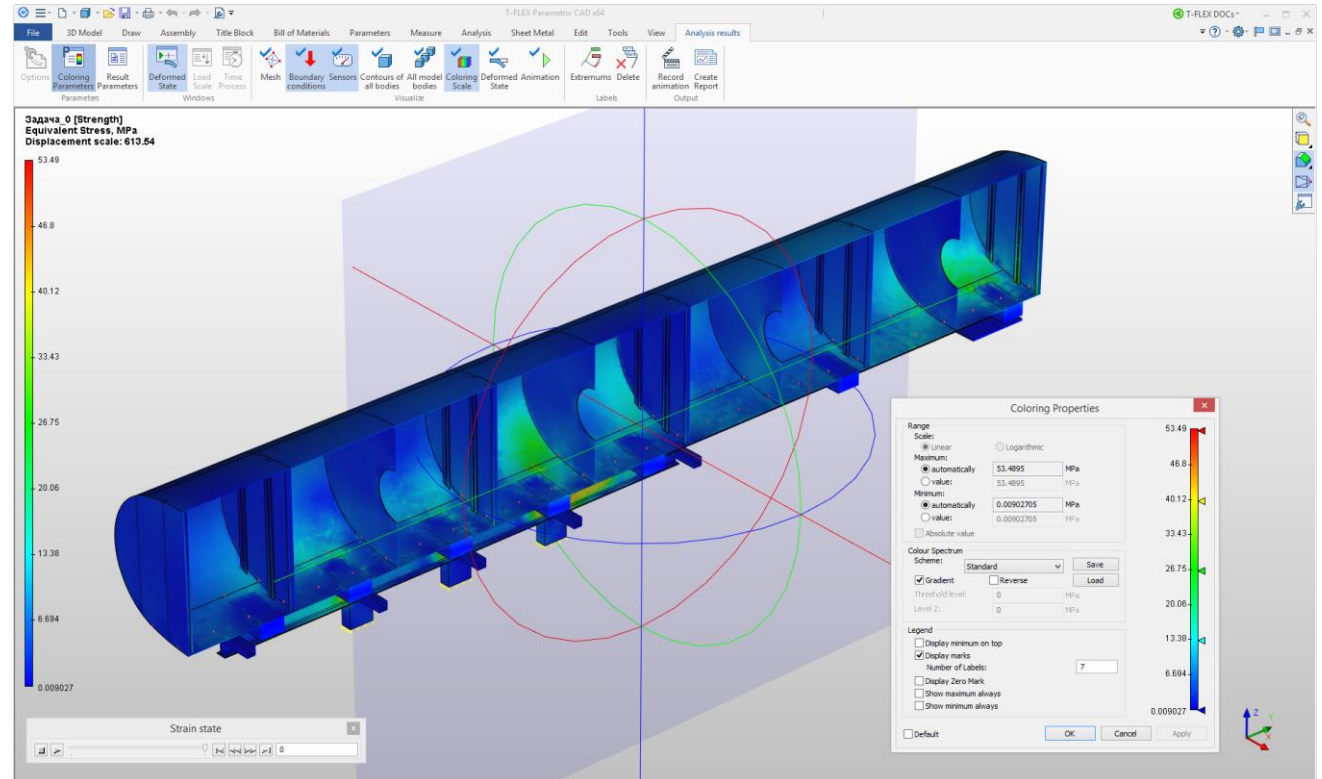
T-FLEX Analysis shows how a model will perform under real-world conditions before it is built.

T-FLEX Analysis provides easy-to-use yet powerful design analysis tools for designers and engineers that help them improve design quality, avoid field failures, reduce material costs, and shorten time-to-market.

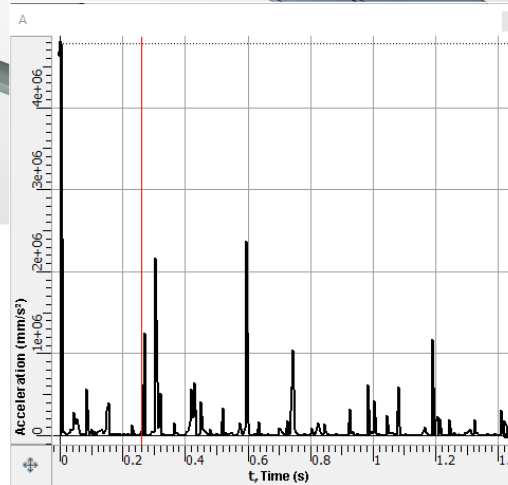
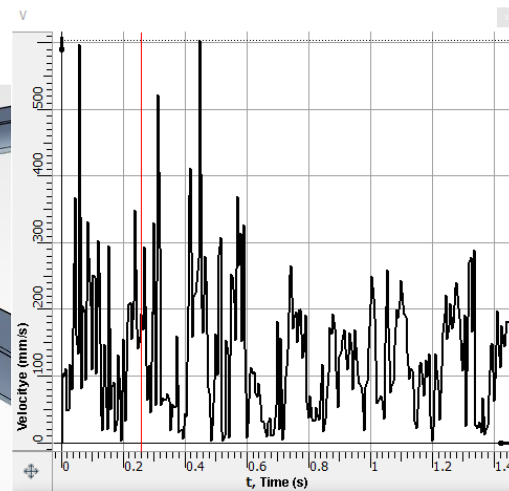
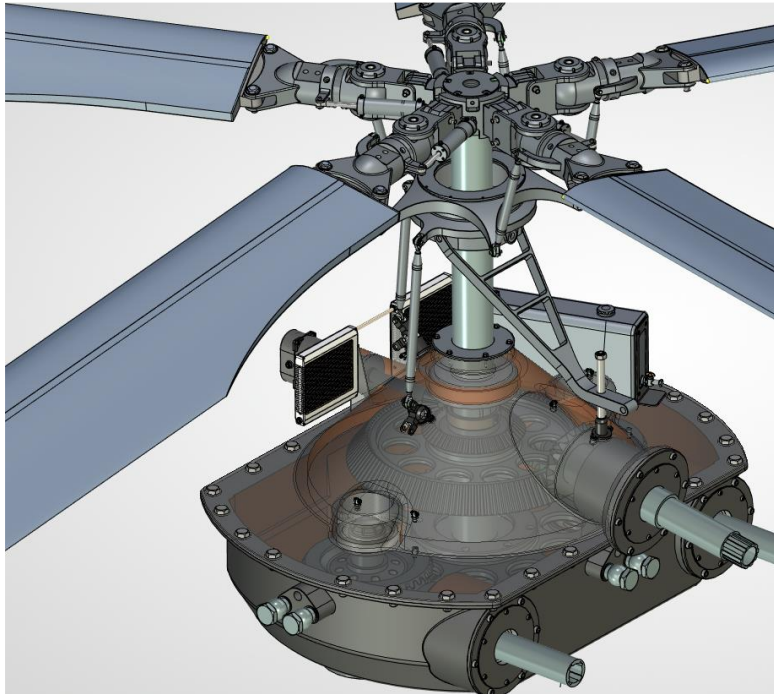
Finite Element Simulation

T-FLEX Analysis provides:

- ✓ Static Analysis
- ✓ Buckling Analysis
- ✓ Fatigue Analysis
- ✓ Frequency Analysis
- ✓ Forced Oscillation Analysis
- ✓ Mode Superposition Analysis
- ✓ Transitional Process Analysis
- ✓ Thermal Analysis



Multibody Dynamics and Kinematics Analysis



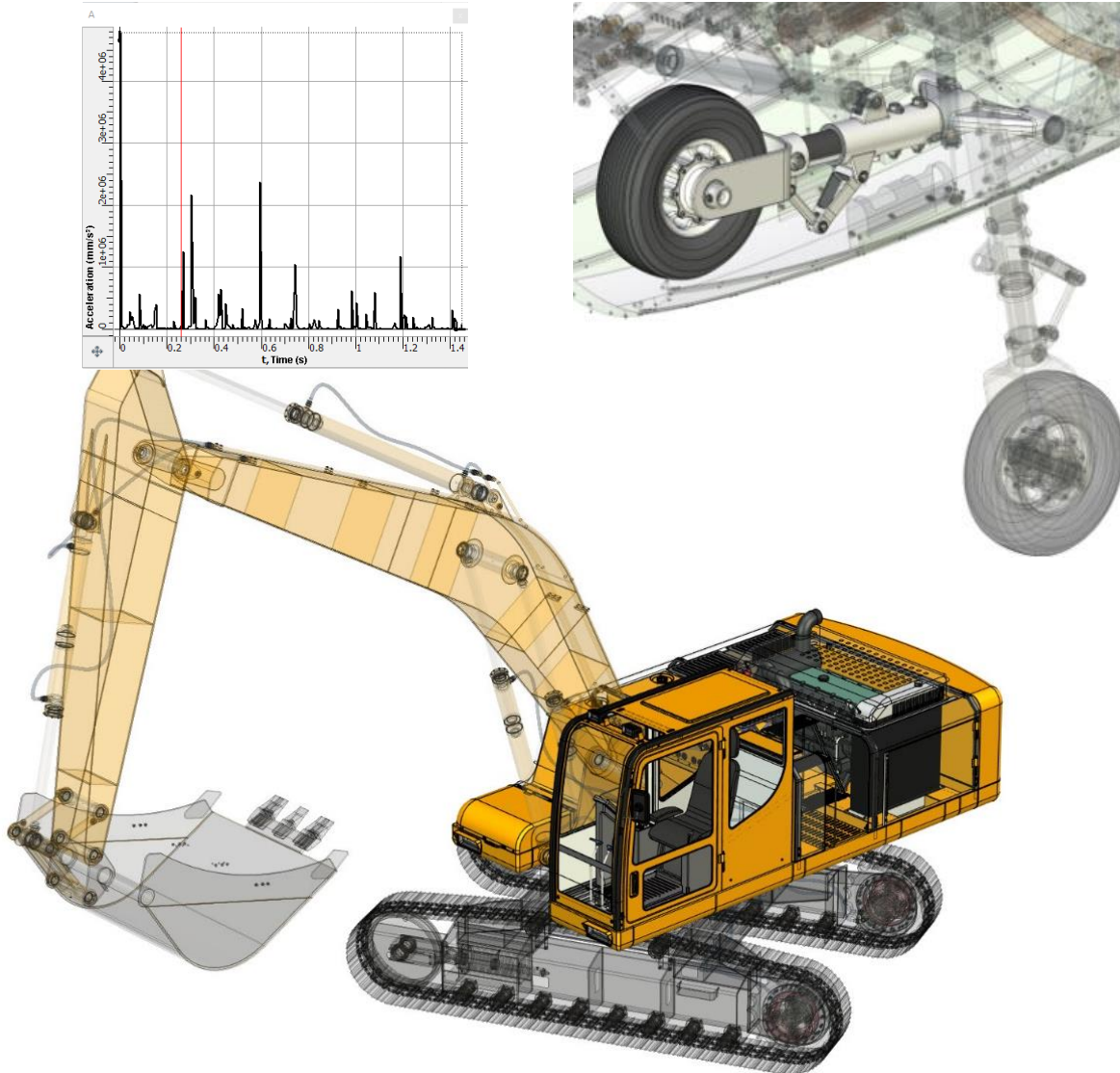
| Current Values | | | |
|-----------------------------|--------------|----------|----------------|
| Name | Value | Minimum | Maximum |
| Velocity (magnitude) | 192.135949 | 0.000000 | 604.689314 |
| Acceleration (magnitude) | 51823.578966 | 0.000000 | 4782176.517754 |
| Reaction Force (magnitude) | 0.000000 | 0.000000 | 0.000000 |
| Reaction Torque (magnitude) | 0.000000 | 0.000000 | 0.000000 |

T-FLEX Dynamics is a general-purpose motion simulation add-on application for studying the physics-based motion behavior of a CAD design without leaving the T-FLEX CAD environment

T-FLEX Dynamics is the virtual prototyping software for engineers and designers interested in understanding the performance of their assemblies. It lets you make sure your designs will work before you build them.

Multibody Dynamics and Kinematics Analysis

T-FLEX Dynamics

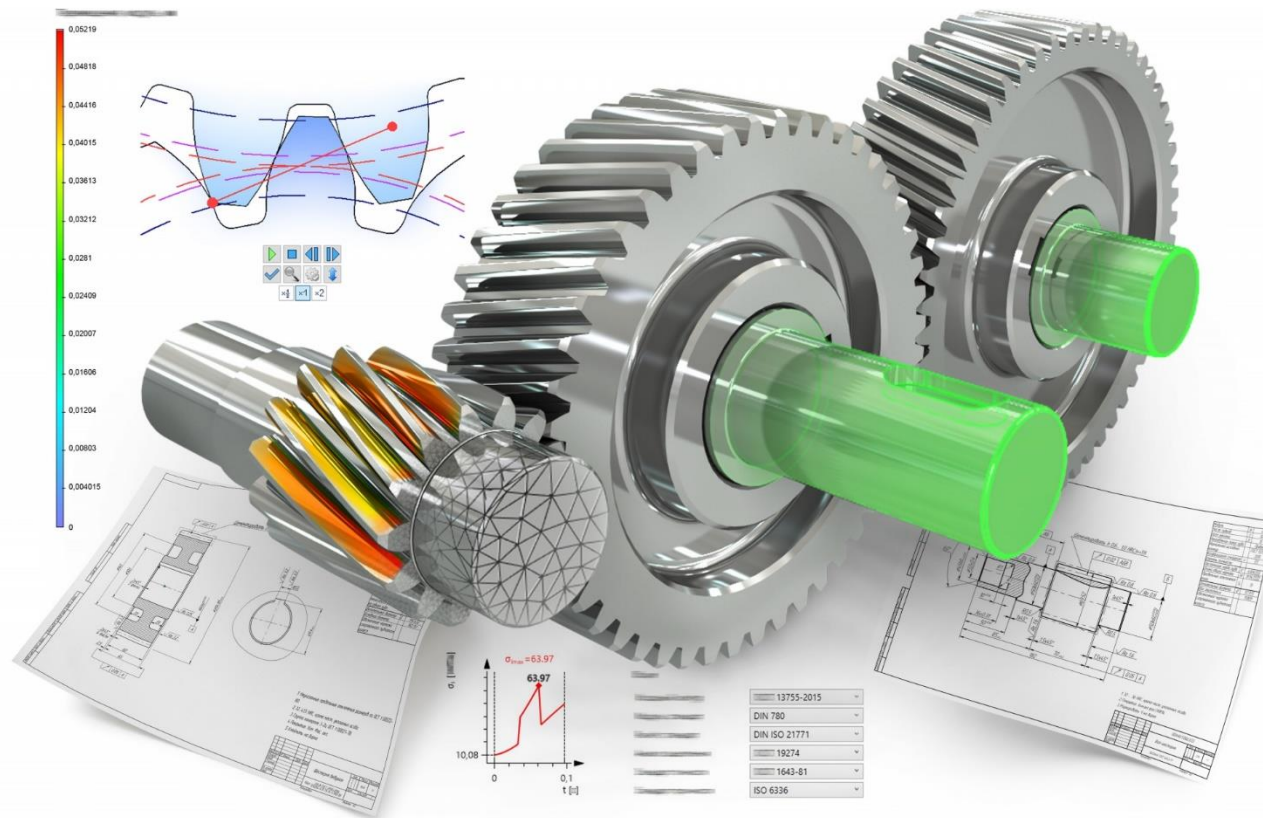


T-FLEX Dynamics offers several types of joint and force options to represent real-life operating conditions.

As you build your T-FLEX CAD assembly model, T-FLEX Dynamics can automatically create the parts, joints and contacts of your mechanism generating them from assembly constraints and from model.

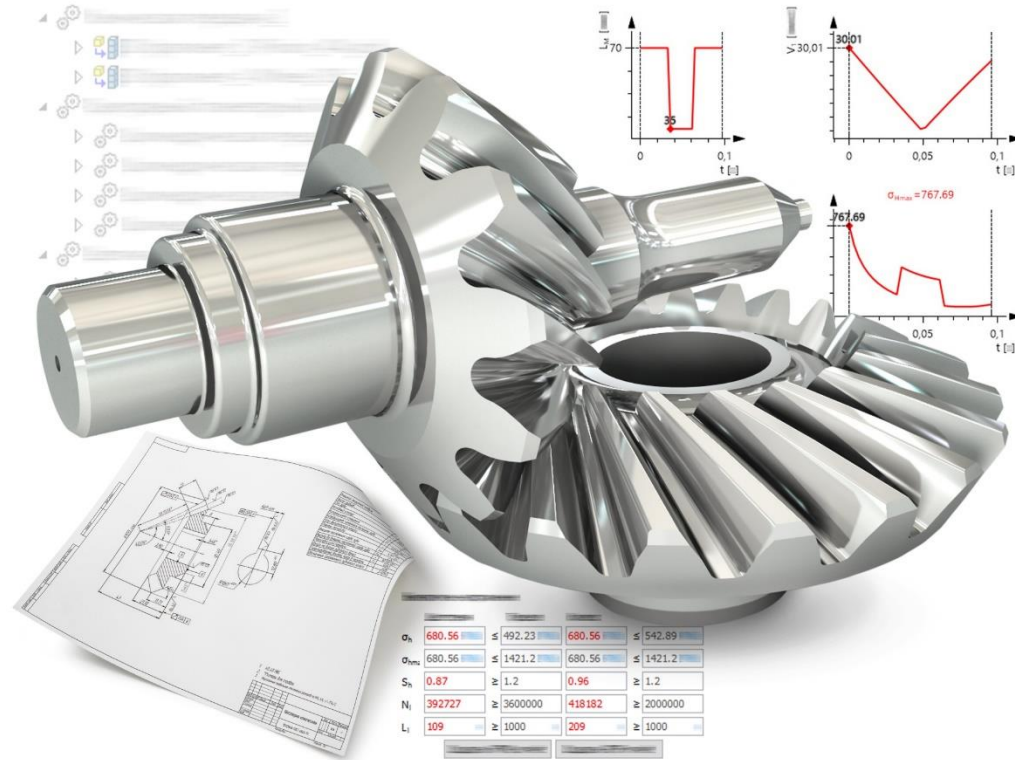
T-FLEX PLM

Design, Analysis and Calculation of Gears



T-FLEX Gears provides a wide range of tools for design, analysis and calculation of gears: from construction of two-dimensional schemes to the placement of 3D models of gears, creation of gearing or mechanisms based on multiple gearings, associatively linked 3D model and drawing, visual geometric analysis and geometric analysis according to the selected standard

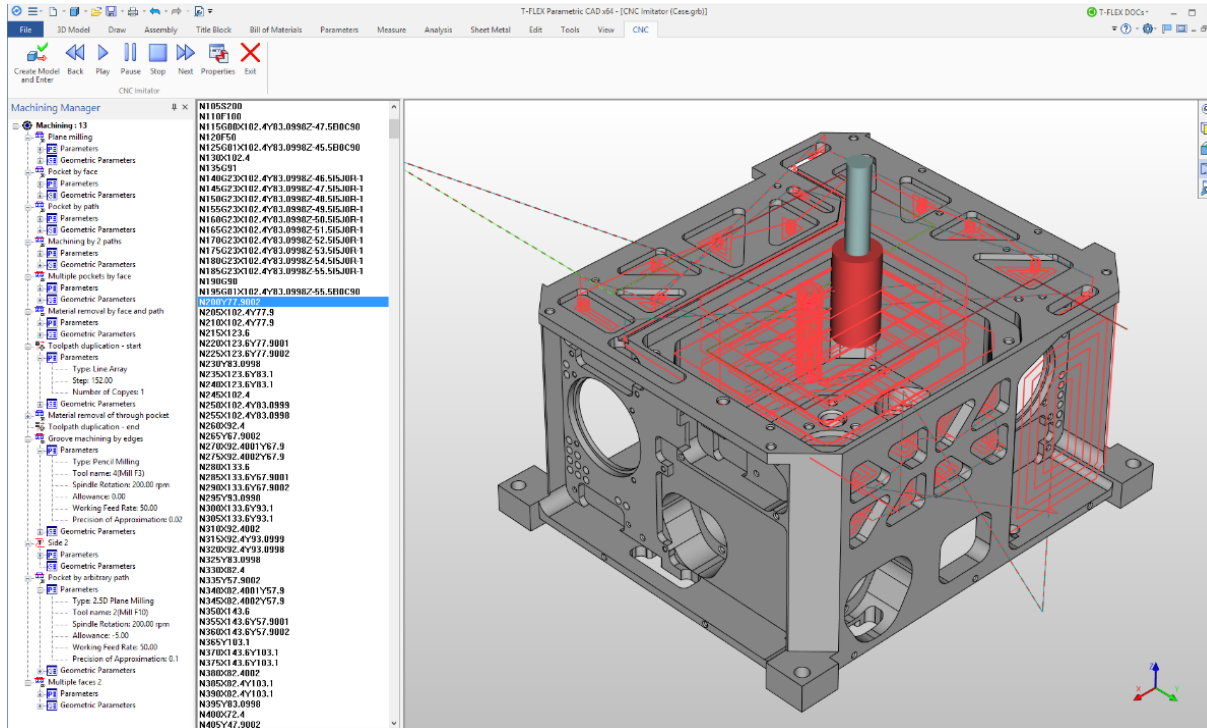
Design, Analysis and Calculation of Gears



Key Features and Capabilities

- ✓ Creating a 3D model of gear, gearing or mechanism based on multiple gearings.
- ✓ Creating a 2D model of gearing.
- ✓ Associatively linked 3D model and drawing.
- ✓ Visual geometric analysis and geometric analysis according to the selected standard (ISO, DIN, GOST).
- ✓ Visual strength analysis and strength analysis according to the selected standard (ISO, DIN, GOST).
- ✓ Calculation of the service life according to the selected standard (ISO, DIN, GOST).
- ✓ Calculation of tolerance and calculation by middle of tolerance limits (ISO, DIN, GOST).
- ✓ Ability to select the accuracy quality and calculation of tolerances.
- ✓ High precision 3D geometry.

Software for Programming CNC Machines



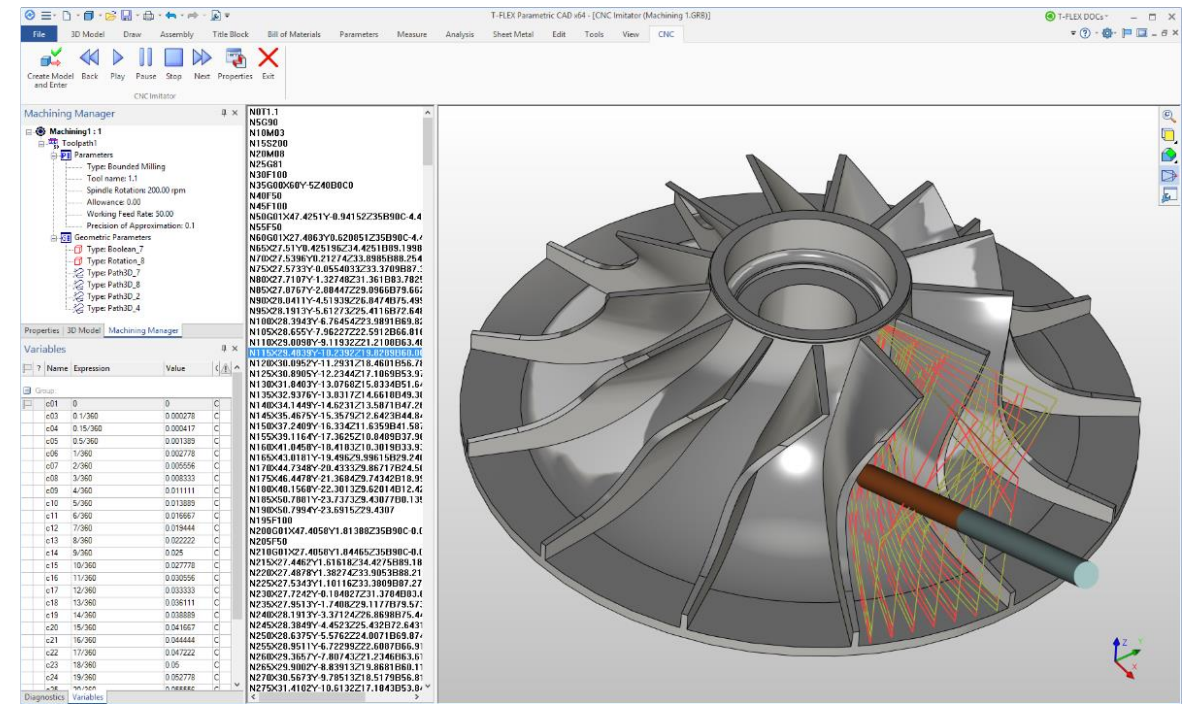
T-FLEX CAM is a fully integrated manufacturing add-on to T-FLEX CAD for generating NC programs as well as toolpath verification and machine simulation with material removal. It provides comprehensive machining tools for a broad spectrum of manufacturing sectors.



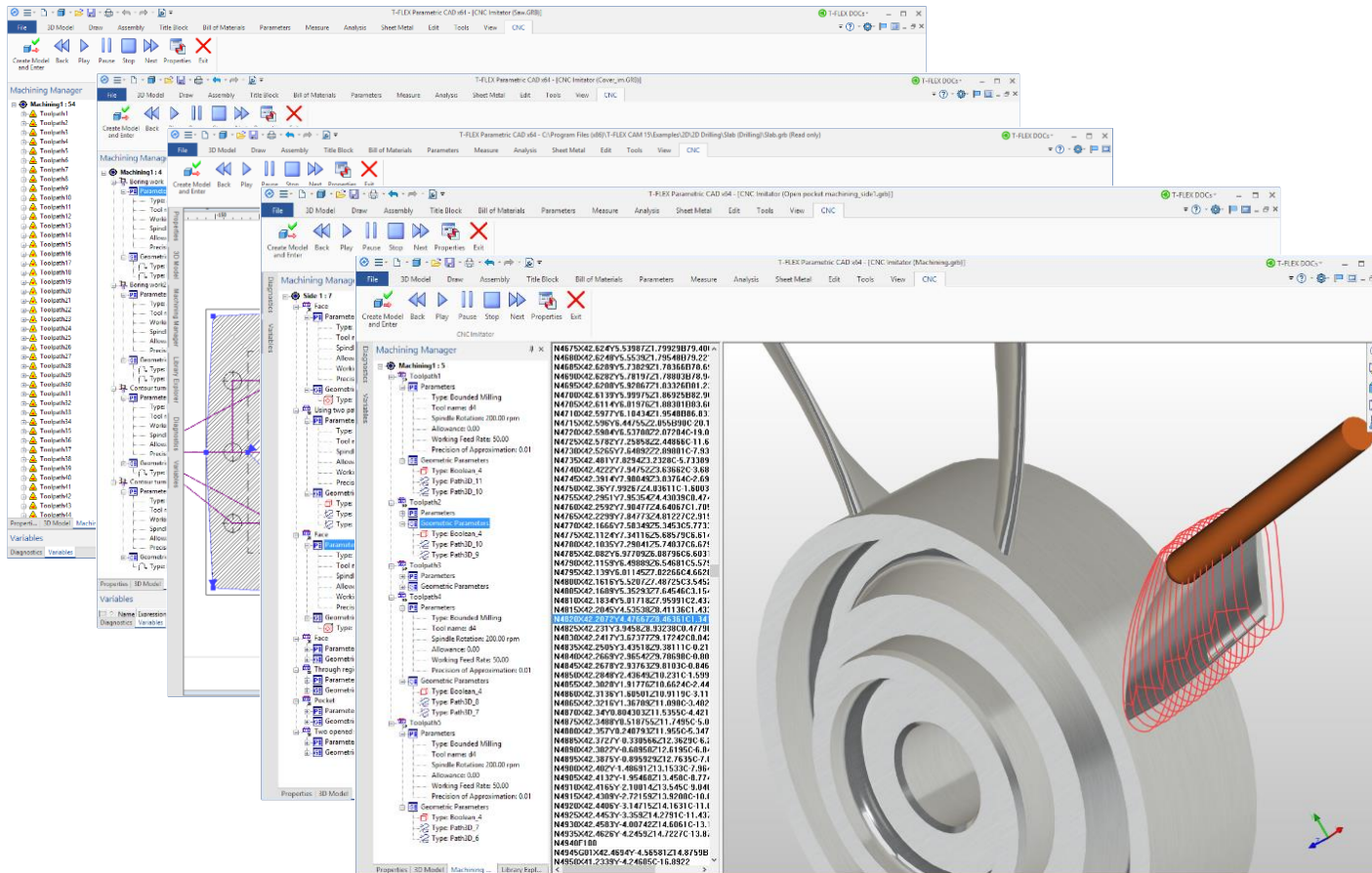
Software for Programming CNC Machines

The base module of T-FLEX 3D CAM system contains:

- ✓The mathematical core integrated with the mathematical core of Parasolid platform;
- ✓The tool editor for designing the tools employed for machining a specific part, and for building tool databases;
- ✓The postprocessor generation module that allows creating custom postprocessors, using tabulated settings, macros or actual programming;
- ✓The machining simulator showing the machining process according to the generated control sequence without the material removal;
- ✓The library of postprocessors including about 250 predefined postprocessors.



Software for Programming CNC Machines

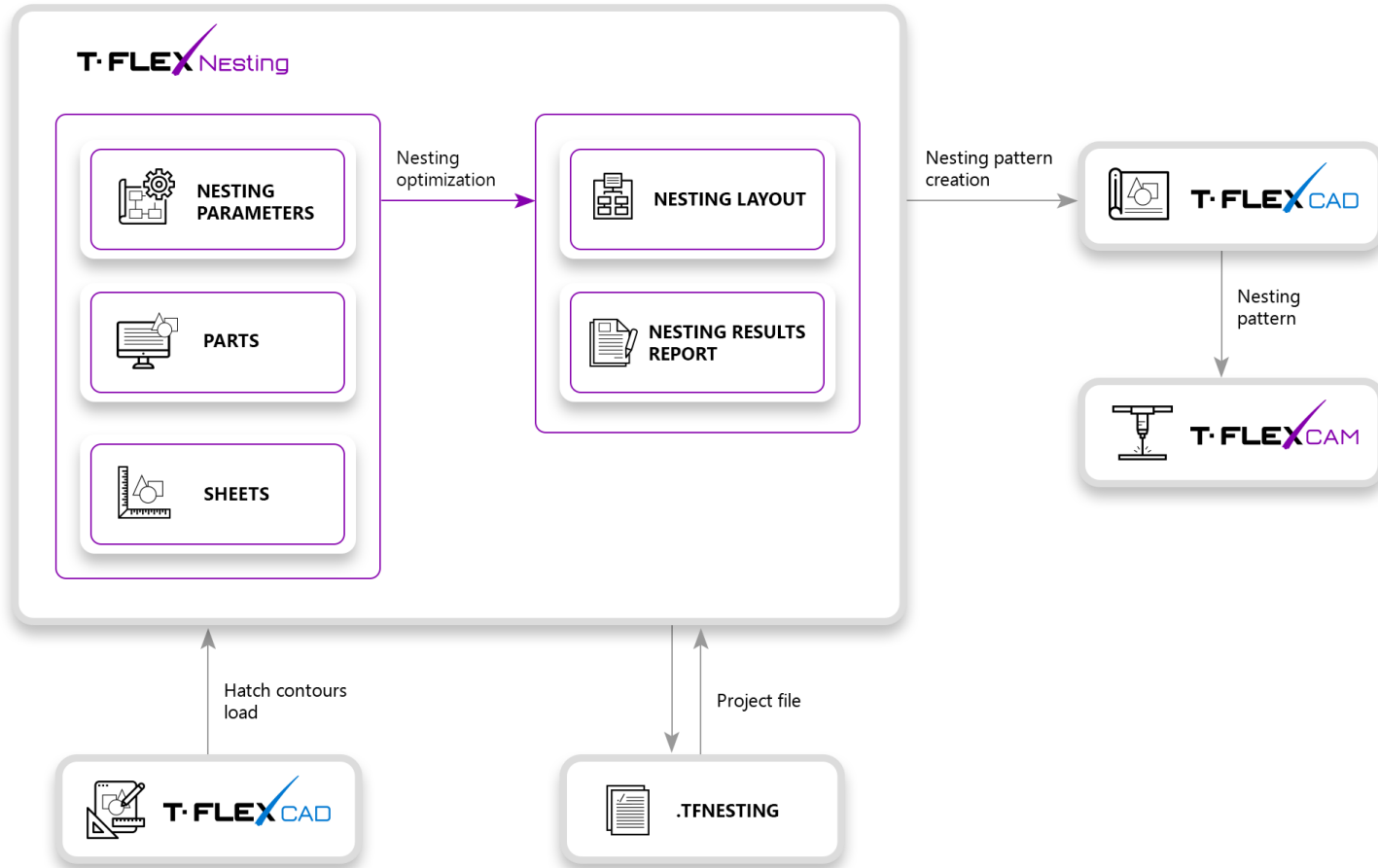


Machining Types:

- ✓ Wire EDM
- ✓ Laser
- ✓ Turning
- ✓ Punching
- ✓ Drilling (2.5D, 5D)
- ✓ Milling (2.5D, 3D 5D)



Nesting of Sheet Materials

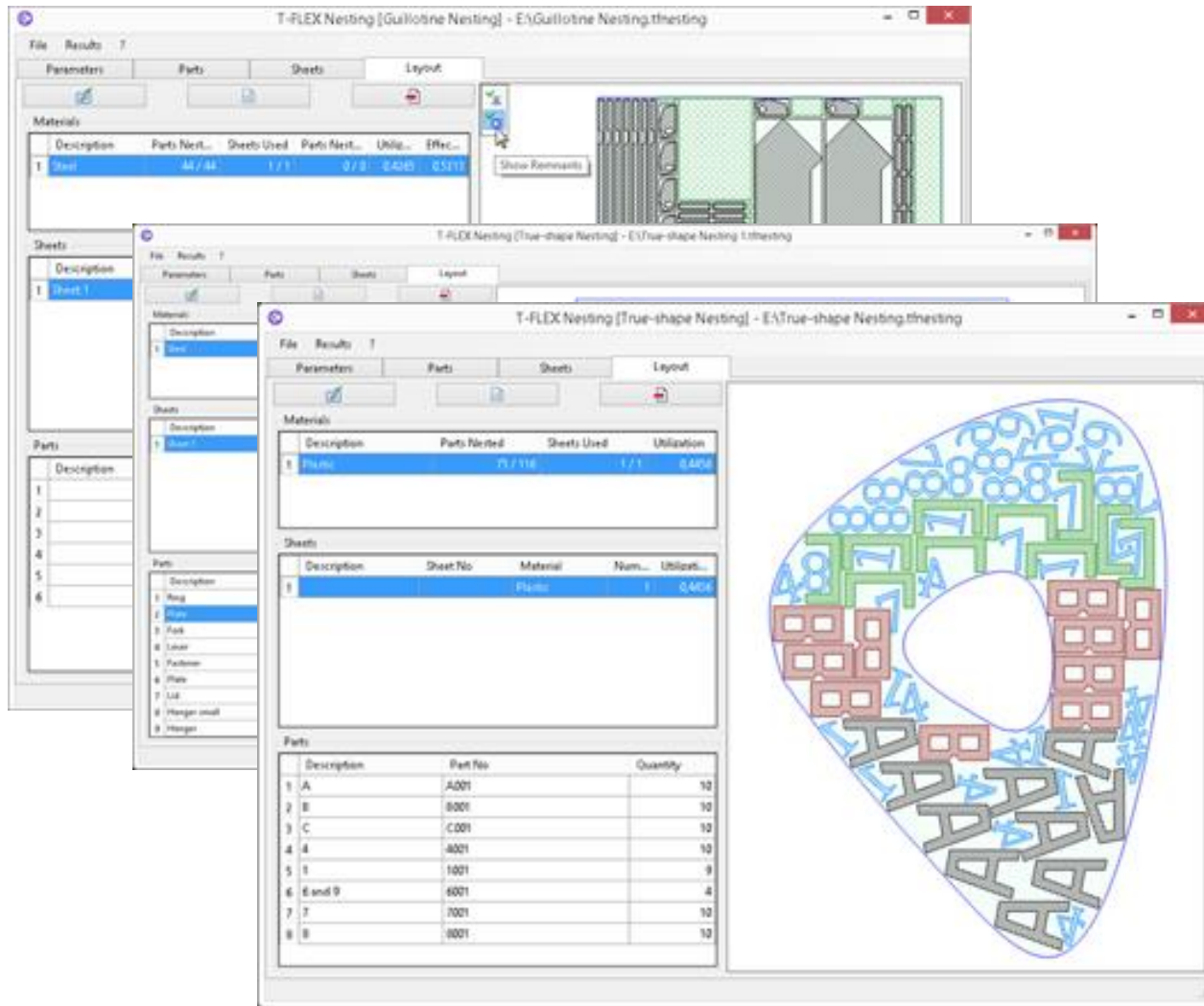


T-FLEX Nesting program is an application for the T-FLEX CAD program and is designed to automate a nesting of sheet materials for various types of cutting.

The program accurately and quickly calculates the parts nesting layout in such a way that the remnants of the material are minimal.

Nesting layouts can be exported as a T-FLEX CAD drawing and used to prepare programs for CNC machines.

Nesting of Sheet Materials



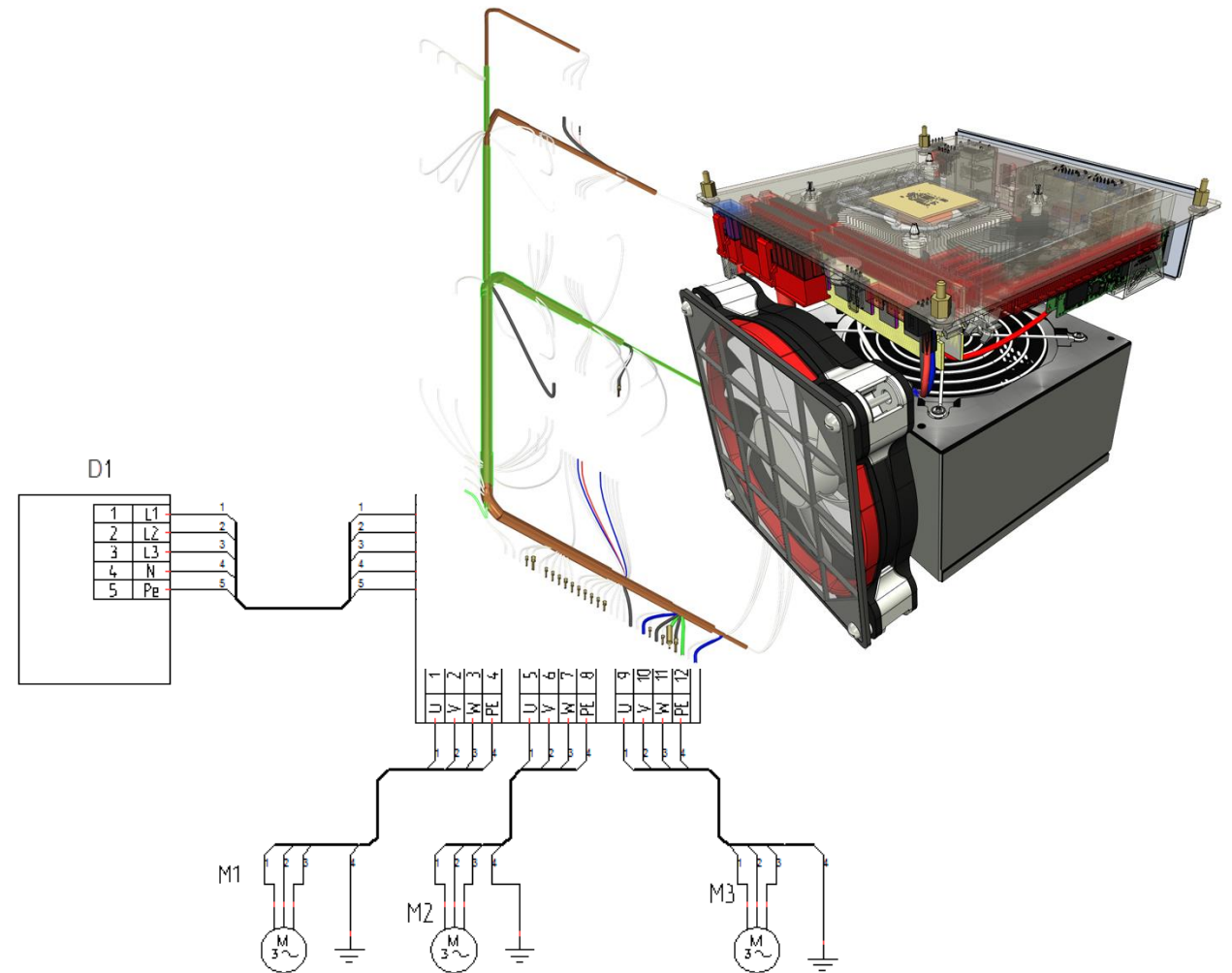
The nesting project combines the initial data, the nesting parameters and the results of the calculation of the optimal nesting.

There are general settings in the project parameters that related to the solution algorithm (gaps and indents, size of usable remnants, placing parts inside other parts, solver optimization level, etc.).

As the initial data of parts and sheets, it is possible to use hatch contours, added from one or several T-FLEX CAD drawings.

Specialized Tools for Development of Electrical Systems

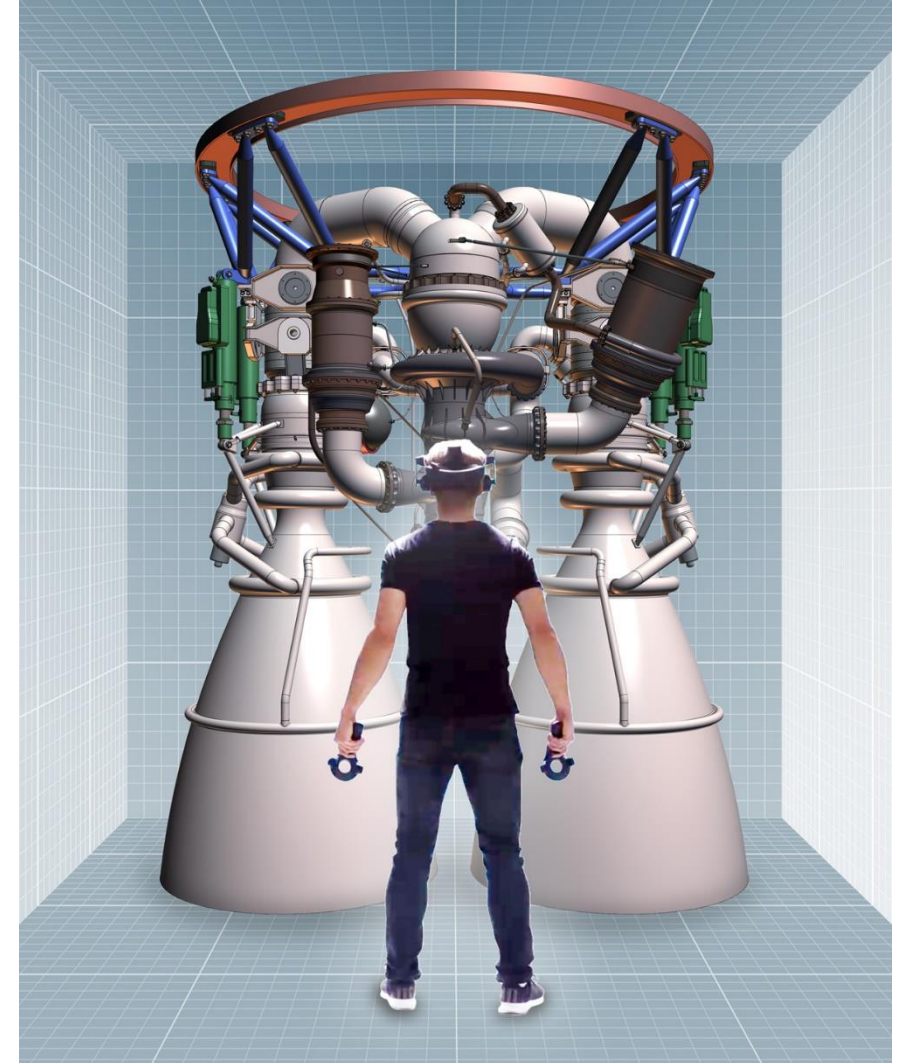
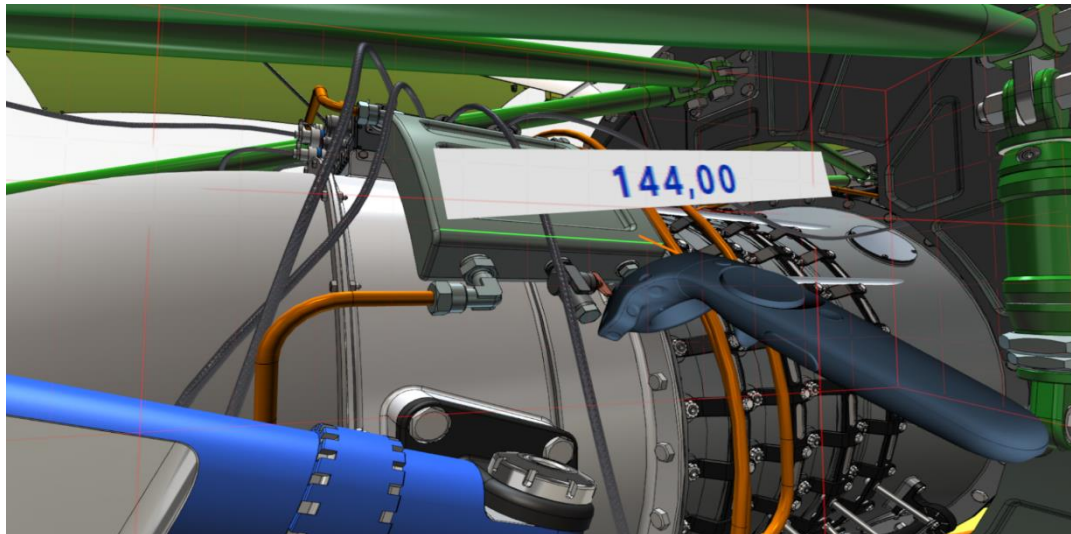
T-FLEX Electrical is a new fully integrated add-on application for T-FLEX CAD that provides a wide range of tools for development of electrical systems: from construction of two-dimensional circuits to the placement of 3D models of electrical components, creation of wires, cables and connections, harnessing and generation of fully integrated report documents, which include both mechanical and electrical parts.



Explore 3D Model in a Virtual 3D Space

T-FLEX VR allows you to explore the model in a virtual space and interact with it as if it is already a manufactured product.

3D models do not require any special preparation for display in VR.

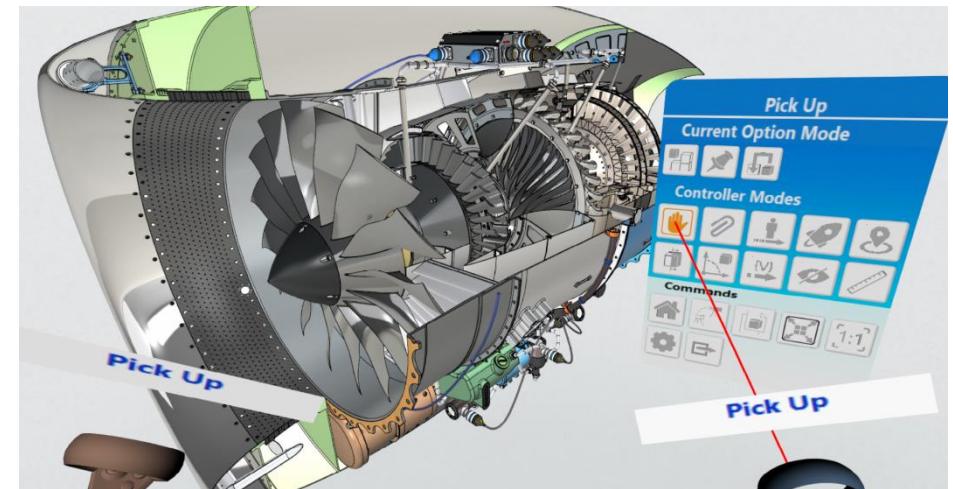
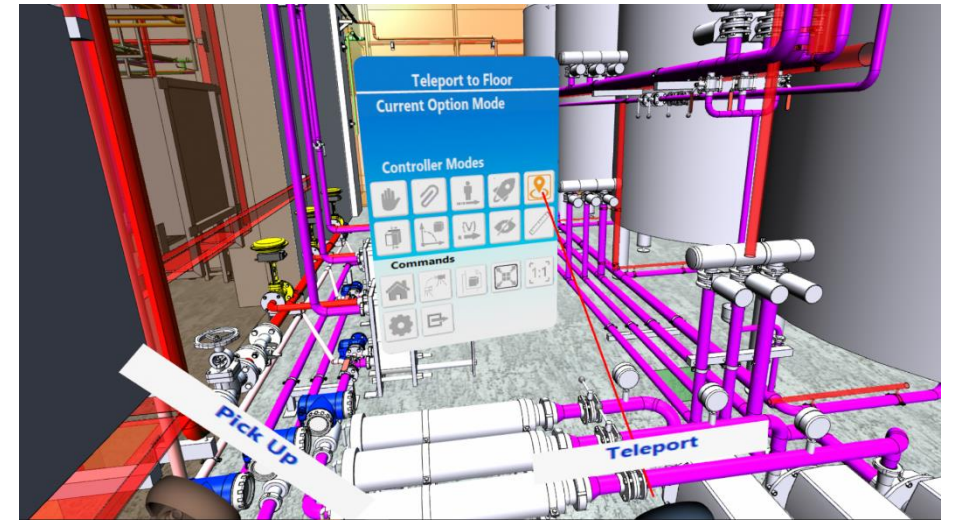


Explore 3D Model in a Virtual 3D Space

The application works with the HMDs of the HTC Vive, HTC Vive PRO, Oculus Rift and other devices that use the OpenVR software interface.

The controllers allow you to move objects in the scene and invoke commands, and the HMD gives the user a live view of the model.

Synchronous update allows the user to see the results of his actions in real time.



PLM, Document and Business Processes Management

T·FLEX  **DOCs**

ENGINEERING PROCESSED AND DESIGN MANAGEMENT

CUSTOMIZED INFORMATION SYSTEM

INTEGRATION WITH MAJOR MCAD SYSTEMS

GENERAL OFFICE AND DESK WORKFLOW

T·FLEX  **DOCs**
UNIFIED PROTECTED STORAGE
OF ENTERPRISE DATA

PRODUCT STRUCTURE MANAGEMENT, BILLOF
MATERIALS, CORPORATE DATA AND CLASSIFIERS

ENTERPRISE KNOWLEDGE MANAGEMENT AND ARCHIVE

MANAGING COMPANY PRODUCT RANGE, CORPORATE
DATA AND CLASSIFIERS

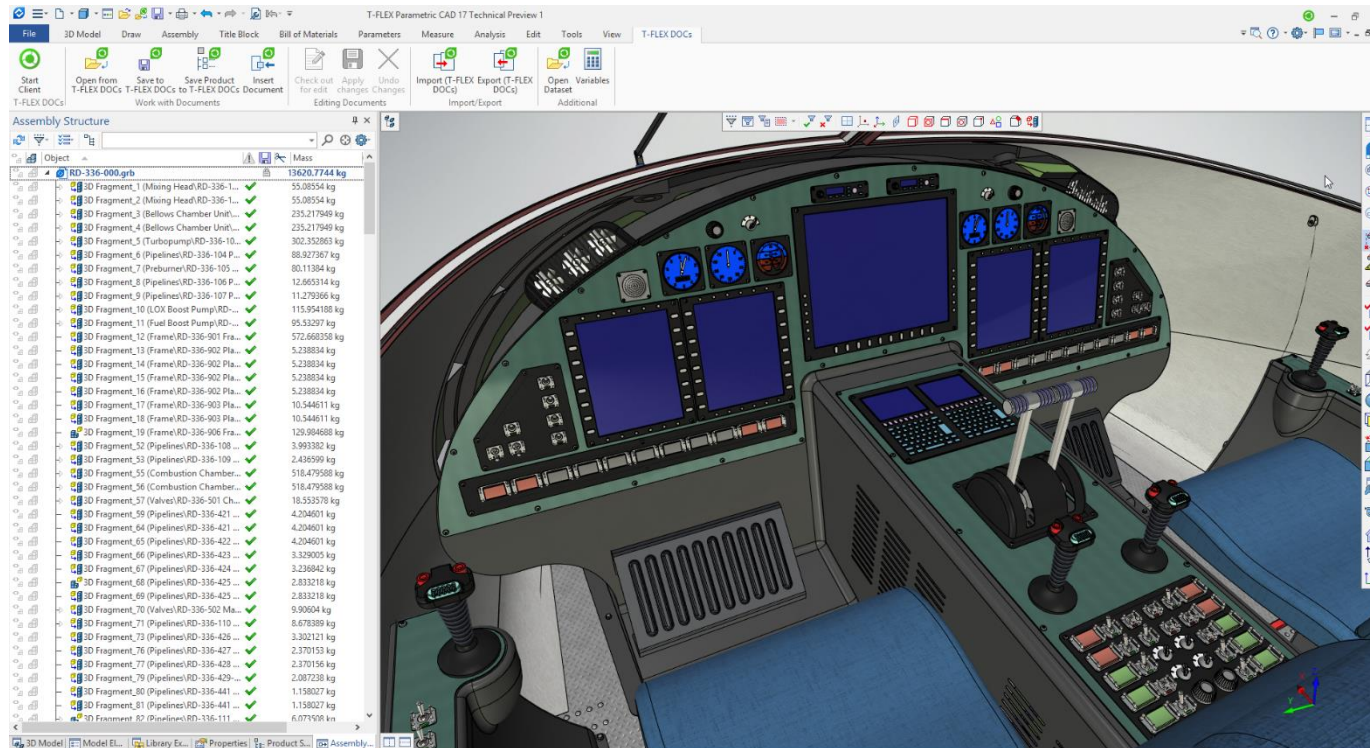
PROJECT MANAGEMENT, COST AND RESOURCE PLANING

MAIL AND TASKS, WORKFLOW MANAGMENT

INTEGRATION WITH ERP SYSTEMS

T·FLEX  **PLM**

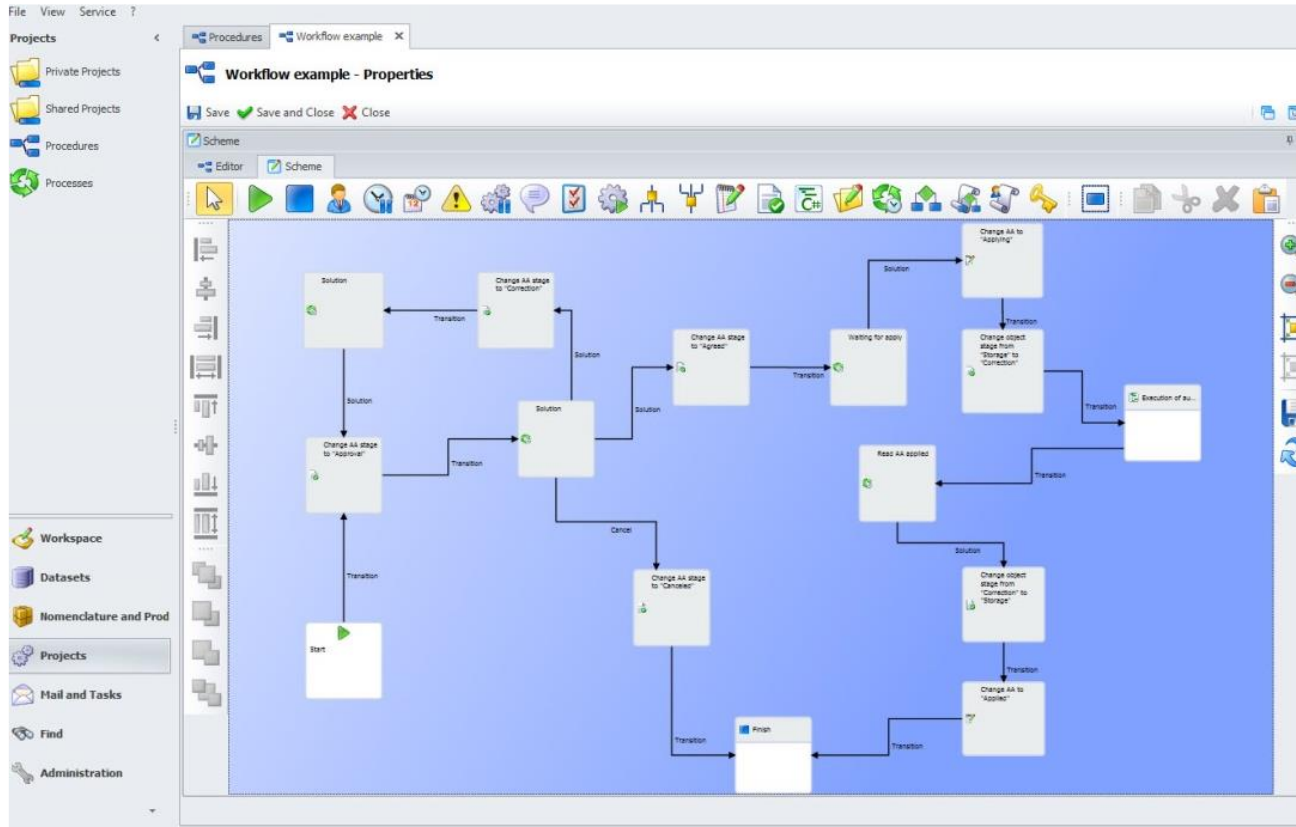
PLM, Document and Business Processes Management



T-FLEX DOCs delivers end-to-end data and process management providing an overall solution to manage a product's entire life cycle, linking data from CAD/CAM/CAE applications.



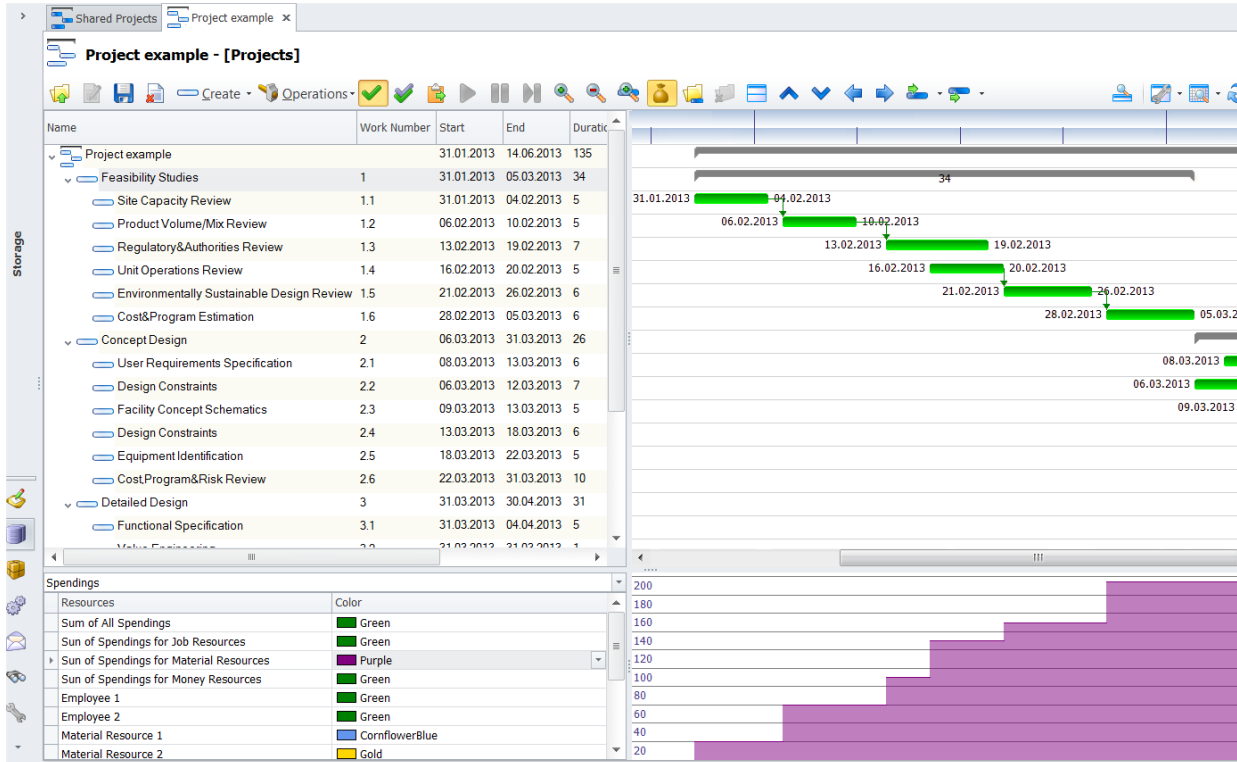
PLM, Document and Business Processes Management



- ✓ Engineering Processes and Design Management
- ✓ General Office and Desk Workflow
- ✓ Enterprise Knowledge Management and Archive
- ✓ Project Management, Cost and Resource Planning
- ✓ Mail and Tasks, Workflow Management



PLM, Document and Business Processes Management



- ✓ Integration with ERP Systems
- ✓ Managing Company Product Range, Corporate Data and Classifiers
- ✓ Product Structure Management, Bill of Materials, Configurations and Versions
- ✓ Integration with Major MCAD Systems
- ✓ Customized Information Systems





For more information about T-FLEX CAD and other Top Systems' products you may contact directly our company or any regional representative

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CONTACT US