

NSIMUL Feature Chart

NCSIMUL Feature Chart 2022.0

	NCSIMUL Essential	NCSIMUL Standard	NCSIMUL Advanced	NCSIMUL Ultimate	Comments
Machine Digital Twin license					
MDT Single Machine license			●	●	One license for only One machine, Hexagon delivers everything to the customer but the customer can Only simulate One Machine (the license is locked to one machine) Modify machine and controller parameters
No license	●				Just hand-check between CAM software and NCSIMUL API
Machine type					
Lathe 2 Axis without milling tools		●	●		One license for 2 Axis turning without milling tools

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Milling up to 3+2 indexed axis	●	●	●		One license for Milling up to 3+2 axis
Milling 5 axis continuous	●	●	●		One license until 5 axis continuous (simultaneous)
Mill-Turn Mono-channel		●	●		One license for turning and multi-axis milling, 1 channel (i.e. 5 axis continuous milling, Millturn machine mono channel)
Mill-Turn Multi-channel				●	One license for turning and multi-axis milling, up to 3 channels (i.e. 5 axis continuous milling, Millturn machine multi channel) - (Request and validation from the MIT will be necessary to validate the number of days of development and thus, the price)
Robots				●	One license for 6-Axis Robots (Request and validation from the MIT will be necessary to validate the number of days of development and thus, the price)
Parallel Kinematics (like Millturn Multi-channel Machines and Tricept)				●	One license for complex machines/special machines (Request and validation from the MIT will be necessary to validate the number of days of development and thus, the price)

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Standard Features (all licenses)					
CAM trajectory validation	●				Read, verify and display milling, drilling CAM trajectories tool paths with error alerts. Including material removal on stocks and collision detection on tools, fixtures and finish parts.
Program validation		●	●	●	Read, verify and display milling, drilling and turning G-code files with error alerts. Including material removal on stocks and collision detection on tools, fixtures and finish parts.
Machine simulation	●	●	●	●	Run a full collision detection including nearness collision alerts.
Direct-Link	●	●	●	●	Incorporate a constant and dynamic link between program, information and 3D windows, with smart model memory on machined surfaces.
Multi process validation			●	●	Create projects which contain multi process (Op10, OP20, ...). Each process use the

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					rough stock resulting from the previous process
Multi step validation and simulation			●	●	Verify and simulate multiple operations in one simulation session, including part transfers and manual manipulations.
Break option and selective Simulation			●	●	Rebuild stock material and resume simulation from the corrected line. Simulate a standalone selection of G-code lines.
Kinematics configurator (NCMOTION)			●	●	With Multiple machines license only , build or modify machine kinematics.
Graphic comparison	●	●	●	●	Detect variations between NCSIMUL machined part and the CAD part.
Gouge-checking			●	●	Detect and list gouging, with tool position and gouge volume readouts.
Surplus-checking			●	●	Detect and list surplus, with tool position and excess volume readouts.
Graphing functions			●	●	display technological parameters with a dynamic graph linked to program.

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Cut Analysis functions			●	●	display cutting condition (AP, AE, H, Fz) parameters with a dynamic graph linked to program. Export in csv format only with Optitool module.
Model Cut	●	●	●	●	Inspect internally machined features using section views
Measurements	●	●	●	●	Use dimensional tools to analyse Cut results and measure distances between all elements.
Automatic cutting tool length optimization			●	●	Gain clearance and minimize tool length under holder by calculating the minimum tool stick out length.
Model Interfaces			●	●	Create fixtures, stocks, parts, tools and tool holders with Model files in STEP, STL, IGES, and DXF formats.
STEP Import			●	●	Import .STEP files in NCSIMUL
Model Export			●	●	Create NCSIMUL machined parts models in STL, STEP or NCSIMUL format.

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NCSIMUL Player			●	●	License free collaborative tool for the shop floor. all verification, simulation replay, and measurement functionalities are available for validation use.
NCSIMUL Report			●	●	Use NCDOC license only , allow to open a NCSIMUL project to create or modify the technical documentation. In this mode, program replay and measurement functions are available.
Borrow licenses for a period of days			●	●	Only available with CLS protection
Optional Features (Additional modules)					
Probing			●	●	<ul style="list-style-type: none"> - Simulate probing tools routines and subprograms - Locate stock and fixtures, adjusting offsets - Measure and adjust tool & fixture offsets

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Optimization (OPTITOOL) - Milling: Air-Cutting + In-Cutting up to 5Axis milling			●	●	Reduction of the unit machining cycle time: approach / clearance Optimization of cutting conditions: learning mode - Optimize in-material feed-rates with an automatic learning mode - Optimize tool-path outside the material - Support multiple machines
Optimization (OPTITOOL) - Turning only mono channel : Air-Cutting + In-Cutting			●	●	Reduction of the unit machining cycle time: approach / clearance Optimization of cutting conditions: learning mode - Optimize in-material feed-rates with an automatic learning mode - Optimize tool-path outside the material - Display the cutting aera of the insert - Support multiple machines
Technical Documentation (NCDOC)			●	●	Automatic Shopfloor Documentation (technical instructions and control sheets) - Creates setup procedures - Generates inspection reports - Documents tooling instructions

