

SolidCAM 2022 New Features

Nov 2022



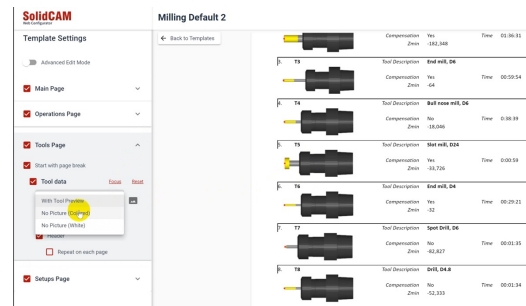
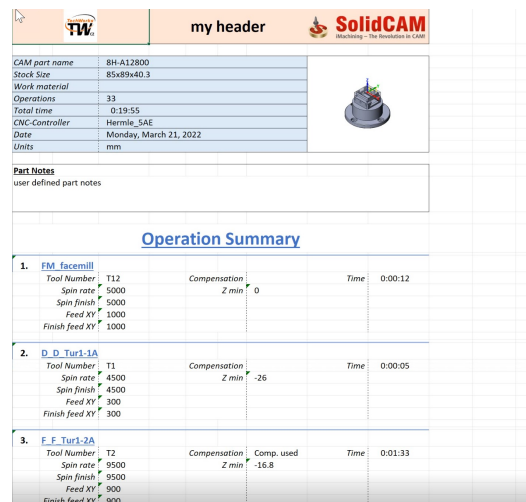
SolidCAM
The Solid Platform for Manufacturing



SolidCAM
THE FUTURE OF CAM

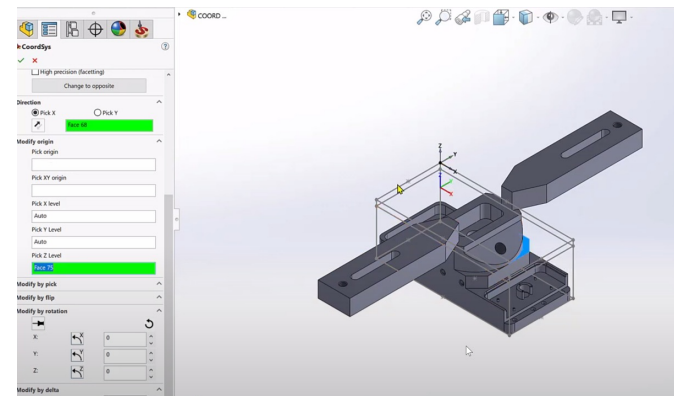
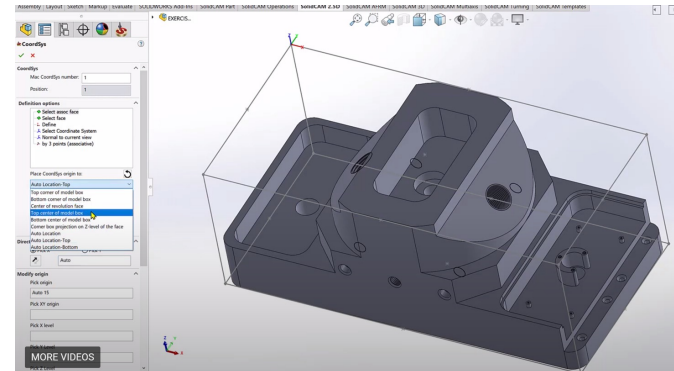
The user can easily do **template customizations**, then download a customized template ready for use

- Go to the configurator website – select a template
- Configure the template on the cloud
- Download to user Desktop
- Install template in SolidCAM
- Generate Setup Sheet with the new template



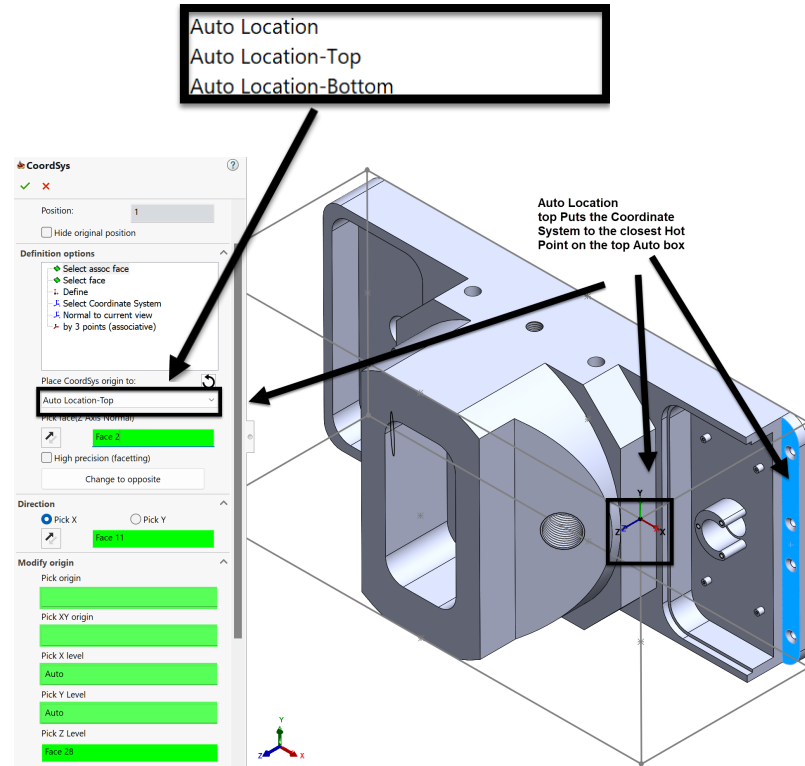
SolidCAM 2022 – Associative Coordinate System

- In **SolidCAM2021**, the Coordinate System is **not associative** - if you had a change in the part and the **location** of the coordinate system moved, you would have to redefine the Coordinate System.
- If you want to make an **edit to the location** of the Coordinate System, you will have to restart from the beginning.
- With the **Associative Coordinate System** in **SolidCAM 2022**, everything is associative, including the **levels page** - you can also **edit the location**, without having to recreate the Coordinate system from scratch.



SolidCAM 2022 – Associative Coordinate System (Auto Location with Associative Fields)

- When choosing a face to be used for the perpendicular Z direction, it will be automatically placed at the closest hot point on the automatic box:
- **Auto Location** – The closest point on the Auto box
- **Auto Location - Top** - The closest point on the top of the Auto box
- **Auto Location – Bottom** - The closest point on the bottom of the Auto box
- Picking a cylindrical surface with the Auto Locations will place the origin at the center axis of that cylinder



SolidCAM 2022 - Associative Coordinate System (Levels Page)

- With the **Associative Coordinate System Levels Page** in **SolidCAM 2022**, everything is **associative** and has **Delta** fields.
- You can for example pick the top of a clamp for the **Clearance level** and that value will appear in the field as associative - add a **Delta value** for the distance you want it above the clamp.
- If the clamp changes, the ClearanceLevel will always be the delta value above the clamp.

CoordSys Data

CoordSys

MAC Number: 1

Position: 1

☐ Create planar surface at Part Lower level

Edit CoordSys

Levels: Planar

Tool start level: 15

Tool start level delta: 120

Clearance level: 15

Clearance level delta: 10

Part Upper level: 0

Upper level delta: 0

Part Lower level: 75

Lower level delta: -6

Tool Z level: 15

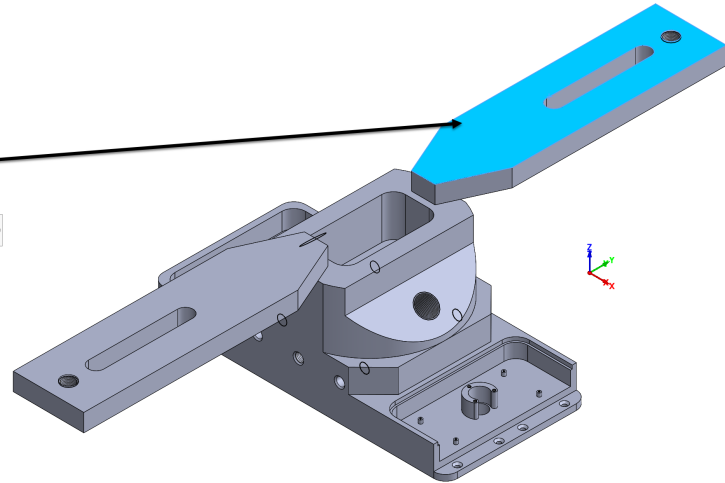
Tool Z level delta: 150

Levels: Radial

Levels: Rear

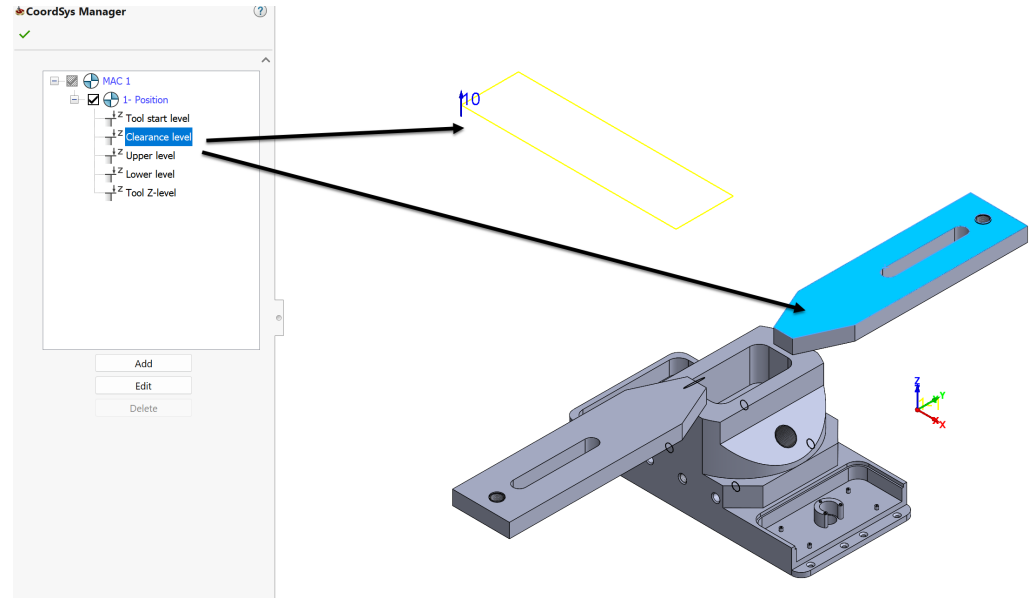
Translation Data

Plane



SolidCAM 2022 – Associative Coordinate System (CoordSys Manager)

- With the **CoordSys Manager** **Page** in **SolidCAM 2022**, everything that is associative is also visible, including the Delta levels.
- You can for example pick the **Clearance level**, and that will be *highlighted on the appropriate face*, as well as the Delta value.



SolidCAM 2022 – Associative Coordinate System (Edit Coordinate System)

- You can now **Edit the Coordinate System**, without having to rebuild the Coordinate system from scratch.
- All the fields are open.

CoordSys Data

✓ ✕

Coordsys

MAC Number: 1

Position: 1

☐ Create planar surface at Part Lower level

Edit CoordSys

Levels: Planar

Tool start level: 15

Tool start level delta: 120

Clearance level: 15

Clearance level delta: 10

Part Upper level: 0

Upper level delta: 0

Part Lower level: -95

Lower level delta: -6

Tool Z-level: 15

Tool Z-level delta: 150

Levels: Radial

Levels: Rear

Translation Data

Plane

CoordSys

✓ ✕

CoordSys

Mac CoordSys number: 1

Position: 1

☐ Hide original position

Definition options

- ◆ Select assoc face
- ◆ Select face
- ⚙ Define
- ⚙ Select Coordinate System
- ⚙ Normal to current view
- ⚙ by 3 points (associative)

Place CoordSys origin to:

Auto Location-top

Pick face(Z Axis Normal)

Face 2

☐ High precision (facetting)

Change to opposite

Direction

☒ Pick X ☐ Pick Y

Face 11

Modify origin

Pick origin

Pick XY origin

Pick X level

Auto

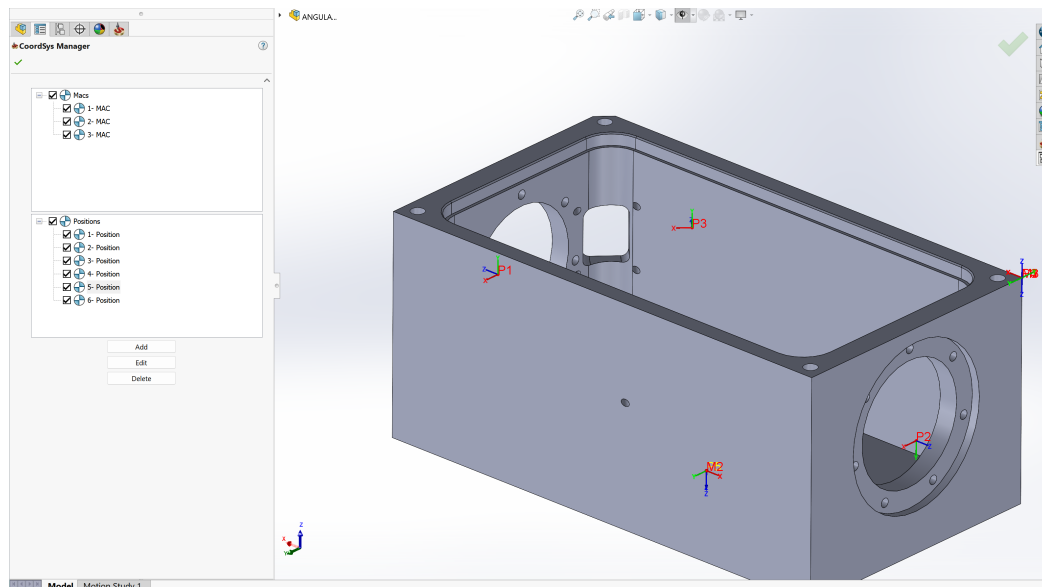
Pick Y Level

Auto

Pick Z Level

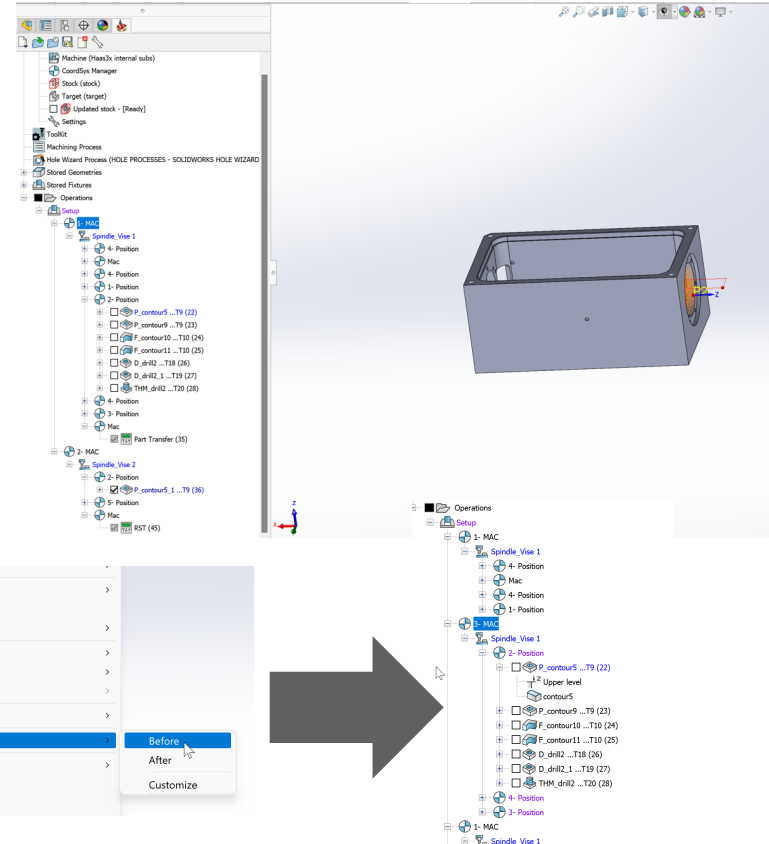
SolidCAM 2022– Position sharing between Coordinate systems

- With the new style of Position definition in the Coordinate System Manager, you can now **share a position among several different MACs**.
- You can easily change the MAC of the operation, without the need to redefine the Geometry.



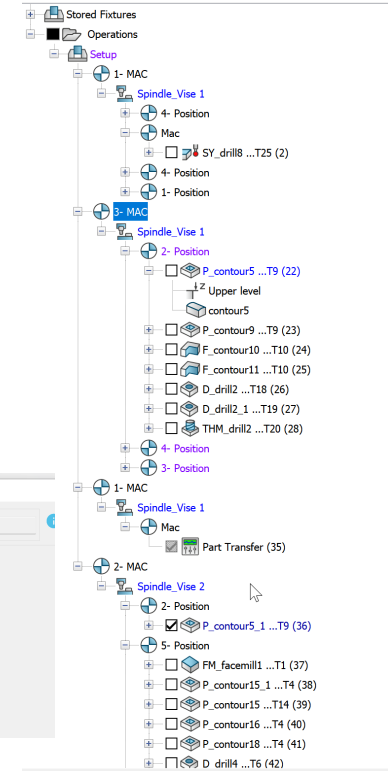
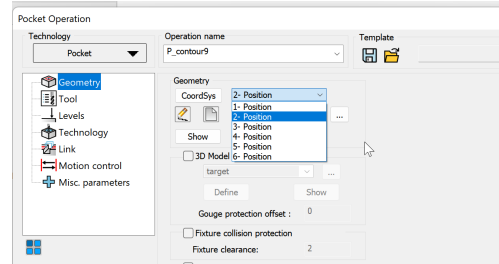
Changing the MAC for the operation

- Simply Copy and Paste the operation to the different MAC – you will get the same operation and position, but in another MAC
- Or add new MAC before the operation and select required MAC from the list



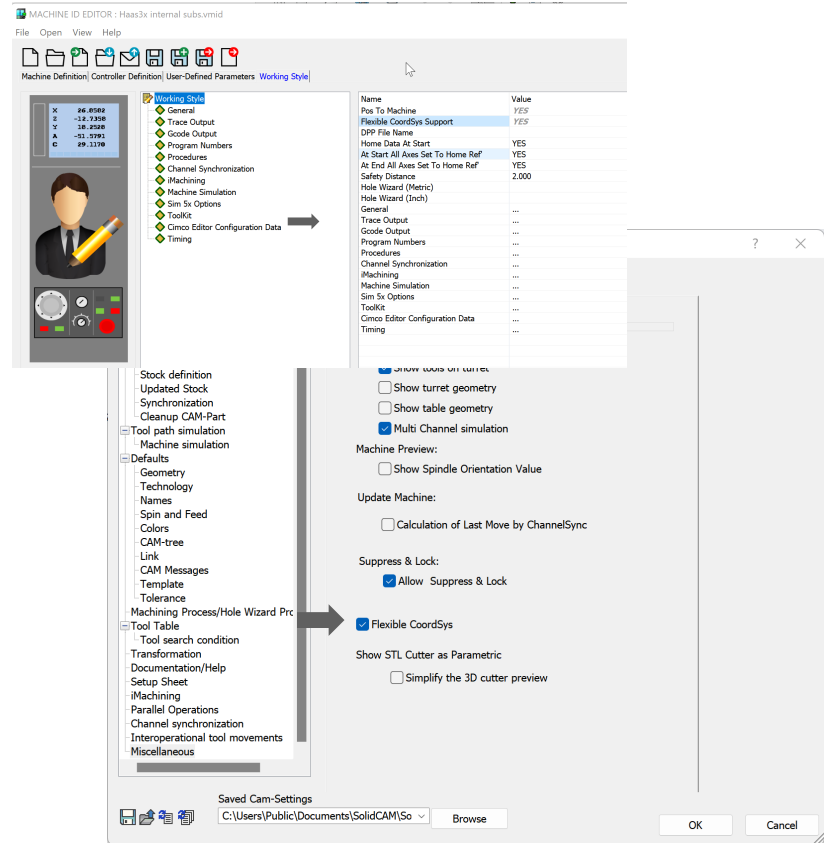
The CAM tree Structure is more flexible

- With the new CAM Tree structure, the user can see the MAC–Position relation, drag operations between MACs, add MACs and more powerful features.
- In the operation's Coordinate System definition dialog, only position can be defined - it provides more flexible definition of the Coordinate System.

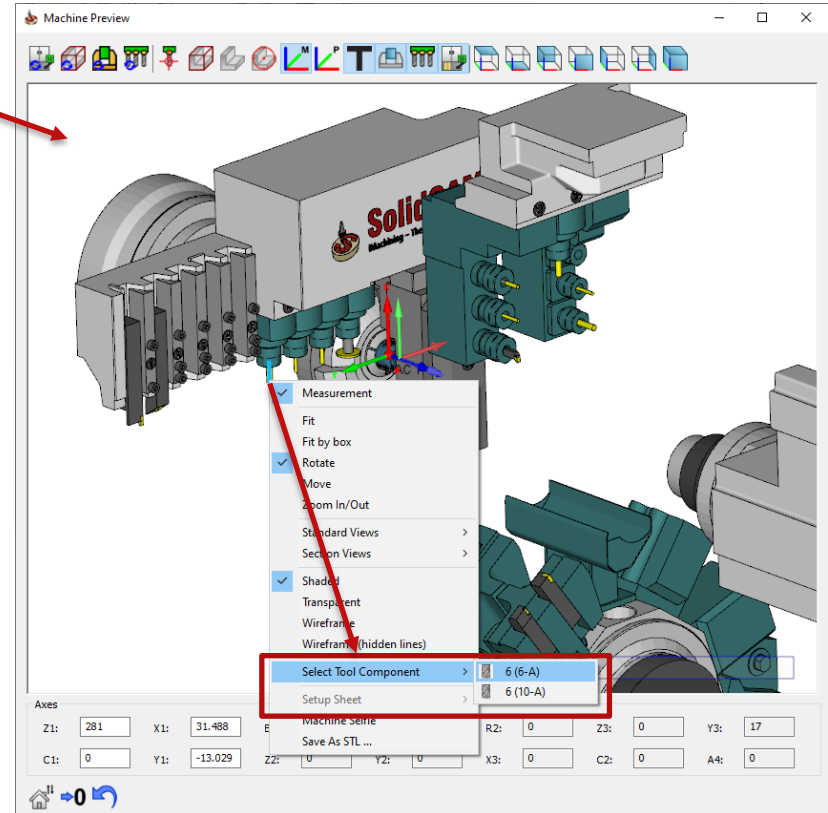
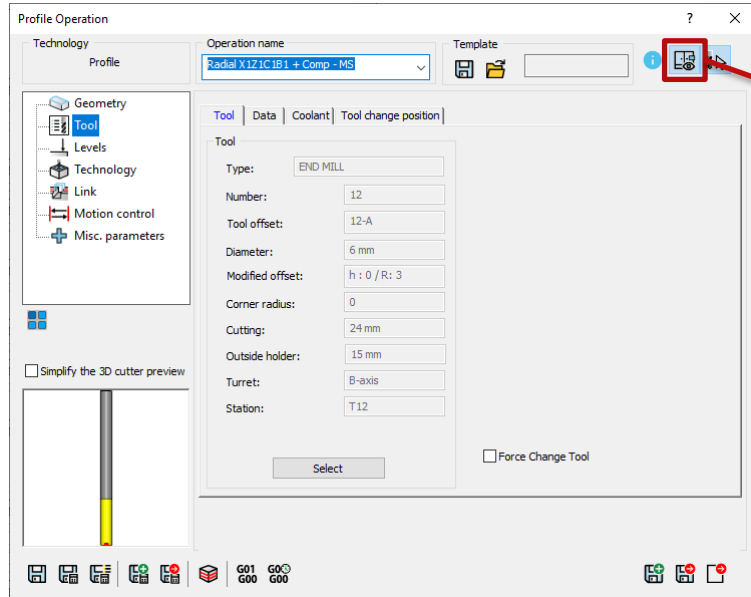


How to use the Shared Position feature

- There is no need for special support of the Shared Position Feature in the Post processor
- The Feature can be activated in the CAM Settings
- After that, you can enable the Feature in the VMID
- The CAM Part that was opened in the Shared Position mode, can't be back converted - make sure you are creating backup for your part.



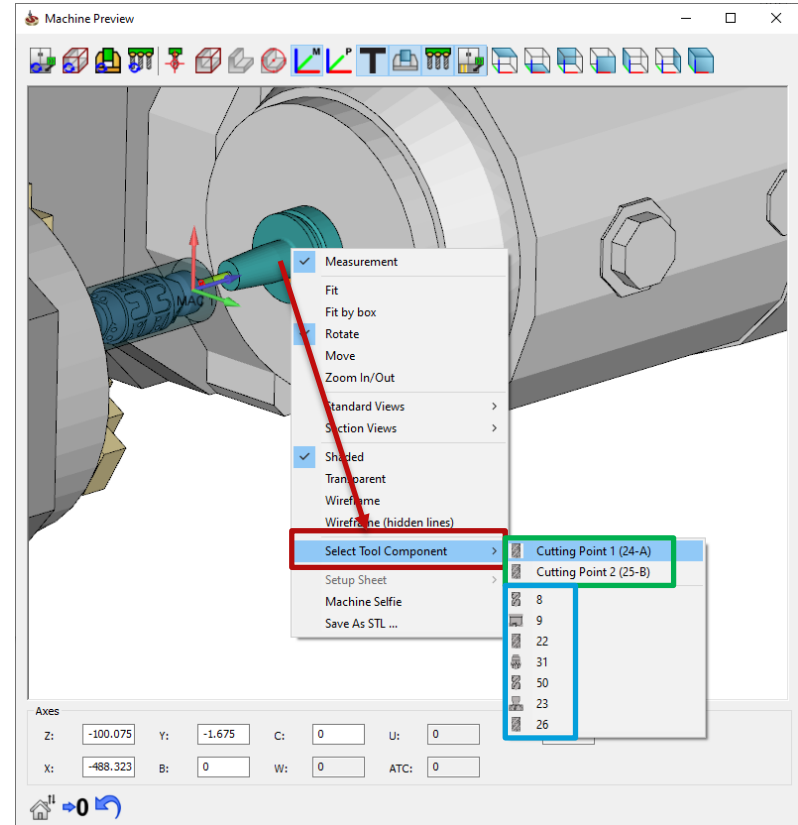
SolidCAM 2022– Select Tool from Machine Preview



- In **SolidCAM2022**, it is possible to select the tool from the **Machine Preview**
- **Speed up** the process of tool selection

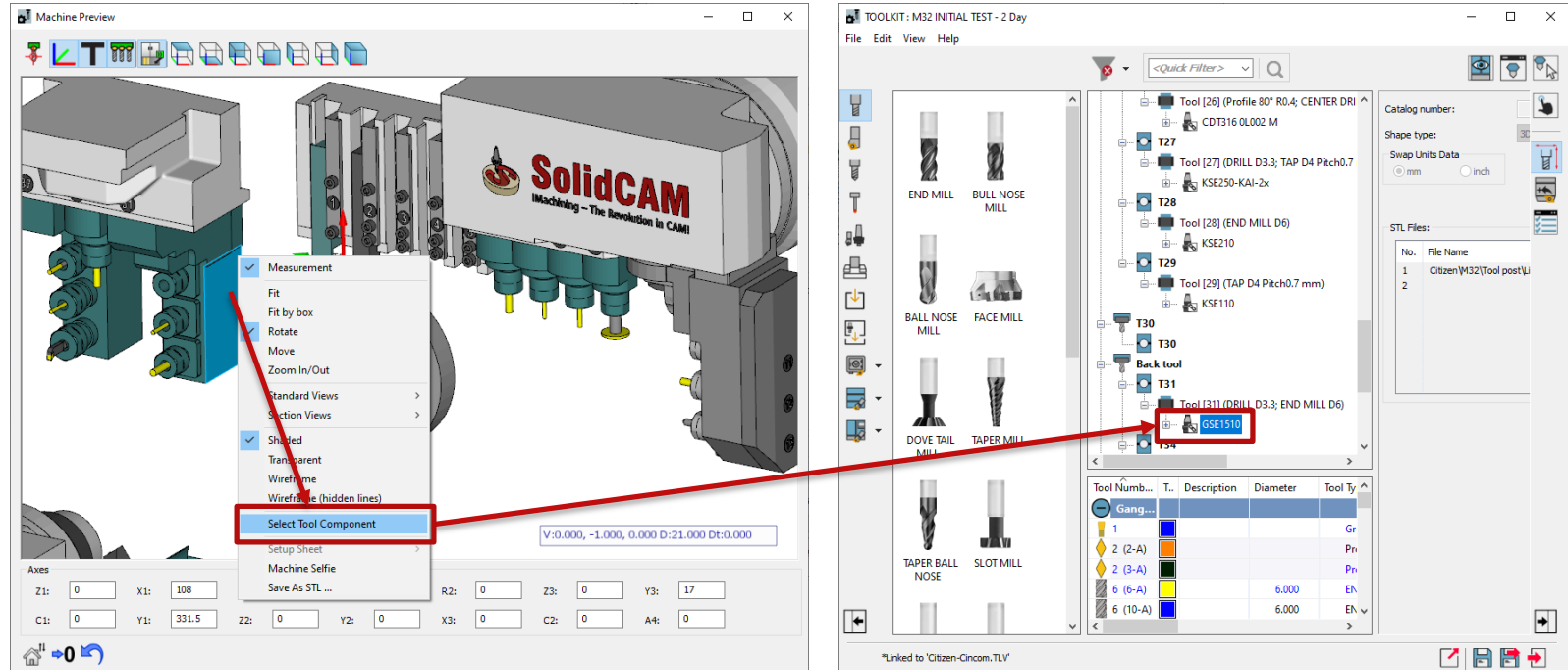
SolidCAM 2022 – Select Tool from Machine Preview

- For **Spindle type turret**, this feature displays **all available tool cutting points**, allowing fast switch between them
- It also filters **10 recent tools**, that can be used in the current job



SolidCAM 2022 – ToolKit

Navigate Tool Component from the Machine Preview

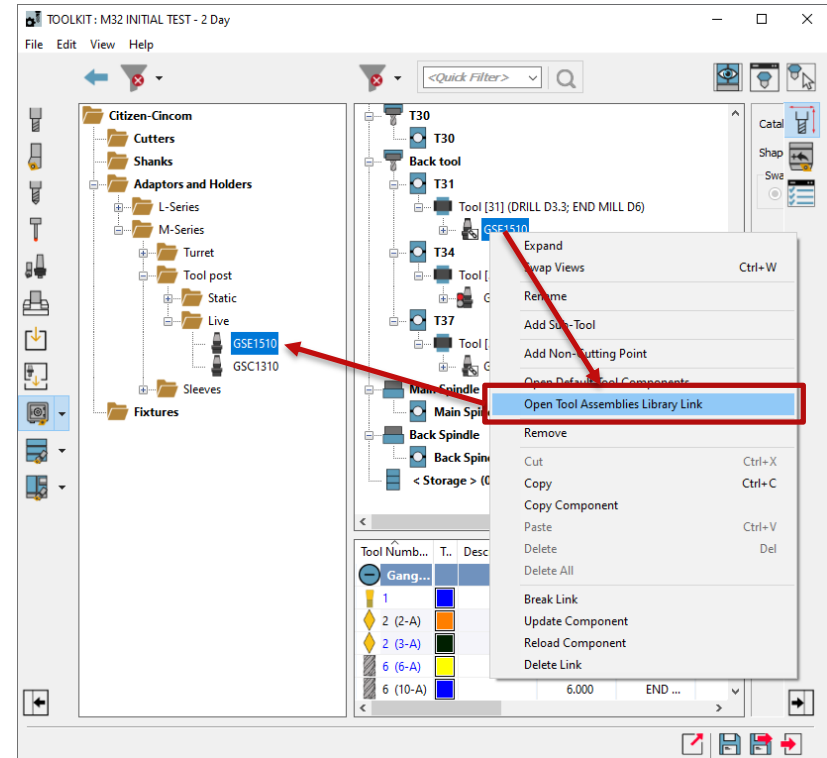


- Select and navigate the tool component, in **ToolKit's Machine Preview**

SolidCAM 2022 – ToolKit

Navigate the linked Tool Component in the library

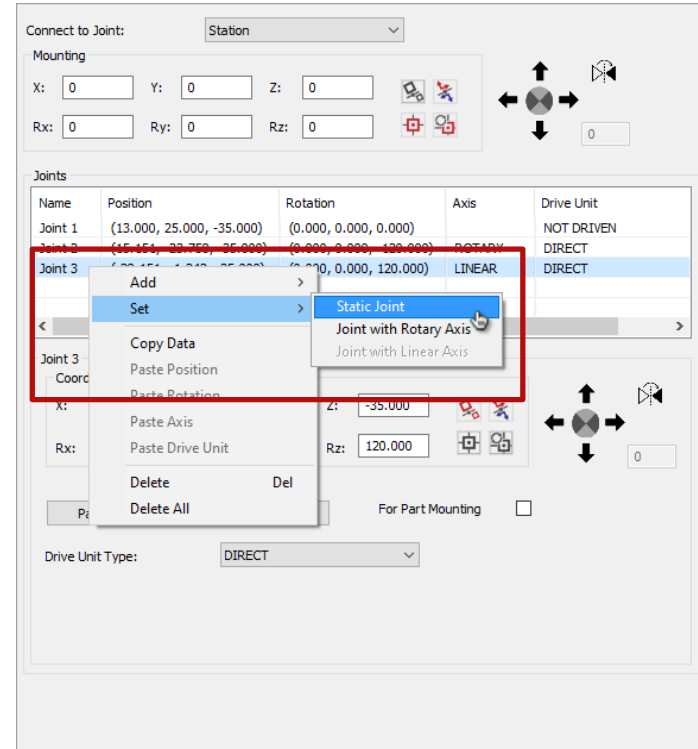
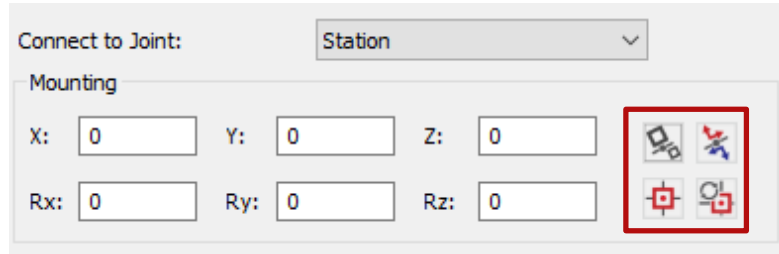
- If **linked**, the tool component or assembly can be navigated in the library
- **Speed up** the process of adding or replacing other tool components from the same library



SolidCAM 2022 – ToolKit

New possibilities in the Connection page

- Added possibility to **add** specific joint type
- Added possibility to **change** the joint type
- Implemented new icons for **Mounting Tools**



SolidCAM 2022 – ToolKit

Flexible data input for shank

- Changing the insert shape doesn't change the shank size anymore (Thickness, Width, Length, M and N parameters)

Catalog number:

Shape type:

Swap Units Data: ☒ mm ☐ Inch

Shape:

Shank Type:

Insert Clamping:

Insert Shape:

Insert Lead Angle:

IC Diameter:

Insert Thickness:

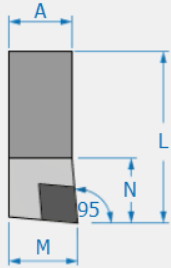
Cutting Direction:

Shank Thickness:

Shank Width (A):

Tool Length (L):

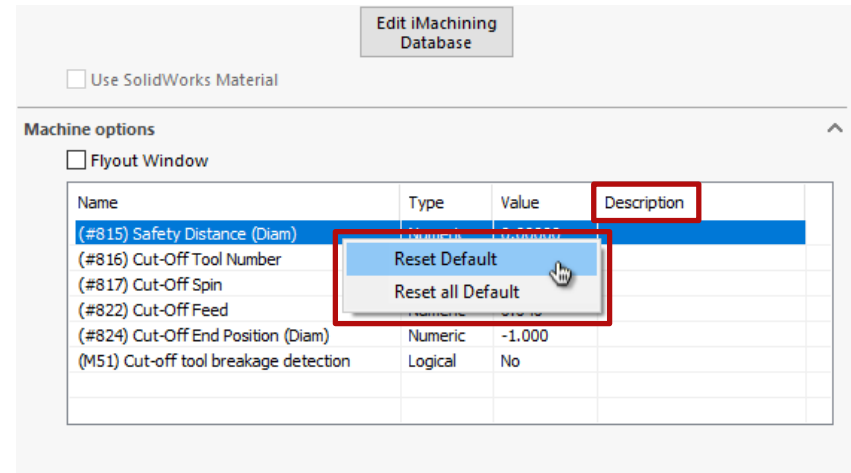
Name	Value
M	16
N	16



SolidCAM 2022 – CAM Part

Added capability to reset Machine Options parameters

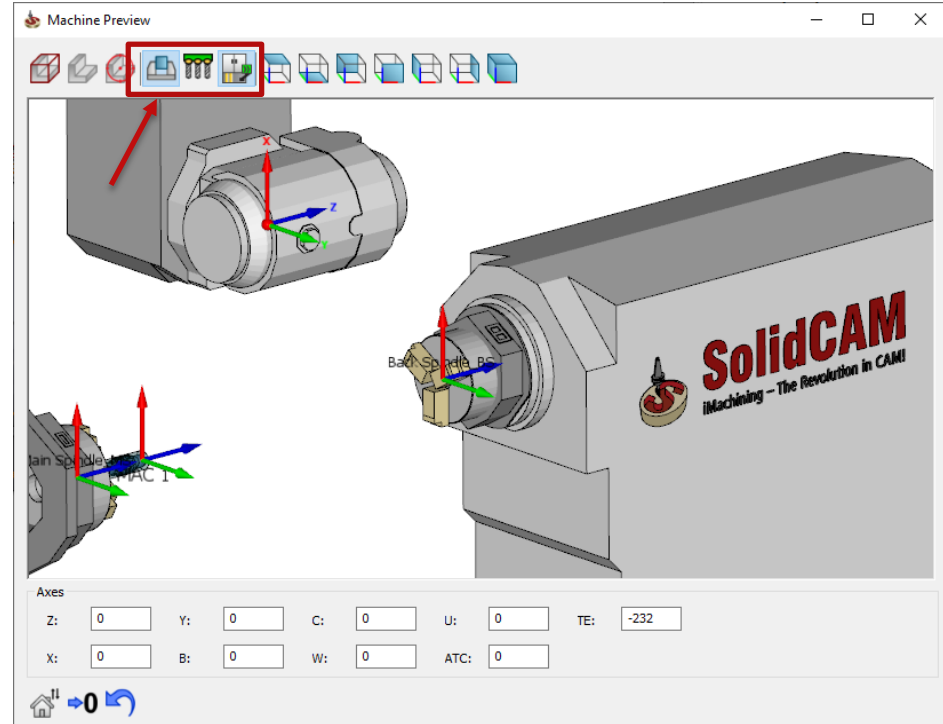
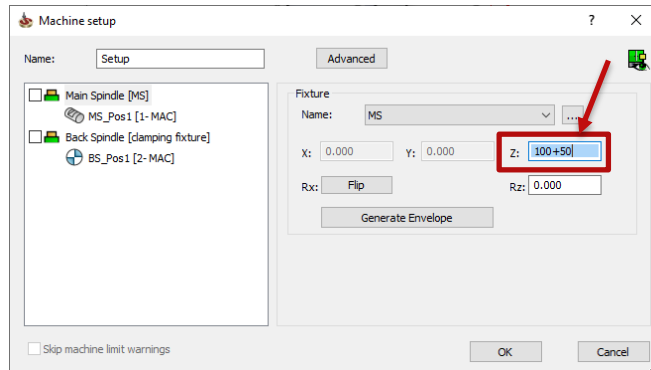
- Added possibility to reset one, many or all parameters to their **Default** value
- Selection of the multiple parameters can be done with **CTRL+** or **SHIFT+Click**
- The **Description** has been added to Machine Options



SolidCAM 2022 – Machine Setup

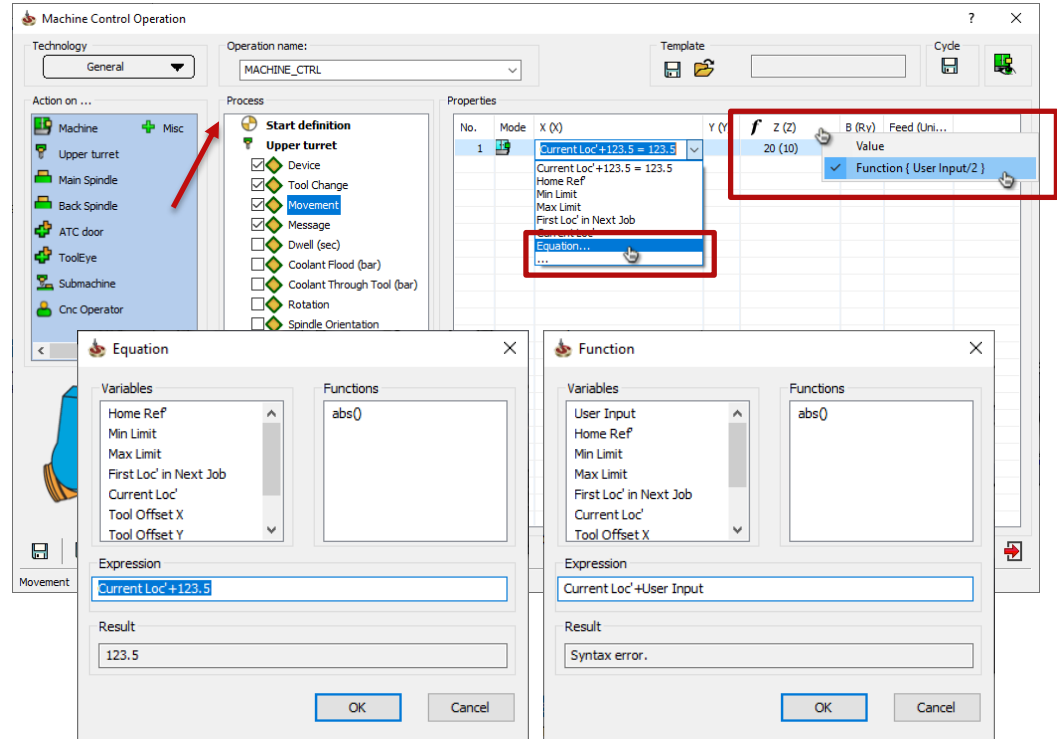
Supports equations and added display filters to Machine Preview

- Supports **Equations** in the matrix shifts values
- Added **display filters** for Fixtures, Tools and Machine Housing into **Machine Preview**



SolidCAM 2022 – Machine Control Operation Supports Functions and Equations

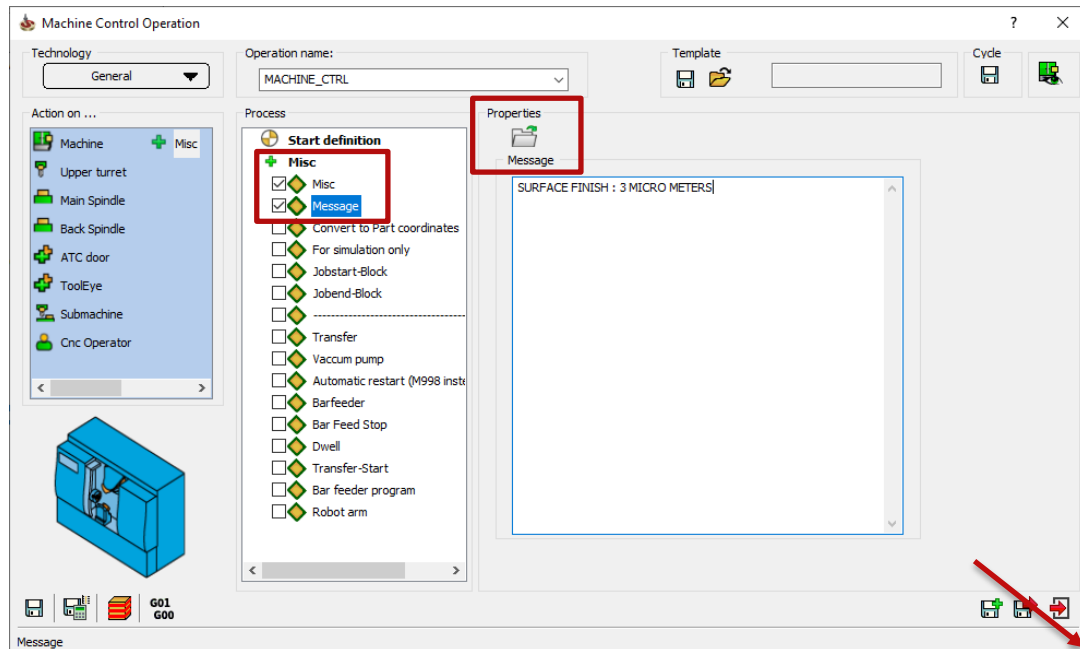
- Added possibility to define **Equation** for movements
- Movement input can be defined as **Function** supporting diameter input, relative input, etc.



SolidCAM 2022 – Machine Control Operation

Import custom message

- Added possibility to **import custom messages**
- MCO window is now **resizable**

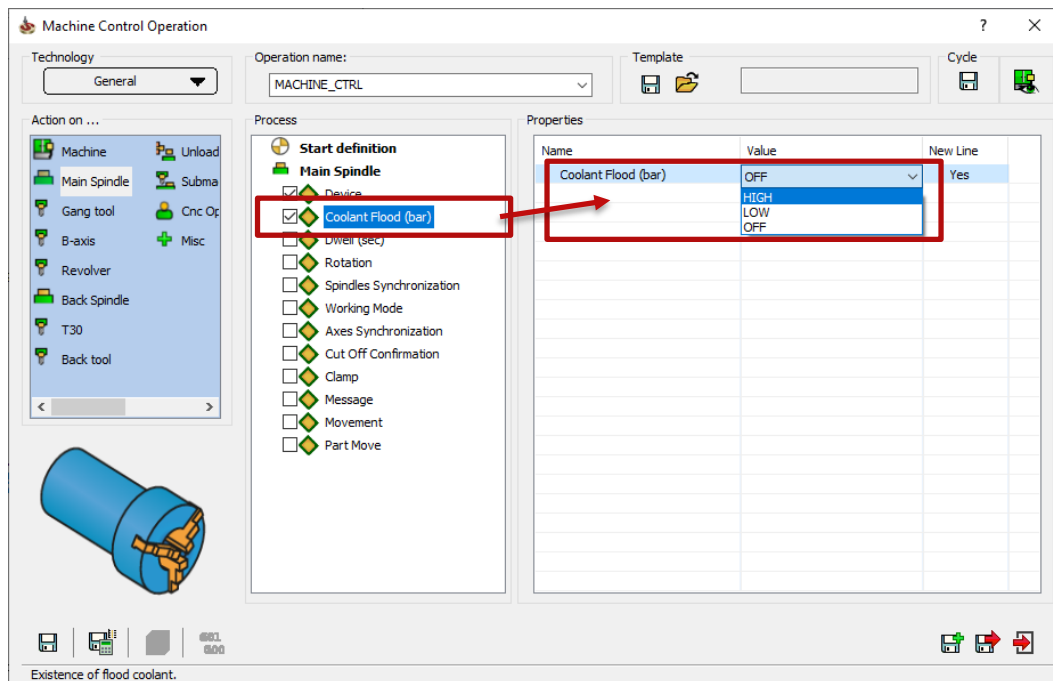


SolidCAM 2022 – Machine Control Operation

Control Flood Coolant on Table

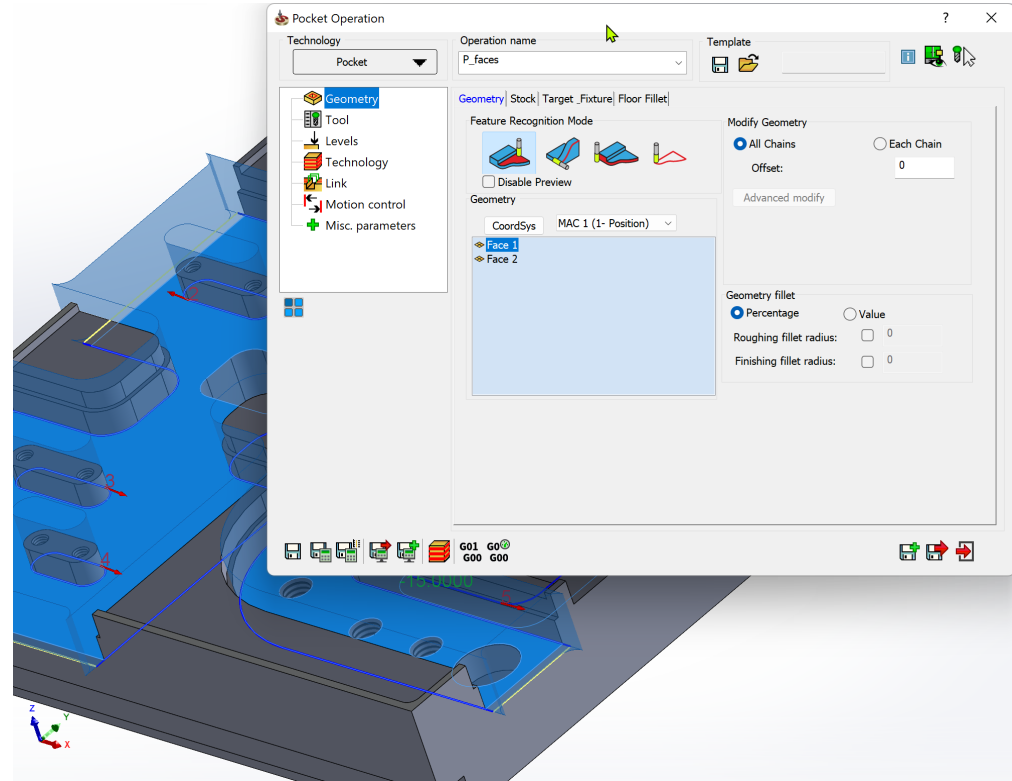
- Added possibility to control **Coolant Flood** on **Table** device (if supported by machine)

Activate Air	NONE
Coolant Flood	NONE
Coolant Flood Through Table	NONE
Activate Air Through Spindle	ON / OFF
Rotation	HIGH / LOW / OFF
Spindles Synchronization	VALUE / OFF



SolidCAM 2022 – Mill 2.5D/New Pocket Geometries

- The Pocket operation has now all the advantages and options as we have in iMachining 2D.
- This includes:
 - Feature recognition by Faces
 - Feature Recognition by Chains
 - Outside Feature Recognition
 - Chains without Feature Recognition



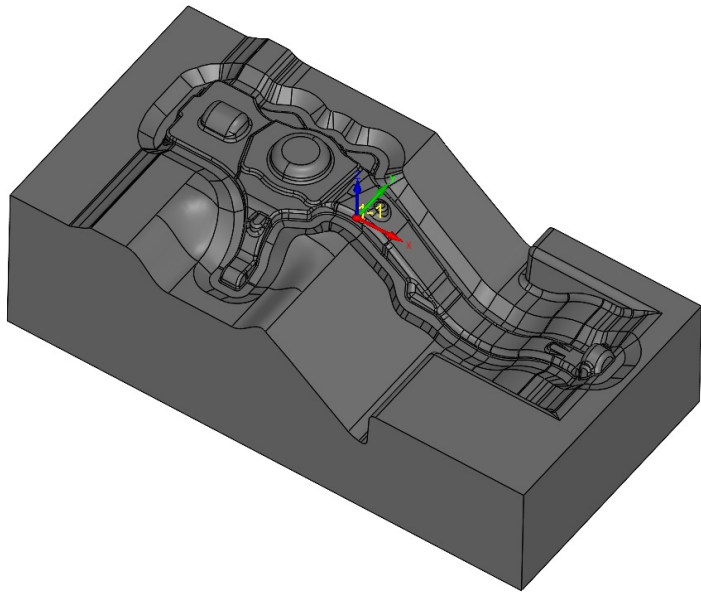
SolidCAM 2022 – THSR/Faster calculation time

SolidCAM 2021

Roughing – 20 Seconds

Rest Roughing – 66 Seconds

Rest Roughing – 40 Seconds



SolidCAM 2022

Roughing – 10 Seconds

Rest Roughing – 16 Seconds

Rest Roughing – 15 Seconds

- Much Faster Turbo HSR **Calculation times!**

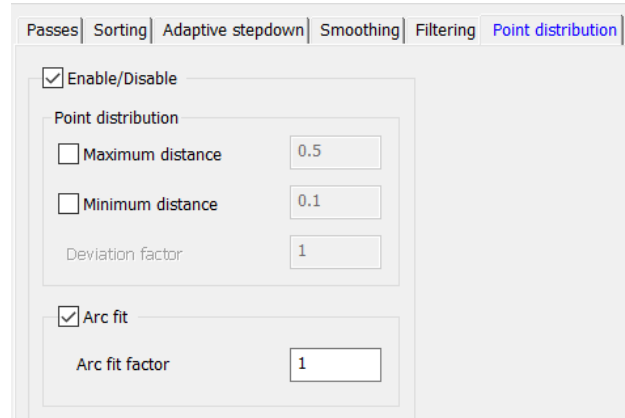
SolidCAM 2022 – THSR/THSM Arc Fit

Without ARCFIT

Roughing – 785970 Lines

Rest Roughing - 332635 Lines

Finishing – 2507440 Lines



With ARCFIT

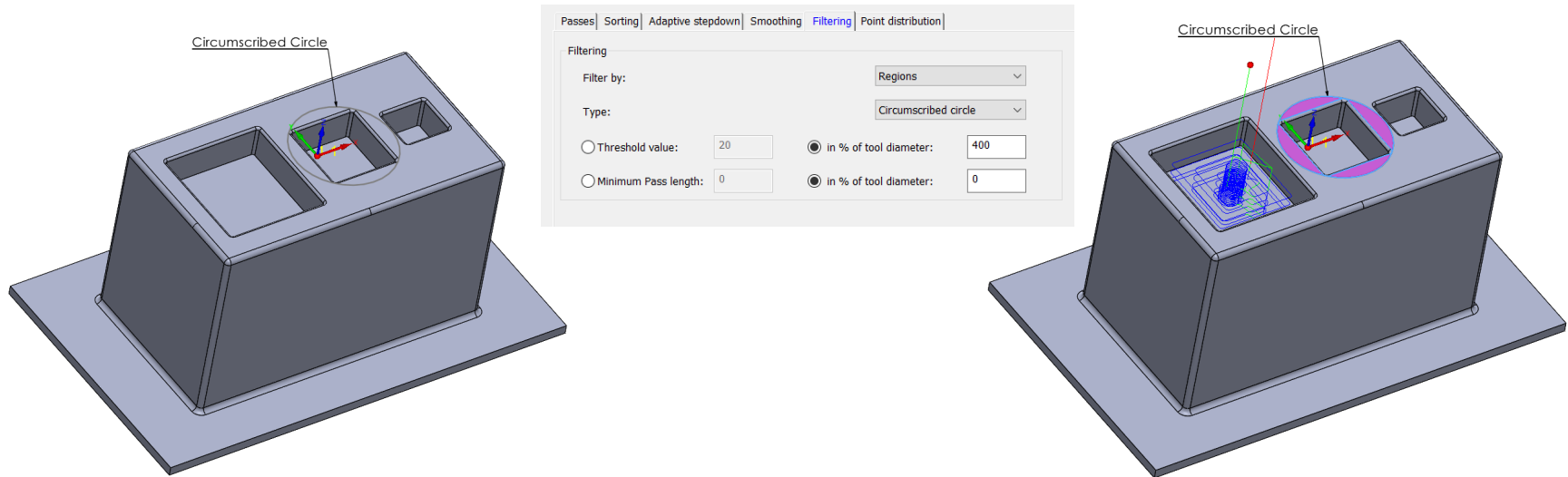
Roughing – 464135 Lines

Rest Roughing - 121670 Lines

Finishing – 1441510 Lines

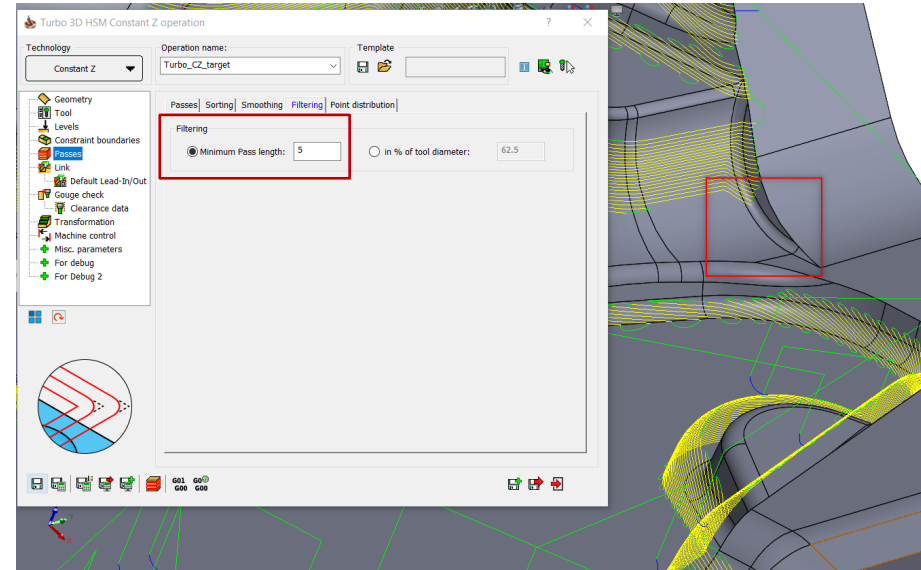
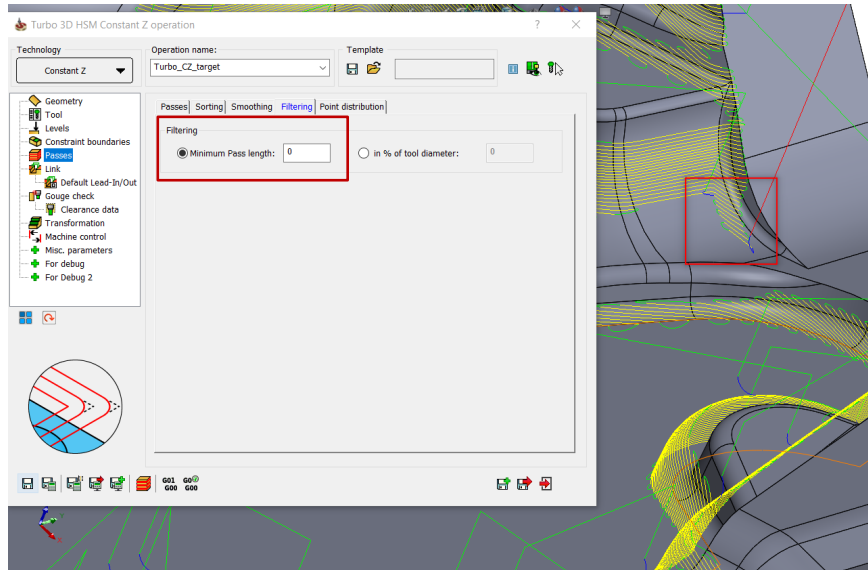
- Turbo Roughing & Finishing now have the option to **Fit Arcs**.
- This feature **reduces the program size** by over 50%, **reduces machining time & improves surface quality**.

SolidCAM 2022 – THSR/Add Circumscribed Circle



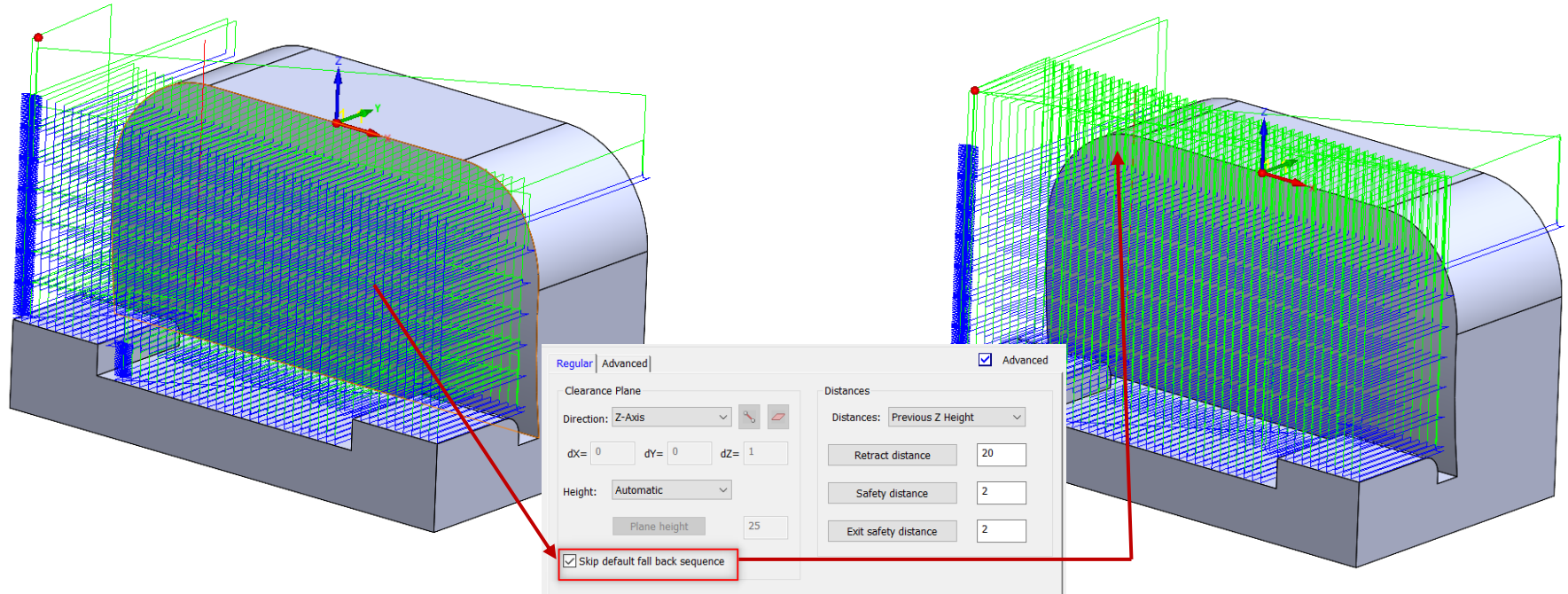
- Toolpaths are checked with a circumscribed circle, to detect and filter the slices that are smaller than the threshold value - this is very useful when working with Tools without Center cutting.

SolidCAM 2022 – THSR/THSM Filtering Moves



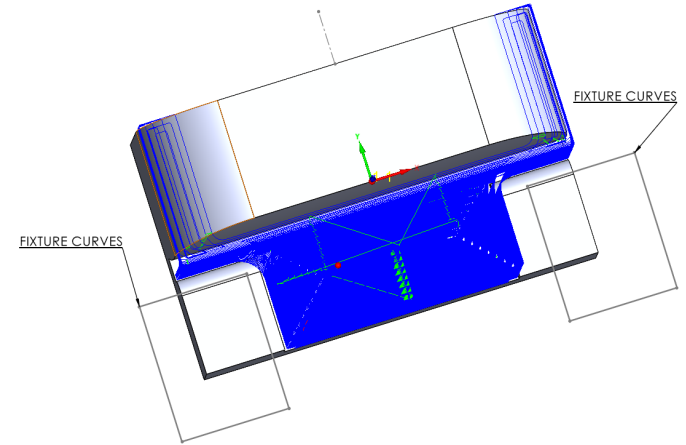
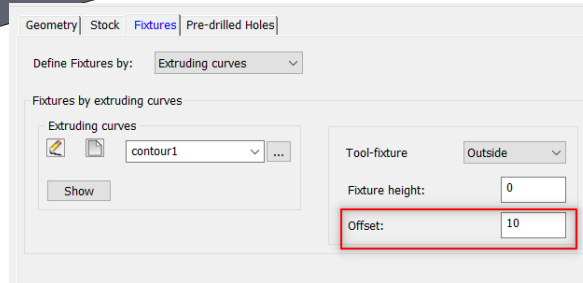
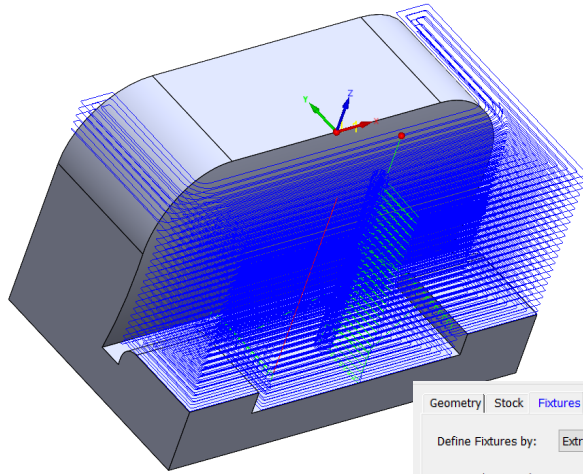
- This option filters out toolpath segments, below the defined threshold value. This helps to eliminate small irrelevant moves in the toolpath & helps reduce machining time.

SolidCAM 2022 – THSR/Skip Fallback Sequence



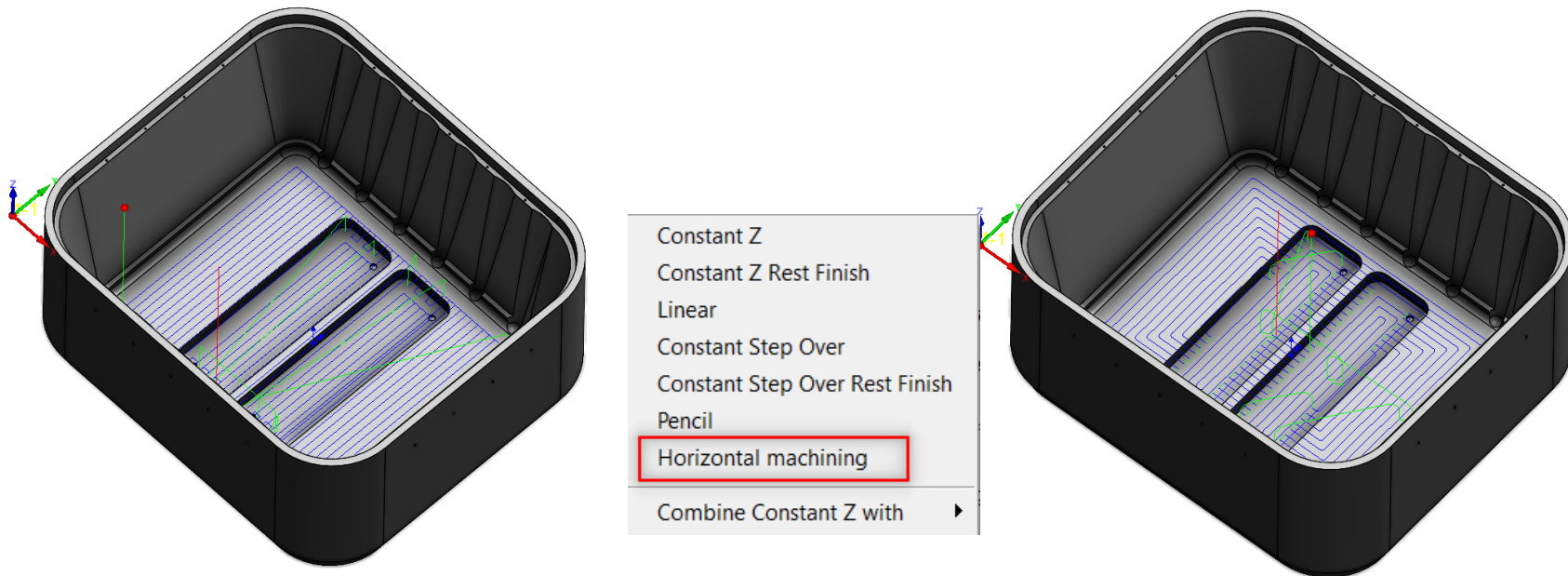
- This option enables the retract moves to the clearance area plane height, avoiding intermediate retractions to the feed, rapid distances, in case if the requested direct or blend spline area links within group, cannot be created.

SolidCAM 2022 – THSR/Fixture Offset



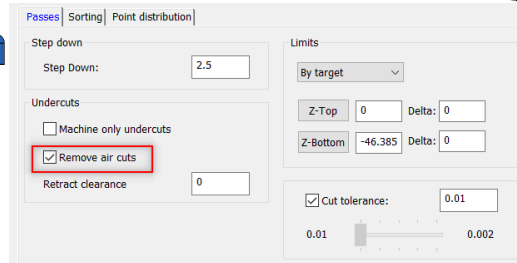
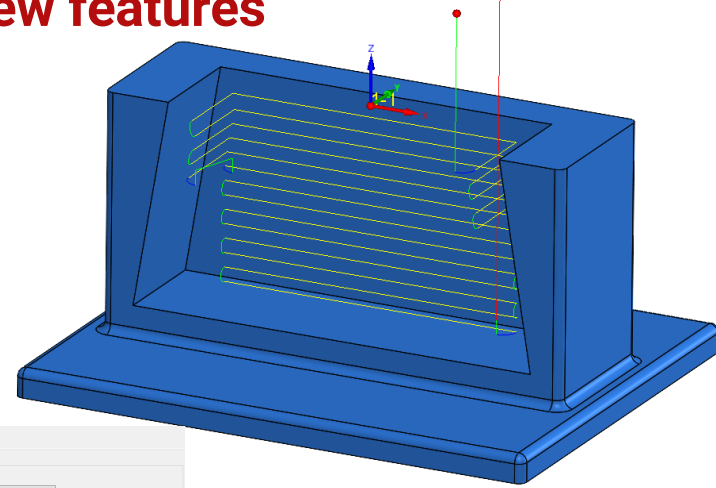
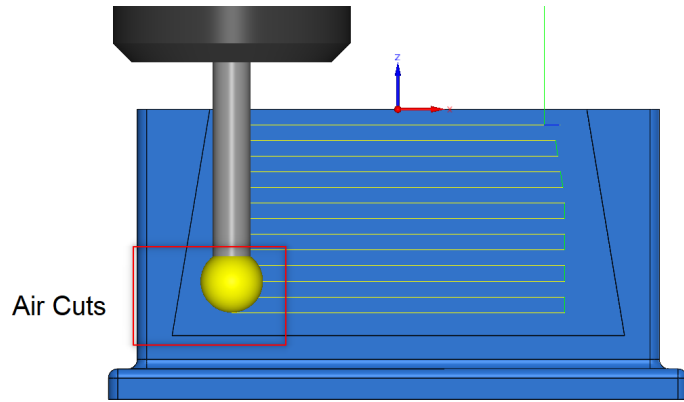
- Fixture offset can now be applied to the Fixture Curves.
- Fixture curves eliminate the need to define a 3D model of the Fixture (Clamps etc.).

SolidCAM 2022 – THSM/Horizontal Machining



- New option to create Horizontal Machining inside Turbo HSM
- Hatch & Contour Patterns are available.

SolidCAM 2022 – Undercut Milling new features

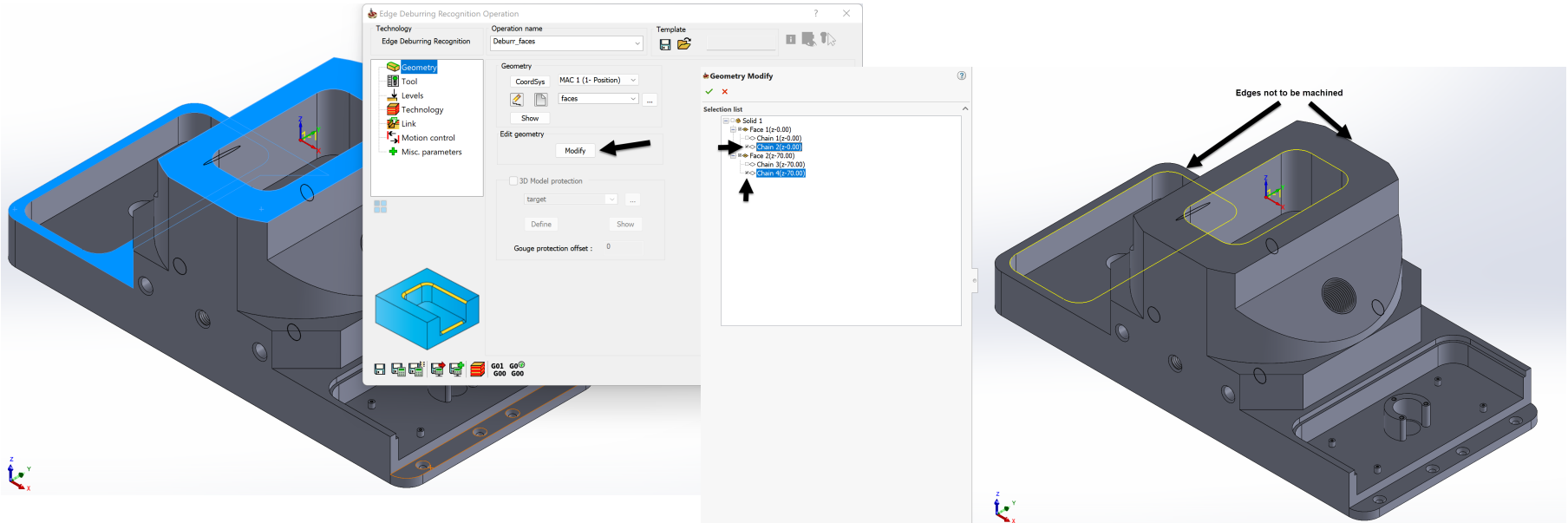


- Removing aircuts in Undercut milling, eliminates the Air Passes that are otherwise created to avoid Collision on the Arbor or Holder - this saves a lot of Machining time.

SolidCAM 2022 – Edge Deburring Recognition

Filter out unwanted chains

- We can now modify a geometry to **exclude chains** that you do not want to machine, by simply unchecking the check box of the chains.



SolidCAM 2022 – Sim5X Edge Breaking/Tool types Support



END MILL



BALL NOSE
MILL



TAPER MILL



TAPER BALL
NOSE



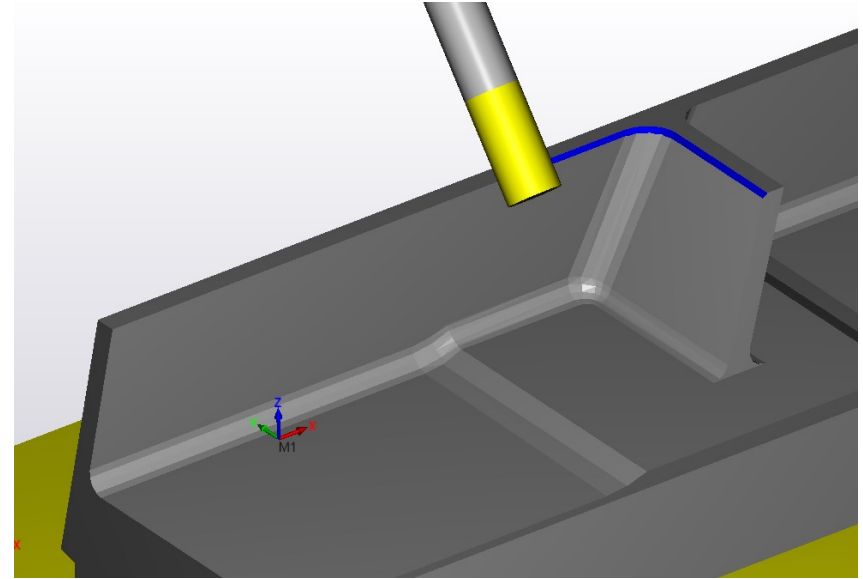
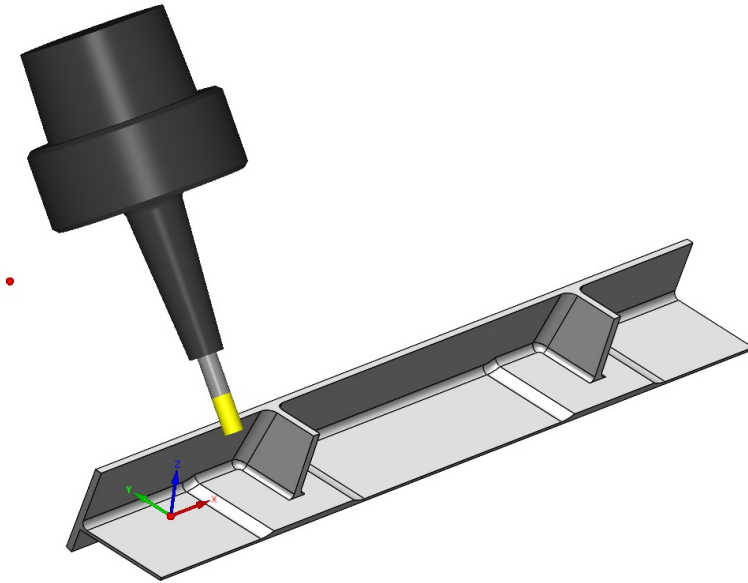
LOLLIPOP MILL



CHAMFER
MILL

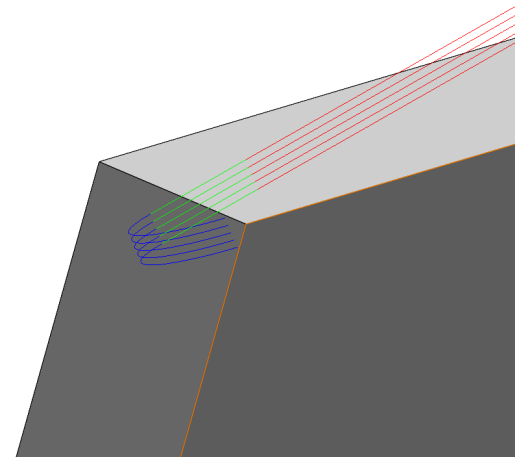
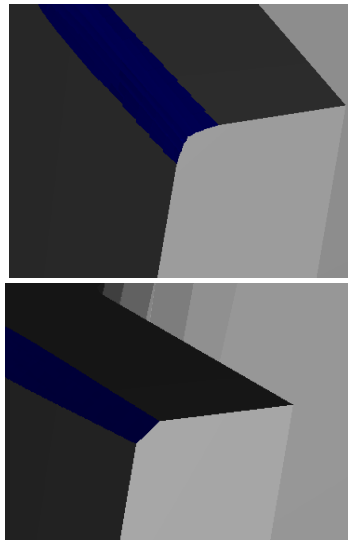
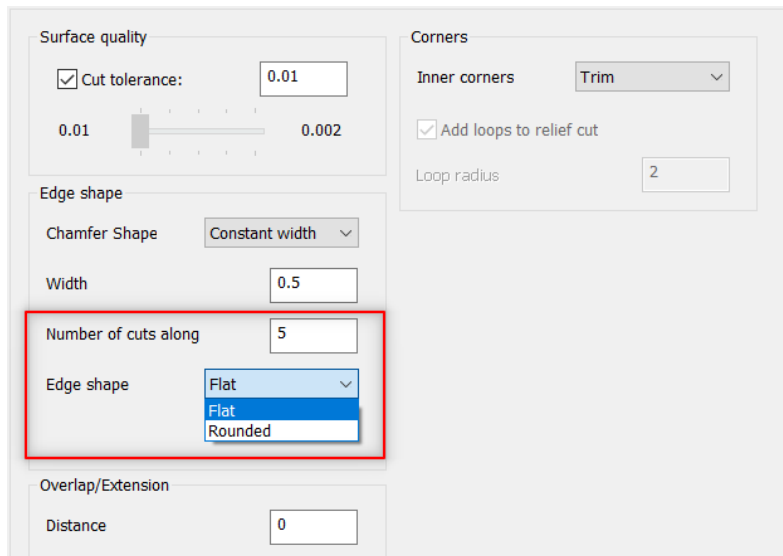
- Edge Breaking now supports 6 different types of tools.
- Toolpaths can now be created for Flat End Mill, Ball Nose End Mill, Taper Mill, Taper Ball Nose Mill, Lollipop Mill & Chamfer Mill.

SolidCAM 2022 – Sim5X Edge Breaking/New features

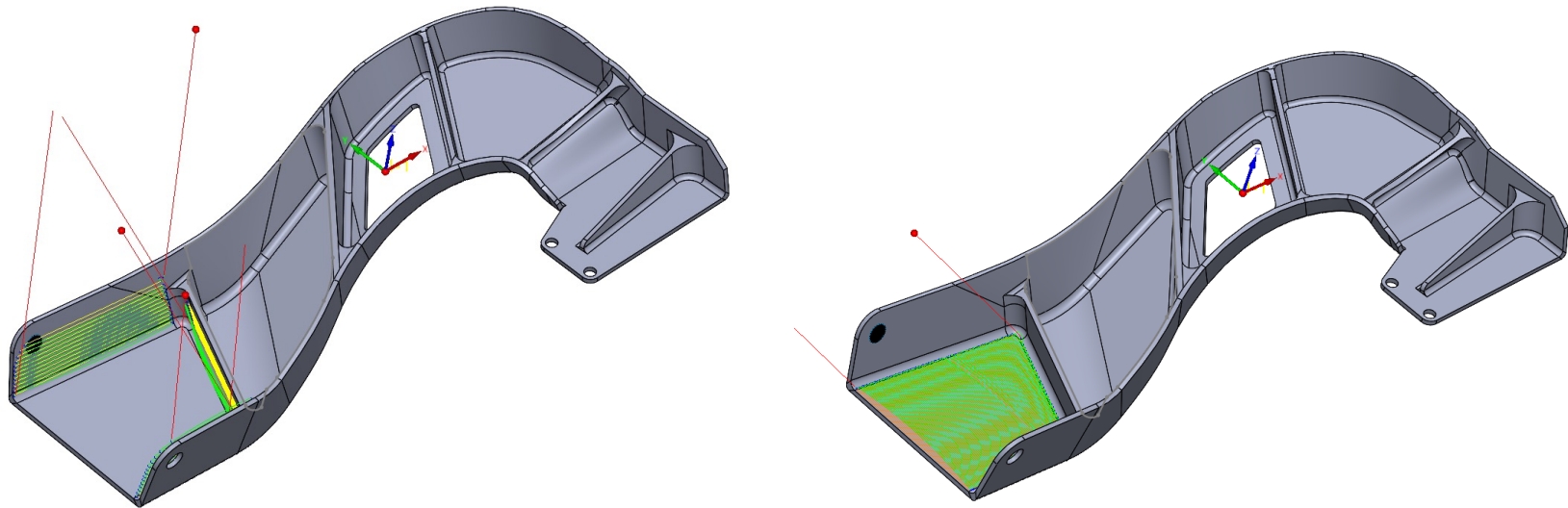


- Flat End Mills can be used to create the Chamfers directly.
- The Contact point of the tool can be moved along the cutting length of the Tool, to enhance tool life.

SolidCAM 2022 – Sim5X Edge Breaking/New features

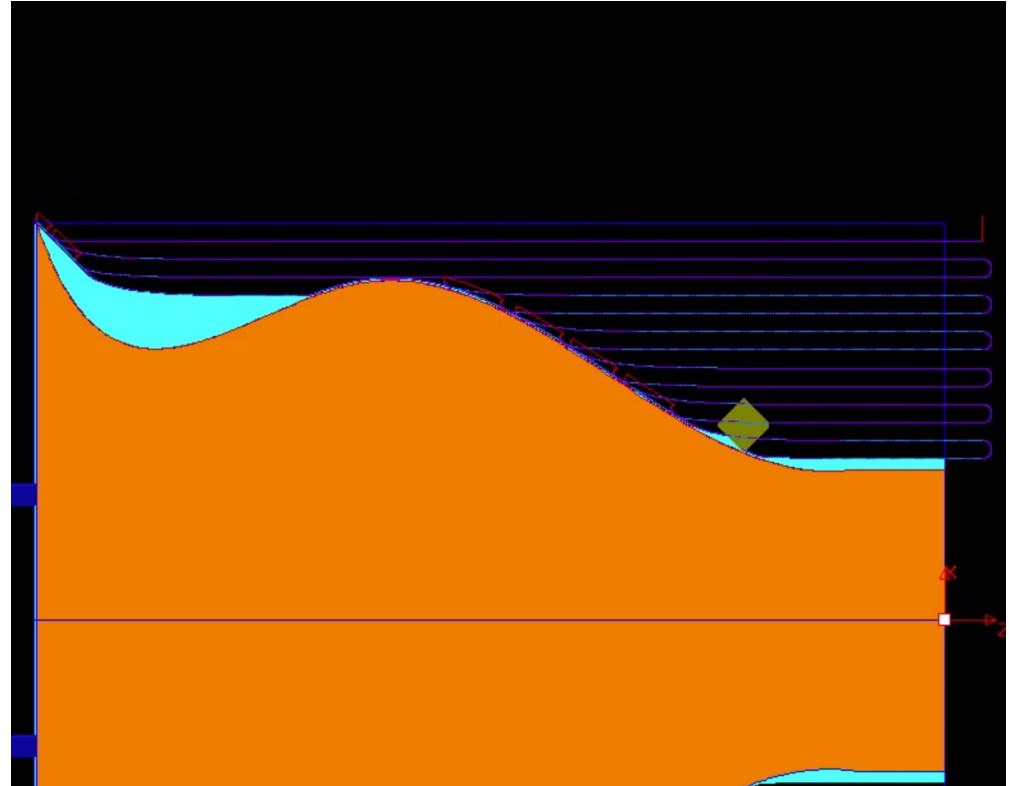


- Edge breaking can now generate Chamfers or Fillets, using Multiple passes.
- Ball Nose, Lollipop Mills & Taper Ball Nose Mills can be used to generate Fillets on edges.



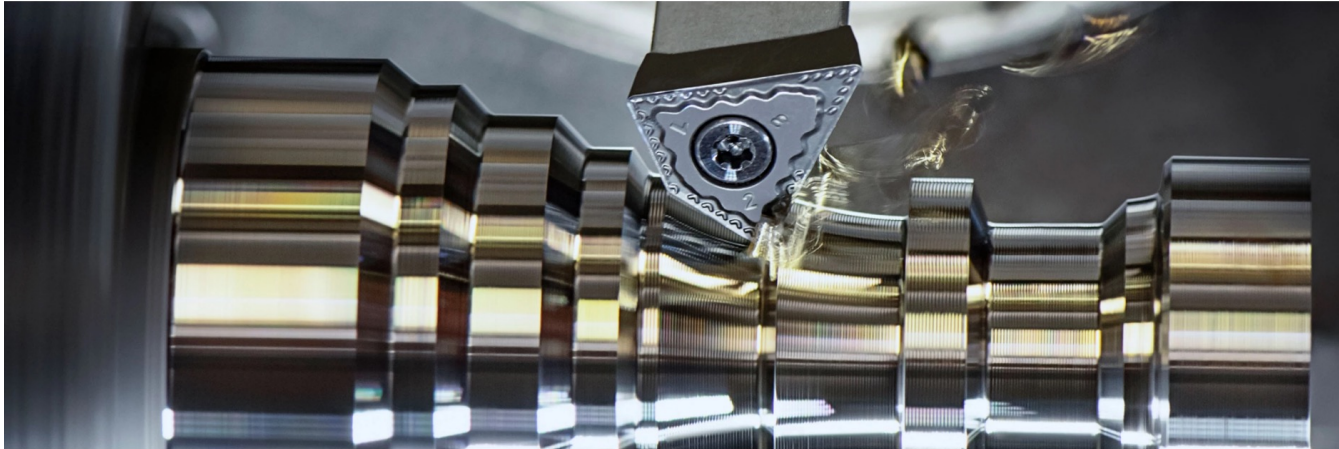
- Multiaxis Machining can now Finish Wall & Floor using Barrel Mills Automatically. User defines the Target , Wall & Floor Surfaces.
- Rest Machining can also be performed by defining boundaries using Barrel Mills.

- Enhanced **Trochoidal** turning toolpath
- Supports **all Insert shapes**
- Easier on machine-tools – always **smooth, flowing motion**
- **Increased tool life** – eliminates over engagement and dwelling
- **Reduced machining loads** – material entry and exit is always smooth, circular, and tangential



SolidCAM 2022 – Support Ceratizit Free Turn

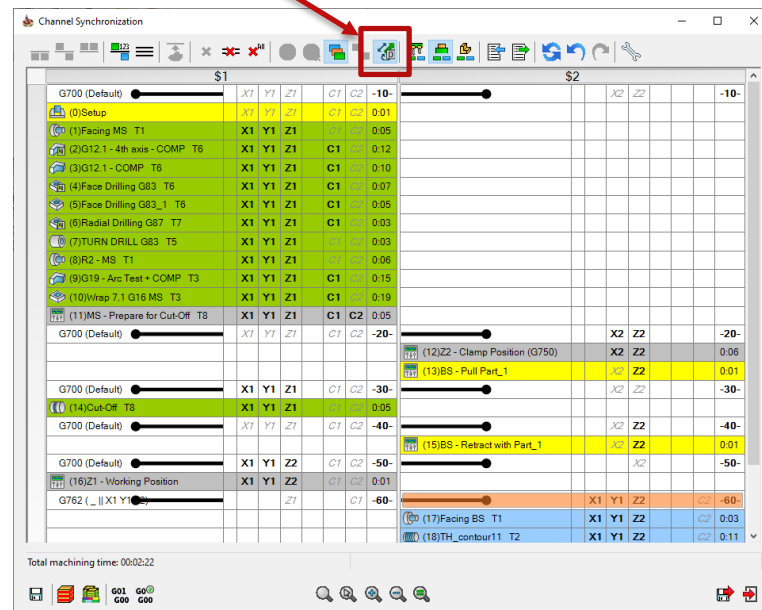
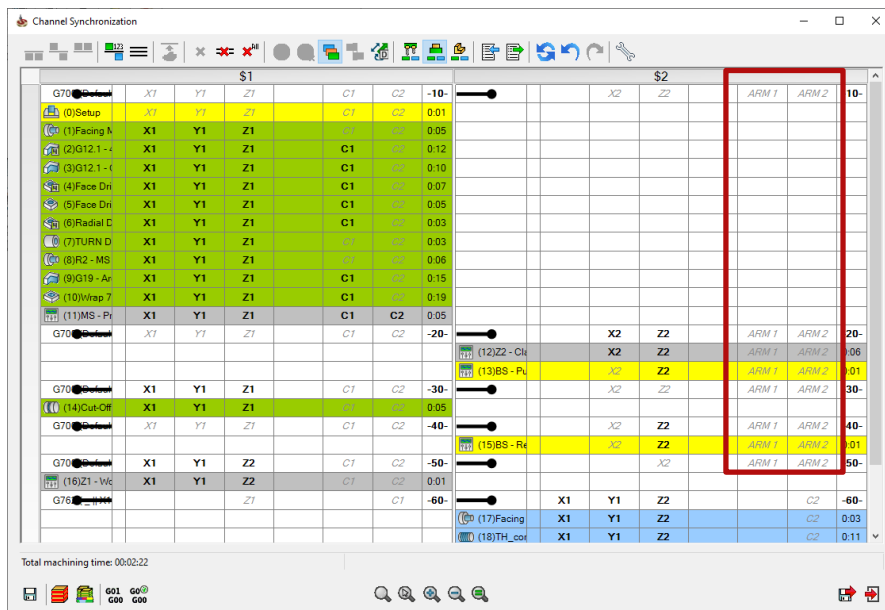
- Turning operations such as **roughing**, **finishing**, **contour turning**, **facing** and **longitudinal turning** are completed using **just one tool**.



SolidCAM 2022 – Channel Synchronization

Show/Hide Discrete axes

- Added possibility to **Show/Hide Discrete axes** (if defined in VMID)



- ❑ **SolidCAM Maker Version** has the functionality of the Regular Version, except it has **only three built-in post processors**:
 - HAAS Milling post
 - Mach3 Milling post
 - HAAS Turning post
- ❑ For **Makers, Hobbyists** and **Students**
- ❑ CAM Parts built in the Maker version cannot be read in the **Educational** or **Industrial** versions.
- ❑ SolidCAM Maker Version is downloaded **for free** from the SolidCAM website and will be updated, same as the latest Regular version.

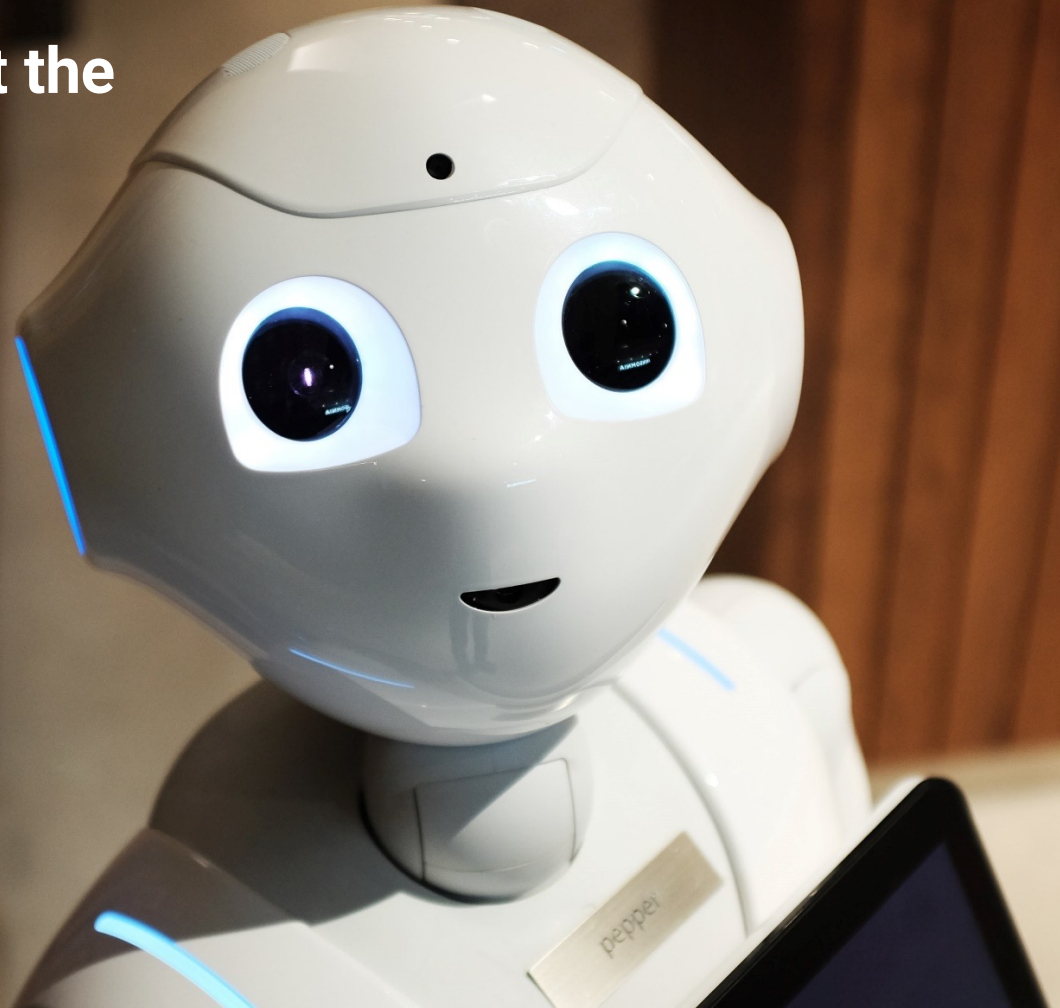


**"The best way to predict the
future is to create it."**

– Peter Drucker

SolidCAM

THE FUTURE OF CAM



THANKS FOR WATCHING

