



Machining

CATIA - NC Machine Tool Simulation

Upfront integrated environment for machine and material removal simulation based on tool path or ISO code during machining operation definition.

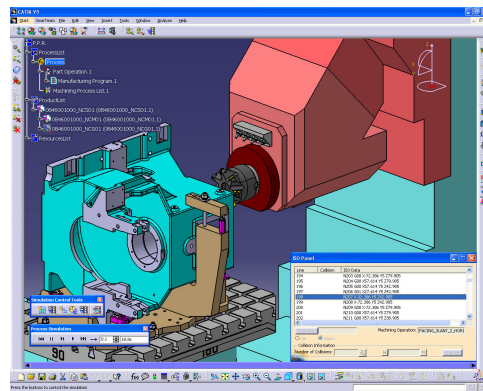
Product overview

NC Machine Tool Simulation easily validates the machining setup for selected NC machines and tool paths, during machining operation definition. It enables the NC programmer to assign a virtual machine to a part operation, simulate selected tool paths with the machine, determine interferences, modify tool paths or machining operations, generate ISO code, and simulate machine motions and material removal based on ISO code.

NC Machine Tool Simulation dynamically detects collisions, if any, during simulation. It enables the NC programmer to re-visit these collisions at the end of a simulation run, and to modify machining operations to avoid collisions. It also detects axis limit errors, which can be interactively corrected by modifying the machining setup, thereby enabling the NC programmer to validate and finalize the part setup.

MSG enables NC programmers to:

- ❑ Simulate NC machine motion and material removal based on NC tool paths or ISO Code during NC programming
- ❑ Detect and correct interferences in tool paths and ISO code
- ❑ Interactively avoid collisions by teaching machines collision-free paths or by editing Machining Operations thus reducing programming lead time



Product Highlights

- ❑ Automatic mounting of workpiece and machine setup validation
- ❑ Integrated simulation of NC machine motions and material removal based on tool paths or ISO code
- ❑ Synchronized display of ISO code during ISO based simulation
- ❑ Validation of a manufacturing program, a single machining operation or a zone of a machining operation
- ❑ Easy collision queue setup and detection
- ❑ Interactive modification of tool path or Machining Operation for collision avoidance
- ❑ Checking of travel limits of the machine tool
- ❑ Distance and Band Analysis
- ❑ Accurate cycle time calculation

Product Key Customers Benefits

Shortened NC programming time thanks to

an end-to-end machining solution with seamlessly integrated NC machine tool simulation :

users can easily switch between definition and validation without losing time due to data transfer or preparation (no third party Software interface issues)

Tool Path validation at an early stage avoids problem and modification loops:

Thanks to realistic NC machine tool and material removal simulation based on ISO code, parts will be cut right the first time, thereby reducing lead time from programming to production

Increased process quality, thanks to easy problem identification and resolution :

in case of collisions or exceeded travel limits, users can interactively edit machining operations or modify tool paths.

Avoided redundant machine tool data, thanks to a single comprehensive machine tool description with geometry, kinematics and technological information:

The definition of the NC resource can be used in the entire machining process including NC planning and detailing, simulation and verification, post processing and controller emulation.

ABOUT CATIA V5R18

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

plm.3ds.com/CATIA

