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This document lists the notable enhancements and bug fixes that went into MecSoft's 2021 CAM products Service Pack that was released on July 23, 2021

Enhancements

Icons and buttons for supporting high resolution (4k) monitors
Adaptive Roughing was enabled for STD Configuration and above
Turn Parting off to compensate for tool width based on the program point of tool and part off position
Network locked licensing was implemented for the 2021 product version

Post-Processor
New posts were added to the MILL and TURN modules
Implemented "OnSetupStart", "OnSetupEnd", "OnCollectorStart", "OnCollectorEnd" events
New Setup CSYS variables were implemented in the post-processor
Implemented usage of *.spm file from python script variable
Added post-processor version string into the "Post Options" dialog

RhinoCAM SDK
Added functions to post individual setups and MOps
Integrated the RhinoCAM SDK into RhinoCAM product installers
RhinoCAM SDK registry data in separate keys for Rhino6 and Rhino7

Bugs Fixed

RhinoCAM Specific
Adding a SubD face to an existing selection of Part Surface(s) fails to select the SubD face
Adding a SubD face edge to an existing selection of Part Regions using Select Curve/Edge regions under Control geometry drops the existing selections
Select Holes on Flat Areas fails to add the selected flat area to part regions in control geometry for polysurfaces in Rhino 6 & 7
Toolpath computation based on the Rhino render mesh was implemented with the "MECSOFT_USE_RHINO_RENDERMESH" environment variable is set to '1'

Post-Processor

Posting a Setup with Output tool list as comments at start of program enabled, outputs the tool list used in all setups

Issue with programmable post when user try to use script from custom folder without default.spm inside

Consecutive fixture offset register values are not being posted

Linear motion output for cases when additional lines added to linear motion block format by programmable post-processor

Multi-Axis Milling

5 axis drive curve errors out with "Tilt angle strategy is not supported by wireframe 5 axis profiling

Using expressions outputs a value of 0 when always output + sign is selected under General section

Regenerating 2 or more simultaneous 5 axis mops using multi-threading creates too many unwinds

Floor surfaces in swarf machining not being honored

3 Axis Milling

Criss cross issue found in horizontal finishing operation with optimized machining turned on was fixed

Horizontal Finishing cut transfer motion between step downs generates a zig zag path

Environment variable "MECSOFT_SKIP_FLATS_FILTER" to skip flat regions filter was added

Rapid cut lift motions were implemented for the high-speed machining

Adaptive roughing errors out with "Distance where tool keeps its initial orientation must be greater or equal 0

Adaptive roughing takes very long to generate toolpath

Clearance Plane issues of Adaptive Roughing and 5-Axis Machining operations were fixed

The user cannot get a single Z level in the adaptive roughing module

Adaptive roughing does not work if there is a Work Zero translation or a MCS rotation from WCS orientation.

Adaptive Roughing selected surfaces handling, surface extent conditions and engage parameters were implemented

2 Axis Milling

Selecting cleanup pass in 2 axis pocketing with high-speed cut pattern offsets the clean-up pass in Z by the cut depth

Bridges/tabs are not generated at specified bridge point locations in the latest installers

Engraving fails to generate when bridges/tabs are specified and errors out with invalid arguments

Specifying manual bridge points using pre-defined regions and selecting pre-defined regions as part region for engraving does not place the bridge points at the specified locations

Selecting 2 or more lines as control geometry for Knife cutting operation generates toolpath only for the first curve

Swivel depth is offset by the part height when WCS is set to bottom of part & Work Zero to top in Z

Clearance height is not honored when set to automatic or part max Z + distance for some parts

Flat regions selection error handling was improved

Hole Making

Minimum diameter value resets to 0 under diameter filter range in hole making operations (Drill, tap, bore & rev-bore)

Simulating drill mop shows transfer motions converging to a point - regression

Diameter hole filter check box and min/max values are reset when you edit the mop after generating toolpath in hole & drilling ops

Non clearance transfer motions were replaced by the cut motions encountered

User Interface

Clearing check boxes for output arcs in XY, XZ YZ planes under Output Control reverts back to being checked

Cloning Mops when one of the Mops is suppressed locks up the application & needs to be terminated from task manager

Mops are not flagged dirty when geometry is transformed for attached test case

Loading KB with selection rules selects hidden geometries

KB Selection rules selects regions from layers that are not visible when the KB is loaded

Spell checker errors show up was disabled in case when the dictionary files are missing

ToolTips memory leak was fixed

Simulation

Create Stock from definition when loading a KB creates stock of 10x10x10 that is way too big & does not compute based on the part bounding box

Running simulation fails to show cut material simulation past the 2nd mop for attached test case.

Surface boundary selection was implemented in RhinoCAM for Rhino 7

Simulating drill mop shows strange toolpath display when work zero is translated from WCS origin

Profile-Nest Module

Profile-Nest fails to nest profile toolpath when the selected sketch references anything from this original sketch upon executing nest in VisualCAM for SolidWORKS

Opening a part saved in CAM 2021 with Profile-NEST data, drops the defined sheet

When I go to Sheets and click Select Curve(s) and select a rectangle it returns multiple sheets

Loading saved part & defining a rectangular sheet by specifying Length, Height, thickness & Count, and executing nest results in the following error

Renaming a Sheet under Sheet Selection does not show up when you save & load the part back and select the sheet to update under Sheet Definition

Renaming Sheet under Sheet Definition and selecting Update Sheet does not update the sheet name under Sheet Selection