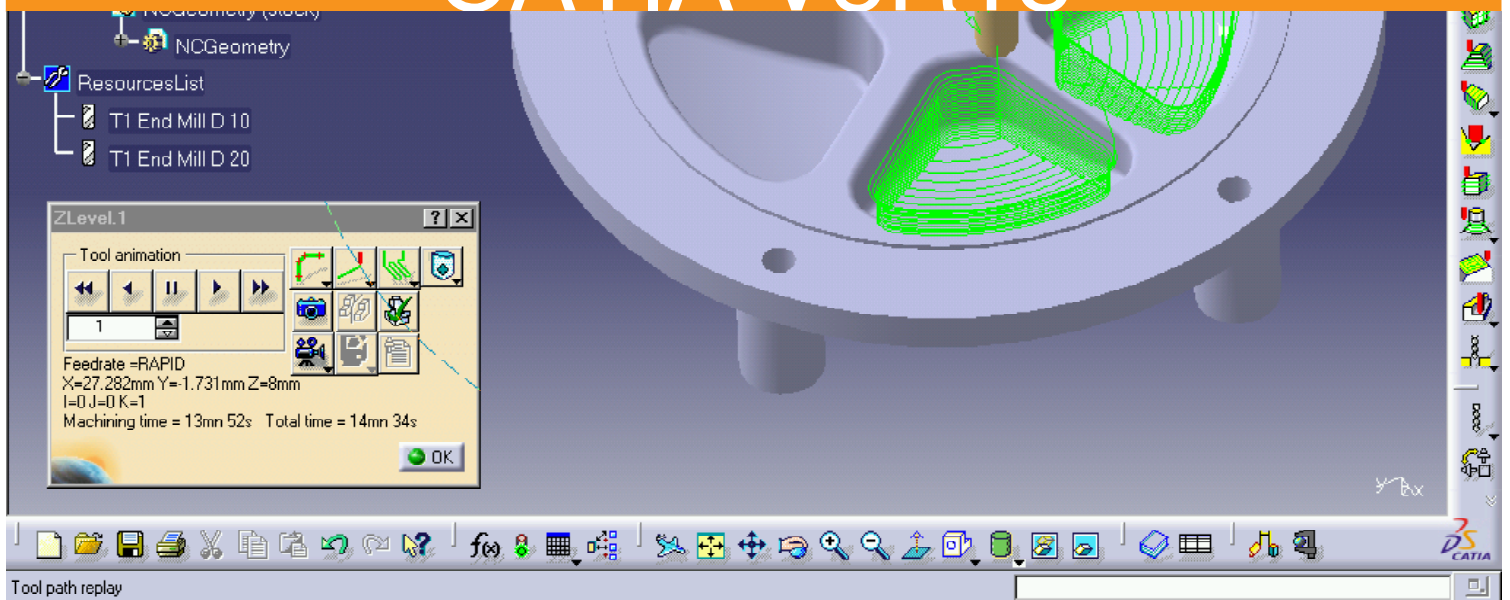


Machining

CATIA - 3-Axis Surface Machining 2 (SMG)

CATIA V5R18





Machining

CATIA - 3-Axis Surface Machining

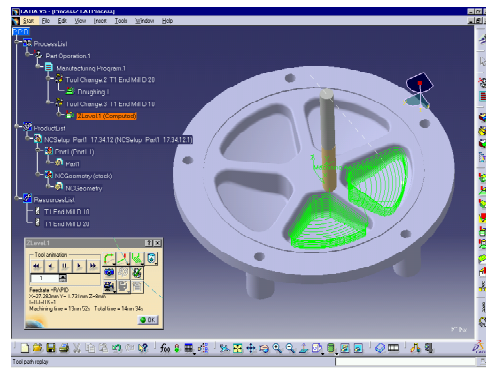
Easily define NC programs dedicated to machining 3D parts using 3-axis surface machining operations.

Product overview

CATIA - 3 Axis Surface Machining 2 (SMG) easily defines 3-axis milling and drilling operations. High Speed Milling Technology is supported for all milling operations. Quick tool path definition is ensured thanks to an intuitive user interface based on graphic dialog boxes. Tools can be easily created and stored in tool catalogs. Entire manufacturing process is covered from tool path definition and computation, tool path verification including material removal simulation to NC code and shop floor documentation generation. Instant Cycle Update Technology (TM) allows fast tool path update after modification. Associativity with CATIA design parts allows efficient change management.

Product Highlights

- Full set of 3-axis milling and drilling operations for accurate tool path definition, including support of High Speed Milling technology
- Automated detection and reworking of unmachined areas in roughing or finishing
- Flexible management of tools stored in file-based tool catalogs or in external tool databases
- High level of automation and standardization by capture and reuse of proven manufacturing know-how
- Tool path verification by material removal simulation and analysis of the in-process part



- Associativity with CATIA design parts for efficient change management.

Product Key Customers Benefits

Accurate tool path definition for drilling and 3-axis milling...

The user can elaborate sweep roughing, roughing, sweeping, z-level milling, spiral and pencil milling, face-isoparam and between-contours machining operations for tool path definition. Moreover, profile contouring and axial operations for holmaking are available. Machining areas can be controlled by surface angles. High Speed Milling technology is supported for all milling operations. Unmachined areas in roughing and finishing are detected and reworked in an automated way. As CATIA - 3 Axis Surface Machining 2 (SMG) supports 5-axis positioning, thus enabling the user to program also 5-axis machine tools or 3-axis machine tools equipped with rotary table.

Quick tool path definition thanks to an

intuitive user interface...

The user defines machining operations quickly using intuitive graphic dialog boxes. "Traffic lights" indicate if there are still parameters to be defined in order to complete the operation. Help icons assist the user for each parameter of the operation : when clicking on these help icons, an image describing the parameter pops up in the panel. Moreover, the user takes advantage of copy/paste facilities for organizing program using specification tree. Finally, tool changes and machine rotations are automatically generated and can be visualized in the machining operation definition panel.

Flexible management of tools and tool catalogs...

Tools can be stored into file-based tool catalogs and retrieved using simple or complex queries. Tool assemblies (tools and tool holders) are supported so that the user can define the characteristics of the tool visualization. Tools can also be retrieved from external tool databases (like CATIA Version 4 TDB or WALTER TDM databases).

Machining areas definition...

The final part can be split in several machining areas. Different offsets can be applied to each machining area, thus allowing the user to machine a final part with different local offsets.

Automated reworking...

Unmachined areas in roughing and finishing are detected automatically and can be reworked with different milling strategies.

Fast tool path update after modification...

The Instant Cycle Update? Technology allows a partial recomputation of the tool path. After parameter modification, recomputation is done only on the impacted part of the tool path. This avoids a full computation, thus saving substantial time.

Tool holder collision checking...

While detecting a possible collision between the part and the tool holder, the system creates a warning and a proposal for a proof tool path.

Automation and standardization...

The user can define and store machining processes for 2.5 axis milling or axial machining operations in CATIA catalogs, and apply them to part geometry or to design features. By this, the company know-how can be capitalized and reused for efficient programming. NC objects and attributes can be handled as knowledgeware objects in order to increase the level of automation and standardization.

Quick verification of tool path...

Tool path replay allows generation and verification of individual operations or the complete programs. Alternative machining strategies can be tested and collision-free trajectories can be obtained.

In-process part visualization and material removal simulation...

The user can visualize the in-process part and analyze remaining material, tool collision, etc. Furthermore, he can run a material removal simulation interactively or in batch-mode.

Seamless NC data generation...

CATIA NC process is extended from tool trajectory (APT source) to NC Data generation (ISO format) thanks to an integrated postprocessor execution engine and a library of standard Post Processor (PP) samples. Moreover, the system allows the execution of Post Processors built with CATIA Version 4 Post Processor Builder product.

Efficient change management...

Integrated in the PPR data model CATIA NC offers a high level of associativity product engineering, manufacturing processes and resources. Thus, CATIA allows an high efficiency in concurrent engineering and best support of design changes or design variants and a rapid creation of programs for families of parts.

ABOUT CATIA V5R18

CATIA is Dassault Systemes' PLM solution for digital product definition and simulation.

plm.3ds.com/CATIA

