What’s New in SolidCAM 2016
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SolidCAM 2016: Advanced Mill-turn solution
VMID (Virtual Machine ID) change: Devices on Axes

- Devices on Axes (and not Axes on Devices): support of several devices mounted on the same axis
- The VMID definition is now similar to the Machine Simulation structure
VMID (Virtual Machine ID) change: Separation of parameters by Submachines & Channels

- More flexible definition of Controller parameters: possibility to apply different values to parameters used in different Submachines & Channels
VMID (Virtual Machine ID) change: Tilted plane definition

- Full control over coordinates calculation, in case when physical rotary axes are missing on the machine
Interactive Machine Preview for VMID

Preview of:

- Machine’s STLs
- Device/Stations CoordSys
- Kinematic axes
Stock positioning: Mounting the stock on the table

- Stock is mounted on the table (instead of Submachine) – same as on the real machine
- Definition of initial stock position (on which Table the machining starts)
• The stock tracking is added in order to assist the programmer in definition of CAM-part movements

• Chuck device is moved to the Table as “Clamp” action, with 2 additional options:
  • “Close on stock” (connect stock to this table)
  • “Release stock” (when machining is complete – stock is removed from the machine)
Define axes position of relevant device in Machine preview → import the position to the Movements list
Action by CNC Operator: new MCO “device”

- Any action of CNC Operator can be taken into account in machining time calculation
- Manual Stock Transfer from table to table option
• Support of several Gears on the same device = spin definition as on real machine
• Automatic selection of the Gear according to the Spin defined
Interactive Machine Preview for Tooltable

New Mounting interface:
- Possibility to see other tools mounted on the same turret
- Preview of machine (if Machine model for Machine simulation is defined)
- Control over machine axes position – for better understanding of mounting
Machine Simulation: Show actual axes positions

No need anymore to select previous MCOs in order to launch MachSim on selected operation
Result: Extended support of complex mill-turn CNC machines

Extended support of complex mill-turn machines in all stages:

- Virtual machine (*.VMID) definition
- Tool mounting
- CAM-part programming
- Machine Simulation
- G-code generation
Extended support of complex mill-turn CNC machines

Bumatec S191

Chiron Z8 T2

Chiron Z8 T4

Chiron F12 KS

Willemin 508

Chiron Z8 T3
What’s New in SolidCAM 2016

Channel Synchronization
Channels Synchronization: Colors definition in Machine ID file (*.VMID)

- Operation in Channel Synchronization manager could be colored by Table, by Turret and by Workpiece.
- Colors of table, turret, workpiece and various stock management operations are set in *.VMID file.
- Colors of Label and of the cell in case of manual operation duration definition is set in SolidCAM settings.
Channels Synchronization : Axes transfer from channel to channel

• Right click on non-kinematic (gray italic) Axis in Lable allows to transfer control over this axis to another channel
Channels Synchronization: Continuous production

- Reordering of the operations inside the same channel in order to provide synchronization between the start and the end of the CAM-part machining process.
- Possibility to emulate the machining of several workpieces on different tables simultaneously.
Channels Synchronization: Clash reports’ visualization

- Problematic places (axis, drive unit, operation cells) filled by red color
- When select the operation, arrow to the operation/axis/drive unit caused the problem appear
- Floating tip with explanation
Channels Synchronization: Functional toolbar improvement

- Redo
- Undo
- Color operations by Workpiece
- Color operations by Table
- Color operations by Turret
- Delete all labels, but keep the operations order
- Add Workpiece (and start it’s machining from the selected operation)
Channels Synchronization: Time mode

- Preview of operations in real-time mode
- Impossible to change synchronization labels and operations order – it’s only preview mode
Channels Synchronization : G-code

- Control over G-code output (single file/multiple files etc.)
- Definition of G-code output options per channel
• Machine simulation of synchronized machining process (all other simulations execute operations in CAM-tree order)
Turning: Changes in compensation

Optimized (less movements) entrance to compensation in turning operation
Change in interface defining the orientation of poliarc (radiobuttons replaced by checkbox)
Geometry: Enhanced geometry extension options

More flexible extension of the geometry by 2 segments on both sides of the polyarc
Turning: non-kinematic tool orientation definition inside the operation

- Tool orientation inside the operation is changed to a classic turning representation (not according to the actual tool position in the machine).
- Actual tool orientation is visualised in Machine Preview dialog available from within the Operation.
- X output (+ or -) and Spin direction are now connected.
Turning: Reference diameter

- For V (m/min) spin definition – reference diameter added.
- Spin for smaller/larger diameter is calculated accordingly
Turning: Stay in Gear limits

- 2 option to define spin limits:
- Take values from the selected Gear automatically
- Enter the values manually
In new version the needless piece of stock remained after the CutOff operation is automatically deleted
What’s New in SolidCAM 2016

2.5D Milling
2.5D Milling: Compensation for Rough, Finish and Clear Offset separately

Possibility to turn on compensation separately for Rough, Finish and Clear Offset passes.
Possibility to define various depth for each profile chain
2.5D Milling: Variable Levels in Pocket

Possibility to define various upper level and depth for each pocket chain
2.5D Milling: Combine Wall and Floor finish passes

Combine wall and floor offset passes to one pass
Pocket Recognition: Limit the machining depth

Limit the depth of cutting in Pocket Recognition operation
2.5D Milling: Lead in/out radius in % of tool diameter

Possibility to define lead in and lead out radiuses not only in mm/inch, but in % of tool diameter too.
Geometry: Show chain on work plane

- Shows the chain projected to the XY plane (the way it will be used in the operation)
Automatic propagation of a chain:

- Along the CAM-part edges in Z plane (within the defined tolerance)
- Along edges tangential to the previously selected one
Geometry: New Buttons for faster chain selection

When there are several edges suitable for selection – user needs to choose which one should be taken.

- button for direction selection
- button to continue automatic selection process
Holding the Control button and picking the next curve will start to create your next chain.
Geometry: Control over chain selection defaults

Possibility to define in settings which options are active by default
Geometry: Preview of holes numbers in drill geometry

Better visualisation of define holes and easier matching with the list of drill points.
Geometry: Chamfer recognition filters

• Chains with length smaller than defined will be ignored
• Edges followed by fillet optionally could be ignored
Transform: Selection of custom transformation direction (CoordSys)

Use axes of another CoordSys for transformation directions definition
Transform: Selection of custom transformation direction (Vector)

Use custom axes for definition of transformation directions
- Mirror according to selected plane or one of standard planes of selected CoordSys
- Additional operation is created
- Keep cutting direction (climb/conventional)
- Preview of mirroring direction and new operation’s geometry
- Additional CoordSys is created if required
Transform: Equal spacing in Rotate transformation

- Option to define angles for translation by angle range and amount of step
• Pick the point where the start of first chain of the transformed operation’s geometry should be → it is taken as a step in Matrix transformation
What’s New in SolidCAM 2016

Hole Wizard
Hole Wizard: Separated folder

- Separated folder for Hole Wizard Machining Process files
Hole Wizard: Customization

- New Actions (reorder, copy, cut, paste) added to the table of Machining Processes
- Type of holes filters the list of available Hole Wizard parameters, making the definition of formulas easier
Hole Wizard: Enhanced User Interface

- Combobox of Databases contains only DBs compatible with current machine ( = have the same Drilling cycles )
- Description is added in order to make selection of the Machining Process easier
What’s New in SolidCAM 2016

CAM-tree
Show machining time in CAM-tree
CAM-tree: Show information about compensation usage

Show indicator whether compensation is used in the operation or not
CAM-tree: Change Submachine from the CAM-tree

Right click on the submachine item in the CAM-tree allows to change submachine in all operation between selected submachine and the next one in the CAM-tree.
CAM-tree: Show updated stock

- Option to see rest material left after the last operation during new operations definition.
- Preview in CAD area
- Color and transparency are taken from HostCAD simulation settings
Possibility to rename CoordSys (MAC/Position) directly from the CAM-tree
CAM-tree: Open Current CAM-part folder

Reach the folder containing the current CAM-part by single click
What’s New in SolidCAM 2016

General
Integration: More SolidWorks-integrated dialogs

Dialogs integrated in SolidWorks Feature manager:
- New CAM-part
- CoordSys Definition
Synchronization: Check Synchronization at CAM-part opening

Check synchronization with original CAD-model every time user opens the CAM-part
Milling operations: Calculate with related operations

Option to calculate current operation and all following dependant ones
Operations: “Save&Exit” button

Button to save operation and exit without calculation
3 new buttons in tooltable:

- Save
- Save and Exit
- Exit

*-Now there is an option to save the tooltable without closing the dialog.
Tooltable: dY tool tip position shifting

In addition to dX and dZ values, now there is a possibility to define dY coordinate of tool tip in Station’s CoordSys as well.
Tooltable: “Rough” option to tooltable

Additional information in tooltable about tool for Rough machining only
Information about the tools quantity in turret title row in the following format:

#turretID TurretName (number_of_stations/mounted_tools/used_tools)