SPRUTCAM X
WORLD CONFERENCE
2023

SprutCAM X 17:
The World Premiere

3 000 000

lines of code

18 627

unique users

810 539

launches

13 069

trial licenses

2 127 new commercial licenses in 2022

SprutCAM X: CAD/CAM for next generation makers

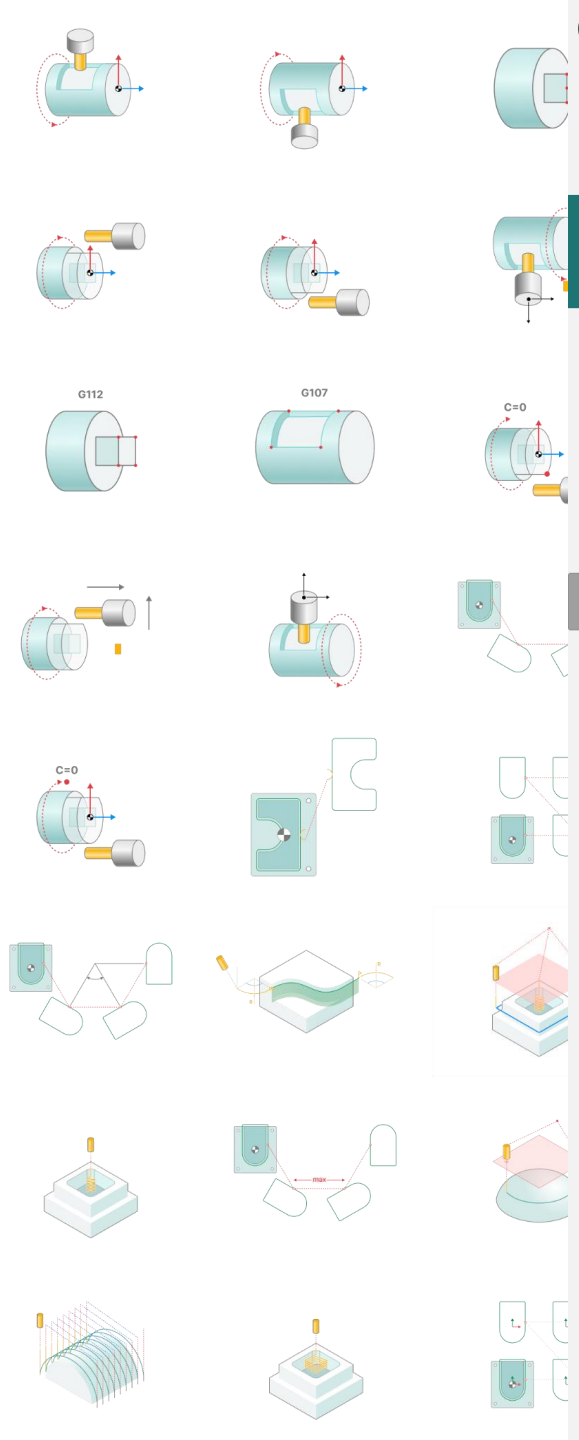
Enjoy the power/speed/safety of a natural easy-to-learn CNC programming workflow

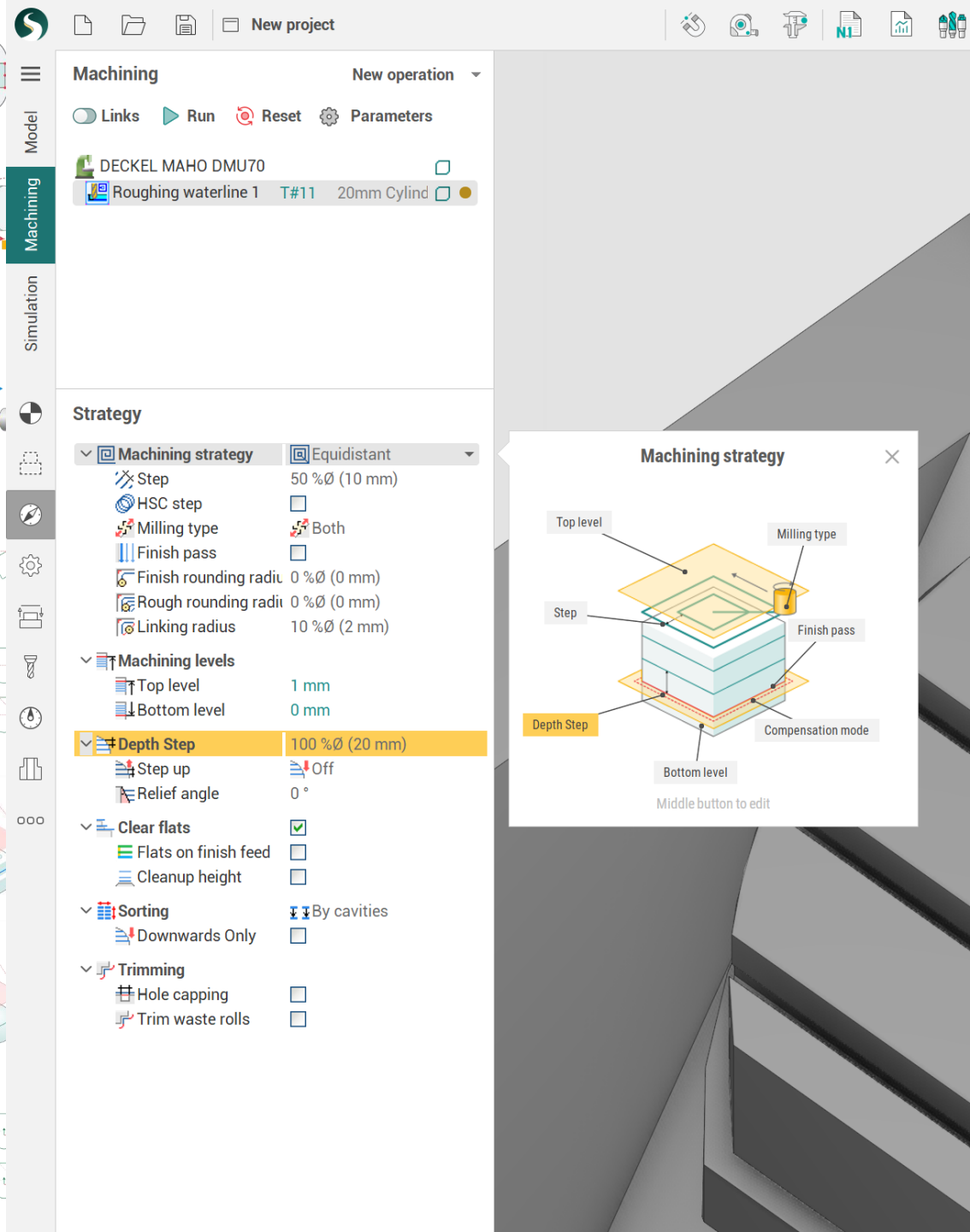
SprutCAM X Robot: all-in-one CAD/CAM/OLP for robots

Experience the innovative all-in-one software suite for complex and creative robotic tasks

Features design SprutCAM X

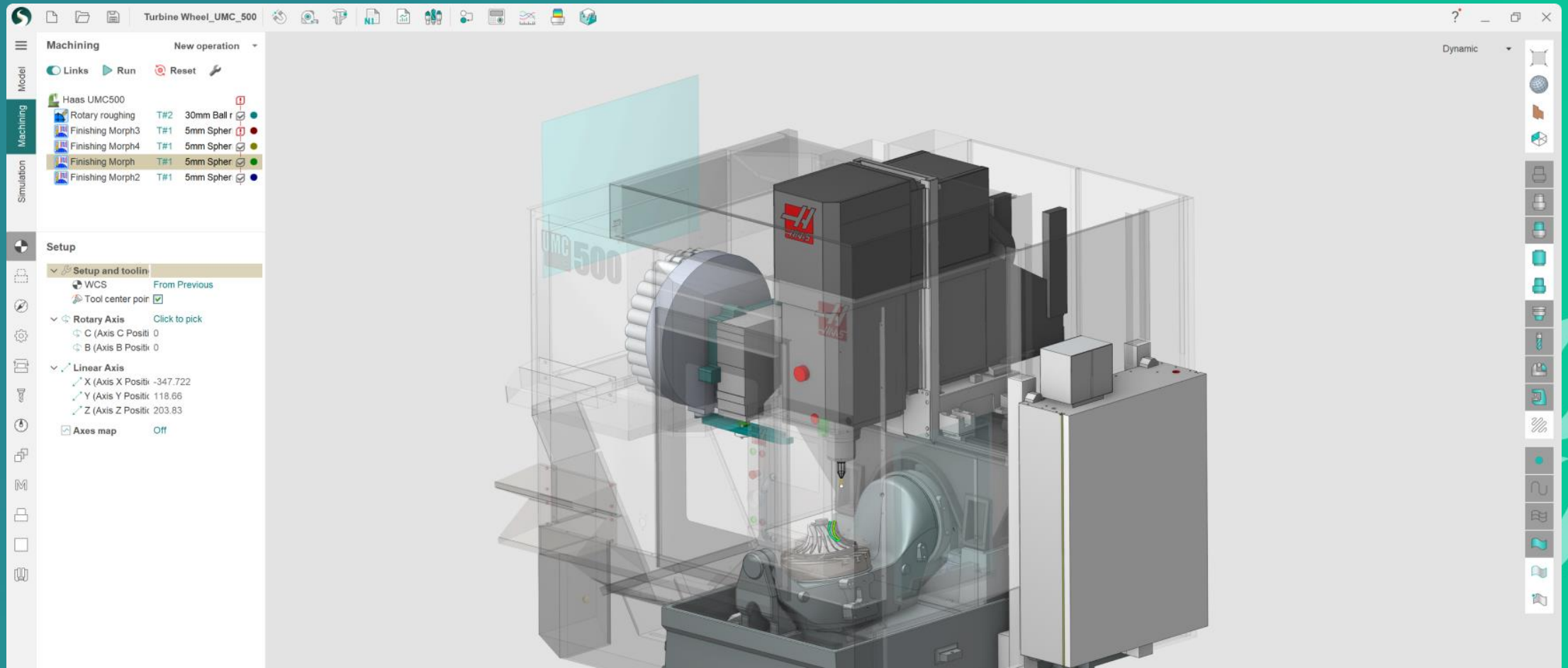
New hints and interactive smart hints to quickly navigate the parameters





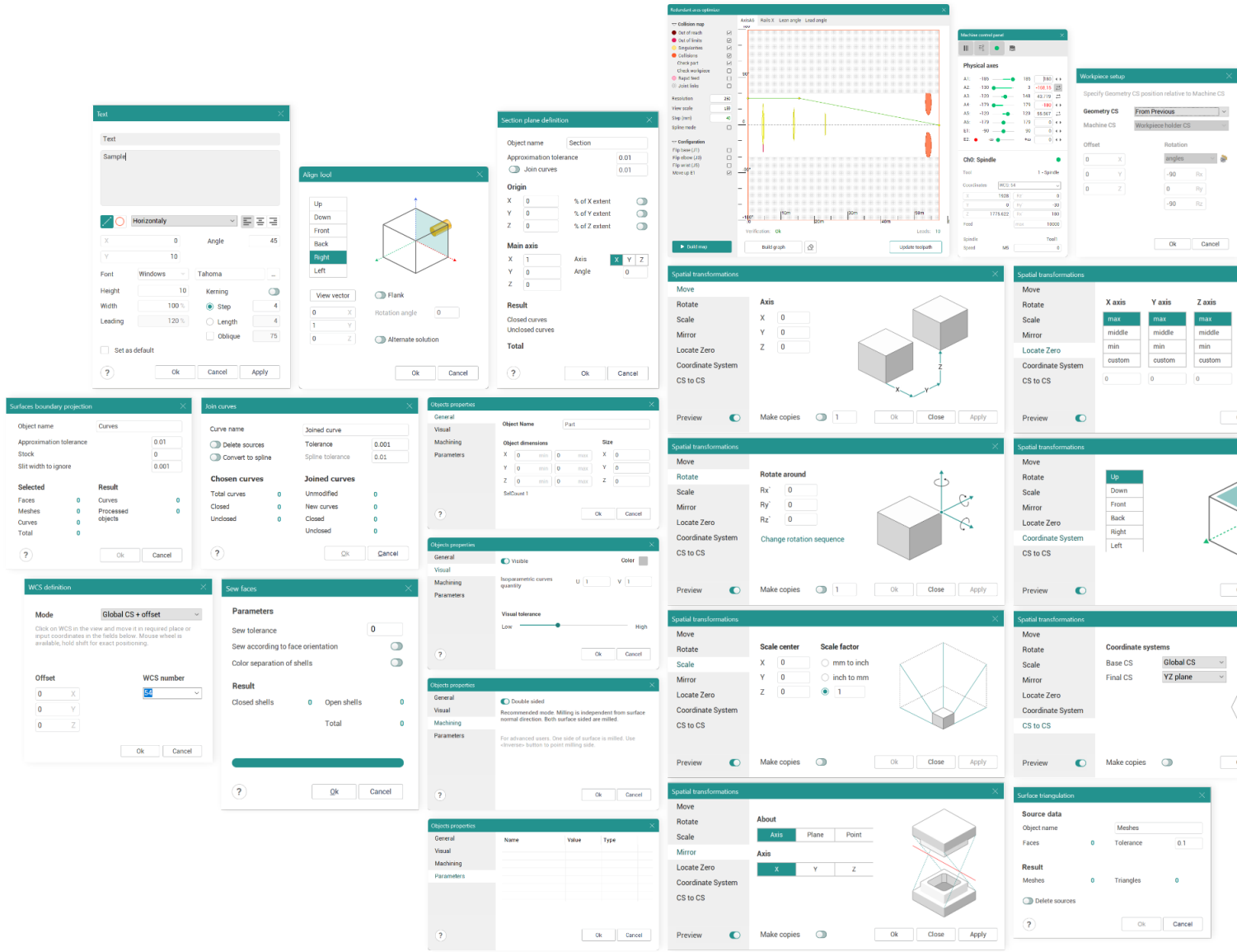
Features design SprutCAM X

- One window for everything
- Everything you need is always at hand
- You are always in control of the process

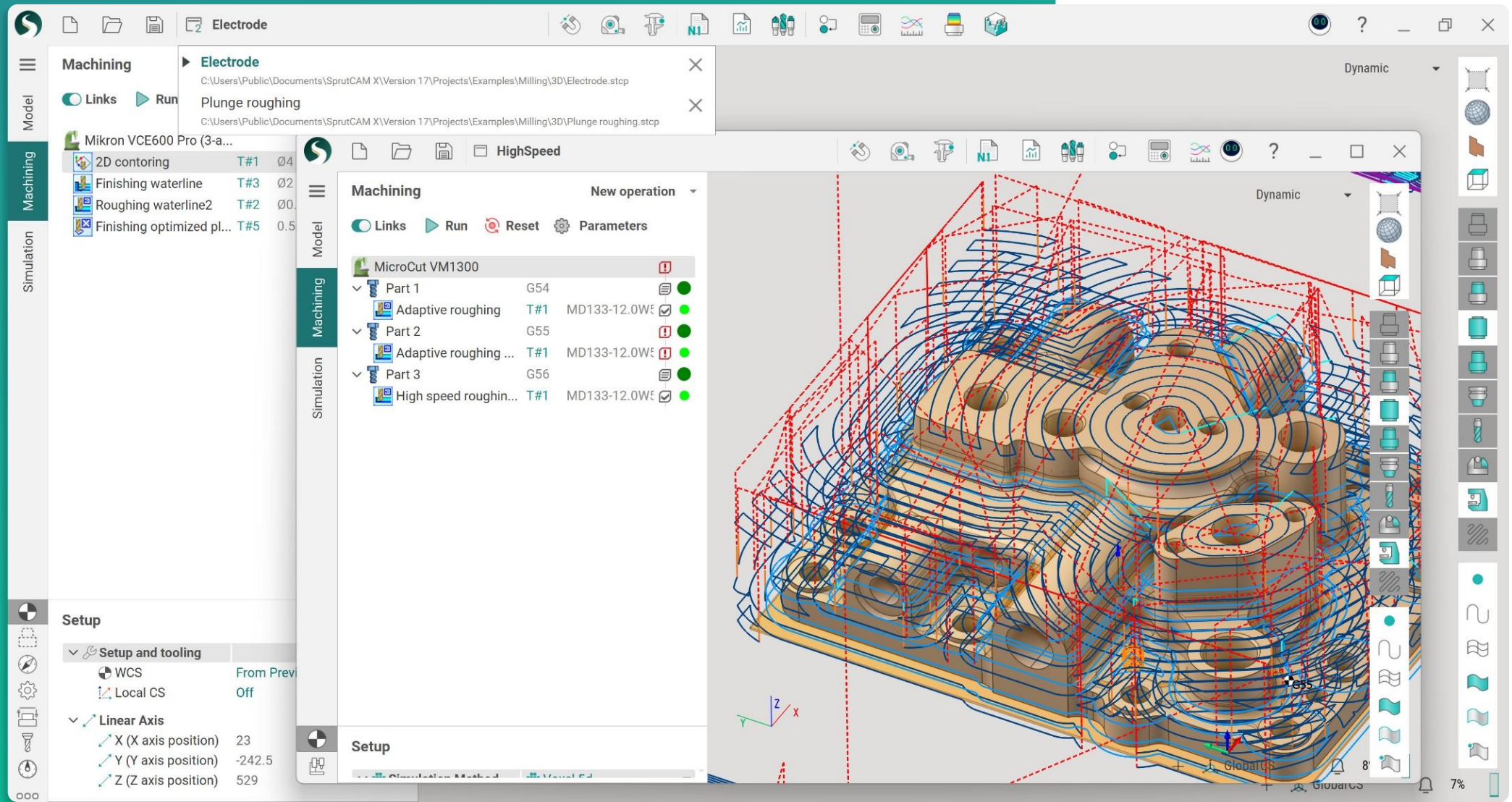


Features design SprutCAM X

- Laconic and simple
- Nothing distracts from work
- Consistent workflow



Multiproject



Multiproject

Features

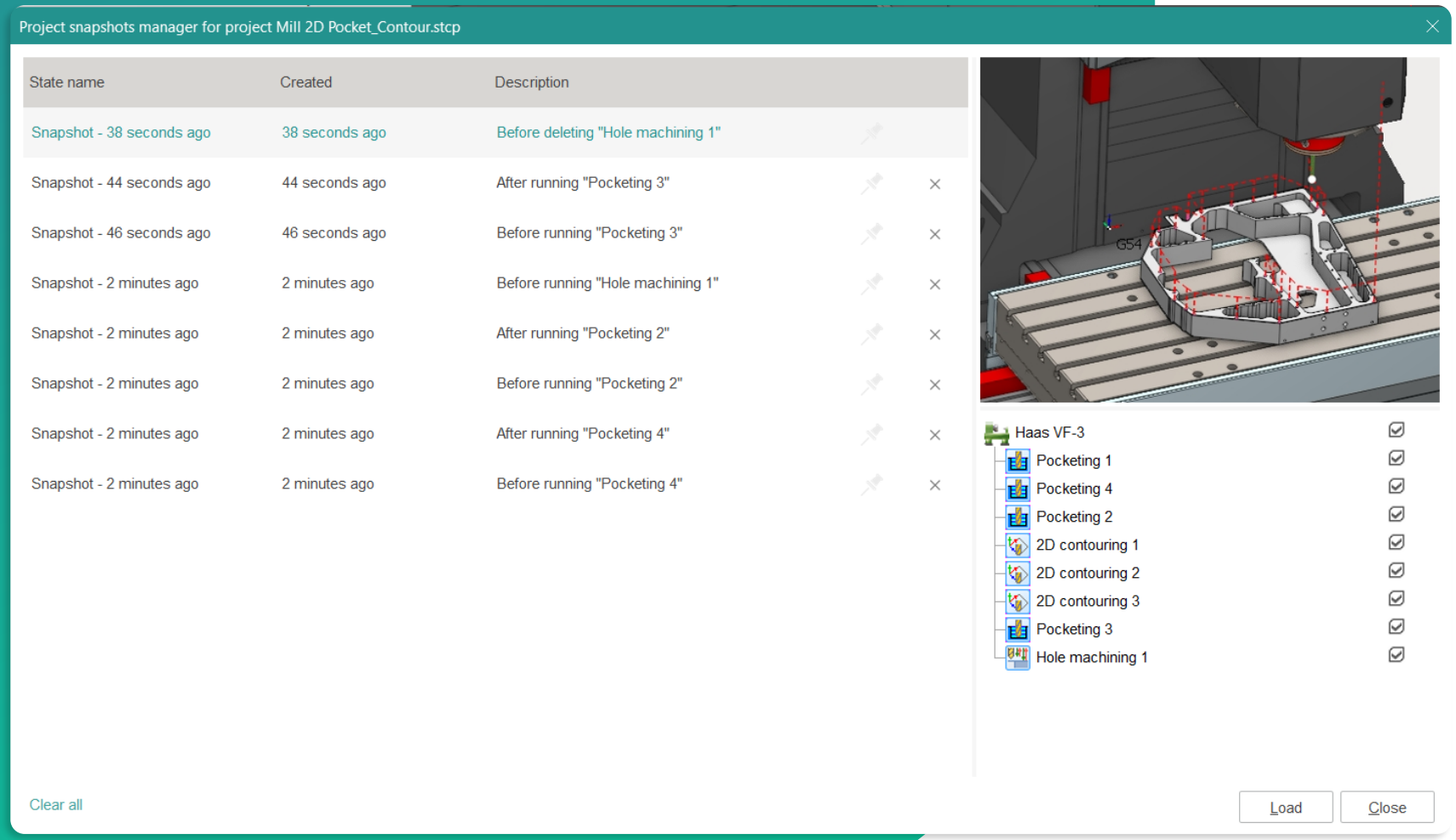
- Simultaneous management of multiple projects
- Ability to open multiple projects in a single window or split SprutCAM X into multiple windows for multi-display workflow
- Seamless transfer of operations between projects
- Perform calculations in one project while simultaneously working on another

Benefits

- Streamlined workflow for time efficiency
- Simple reusability of similar approaches across multiple projects

UNDO?

Snapshots


Project snapshots manager for project Mill 2D Pocket_Contour.stcp
State name
Created
Description
Snapshot - 38 seconds ago
38 seconds ago
Before deleting "Hole machining 1"
Snapshot - 44 seconds ago
44 seconds ago
After running "Pocketing 3"
Snapshot - 46 seconds ago
46 seconds ago
Before running "Pocketing 3"
Snapshot - 2 minutes ago
2 minutes ago
Before running "Hole machining 1"
Snapshot - 2 minutes ago
2 minutes ago
After running "Pocketing 2"
Snapshot - 2 minutes ago
2 minutes ago
Before running "Pocketing 2"
Snapshot - 2 minutes ago
2 minutes ago
After running "Pocketing 4"
Snapshot - 2 minutes ago
2 minutes ago
Before running "Pocketing 4"
G54
Haas VF-3
Pocketing 1
Pocketing 4
Pocketing 2
2D contouring 1
2D contouring 2
2D contouring 3
Pocketing 3
Hole machining 1
Clear all
Load
Close

Snapshots

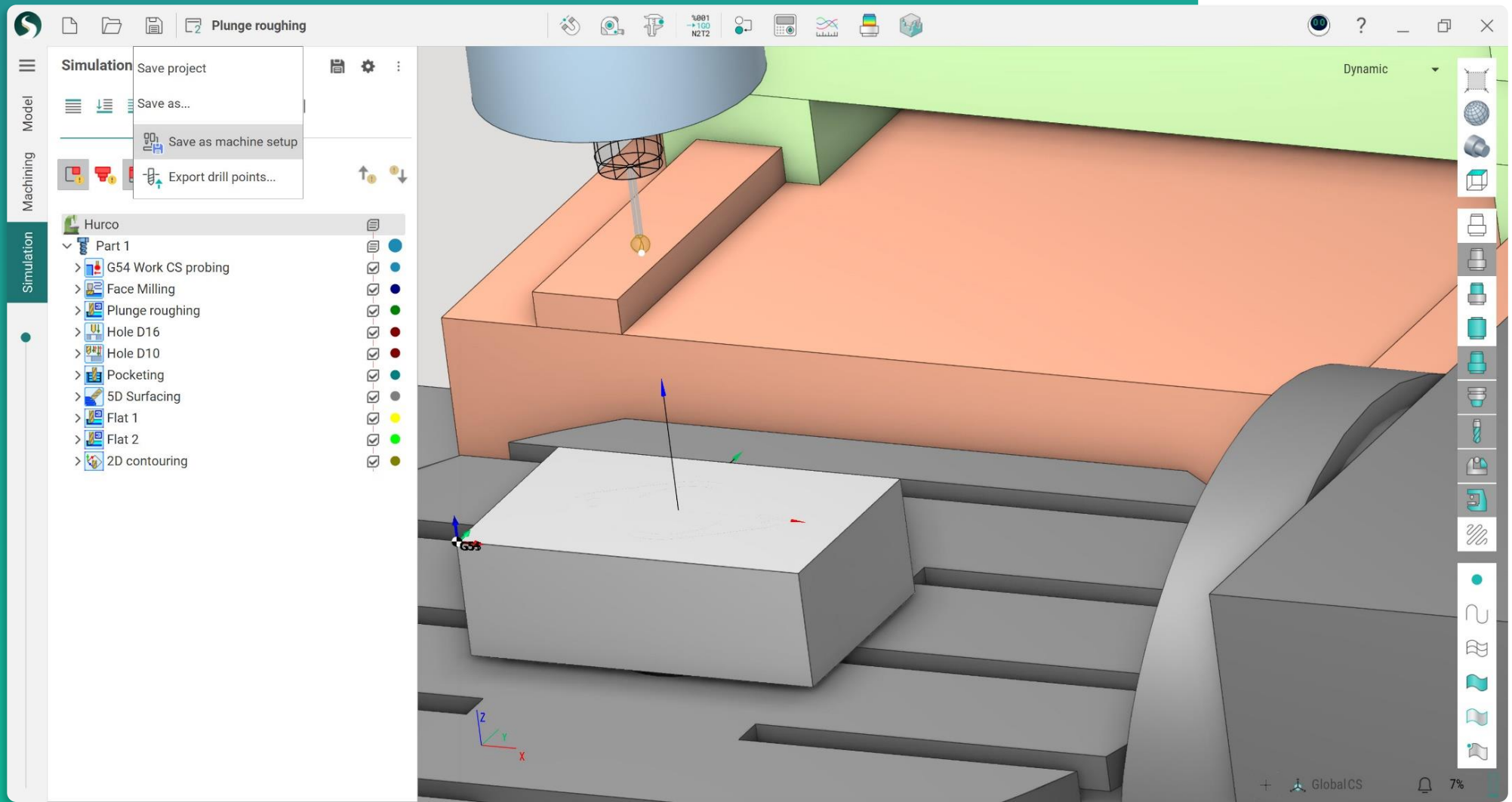
Features

- Automatic creation of snapshots triggered by events
- Time-based snapshots disabled by default
- Rapid “Undo" functionality through the snapshots list
- Snapshot manager for convenient preview
- Automatic snapshots triggered before/after toolpath calculation and before delete operations

Benefits

- Enhanced safety while working on the machining project
- Swift restoration to the desired project state

Machine Setup File



Machine Setup Files

Features

- Create new project based on a setup
- Seamlessly transfer setups between machining projects

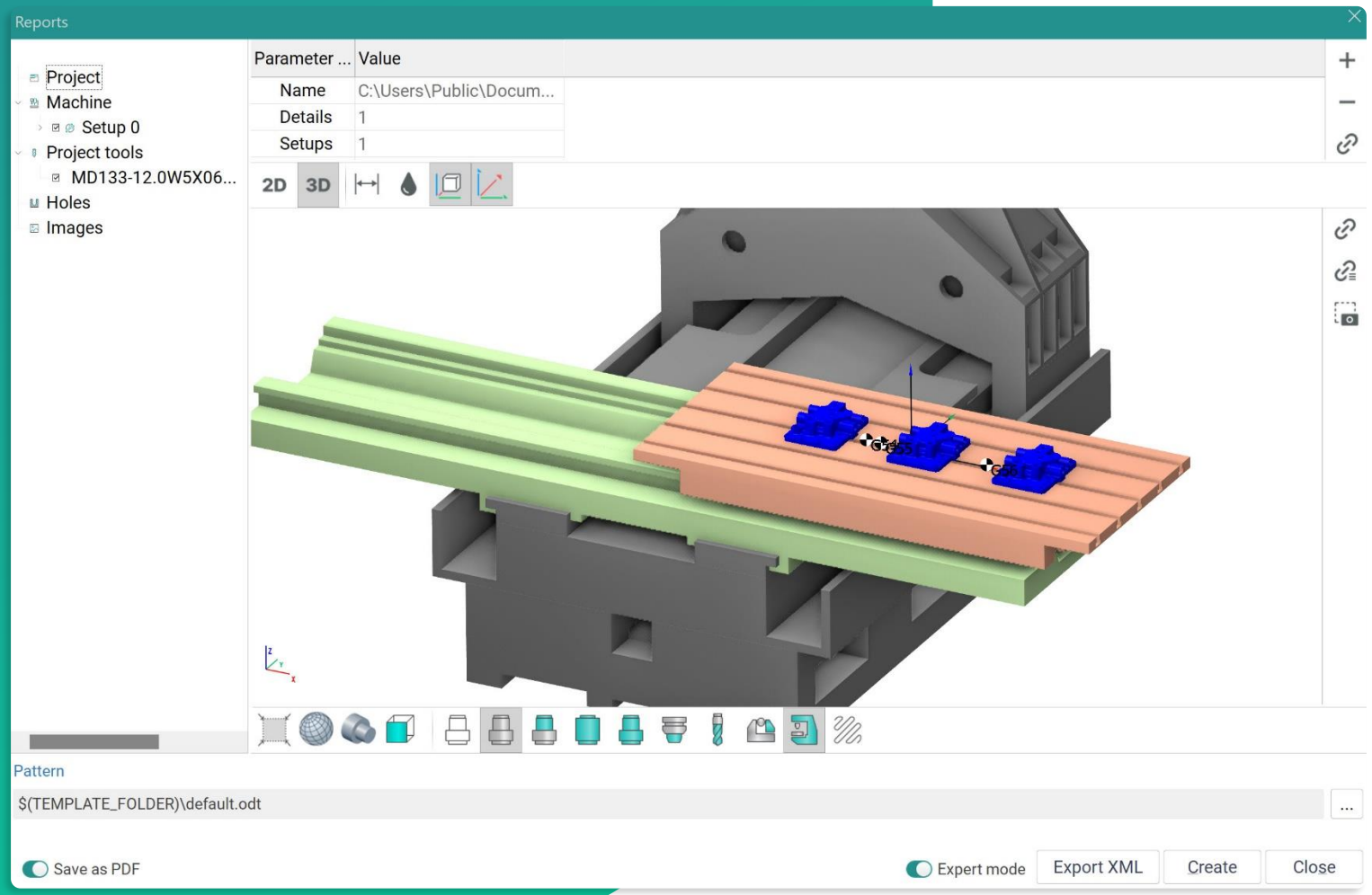
Benefits

- Easy and quick transfer of machine digital twins, settings, tools from a ready-made template

Content

- Machine
- Fixture with setup data
- Tool list
- Tool Blocks (for turret)
- Tools positions in turret
- Machine dimensions
- Auxiliary equipment status (on/off)
- Setup Stages and Parts from CAM tree

Machining Report



Machining Report

Features

- Fresh and intuitive user interface
- Advanced expert mode with extensive settings
- Fine-grained control over the graphic scene
- Export functionality to multiple formats
- Diverse selection of report templates

Benefits

- Report generation with only relevant content
- Swift generation of reports
- Obtaining high-quality images

ÉNCY

ÉNCY

BACK

ChatGPT Has Come for CAM Software

SprutCAM X now has a ChatGPT-based AI assistant that will not only explain your G-code, but explain to your wife why you're working so late. Seriously.

WRITTEN BY Michael Alba

PUBLISHED May 16, 2023

READING TIME ~2 mins

And then ChatGPT came for CAM.

In its latest update, CNC machining software SprutCAM X added an AI assistant based on OpenAI's ChatGPT API. Its name is Éncy.

SprutCAM Tech, the Cyprus-based developer of SprutCAM X, says

ENCY

Features

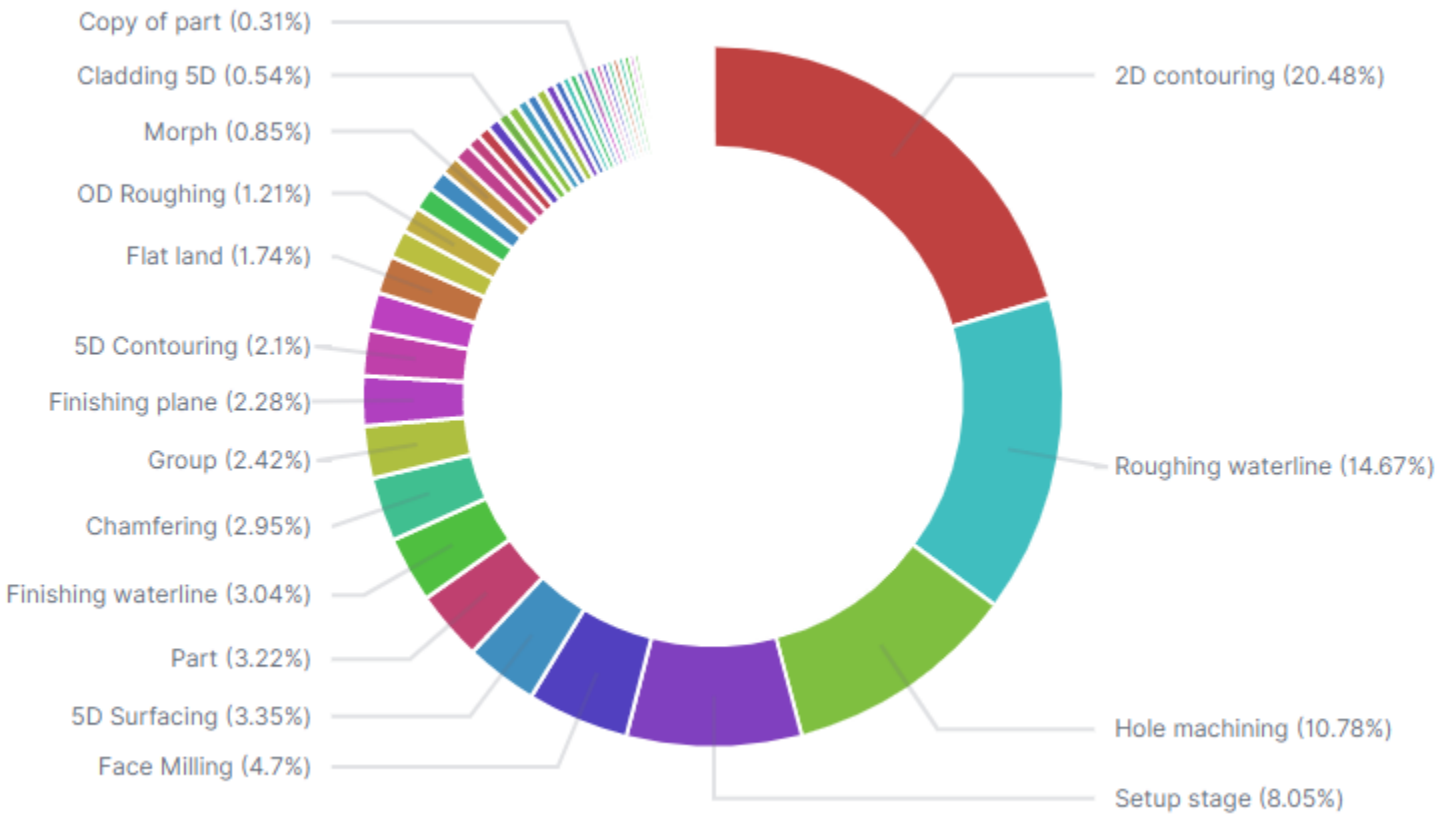
- Explain the G-code generated as a result of post-processing
- Generate a G-code using a text description of the operations
- Write code in Python to create .dxf or .stl files
- Provide reference information for the industrial robot or CNC-machine when creating kinematic schemes in MachineMaker
- Answer any question from a SprutCAM X user, even not related to the operation of the software

Benefits

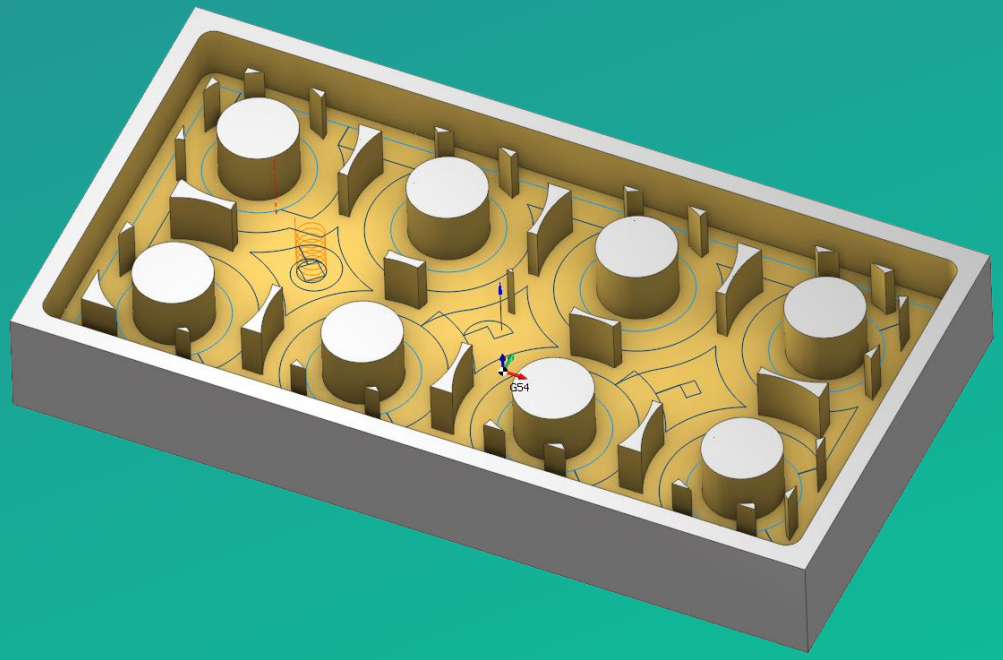
- Introducing the revolutionary CAM AI assistant, a first in the industry
- A showcase of SprutCAM Tech's pioneering role in advanced technologies
- Unlocking new learning possibilities for G-code proficiency

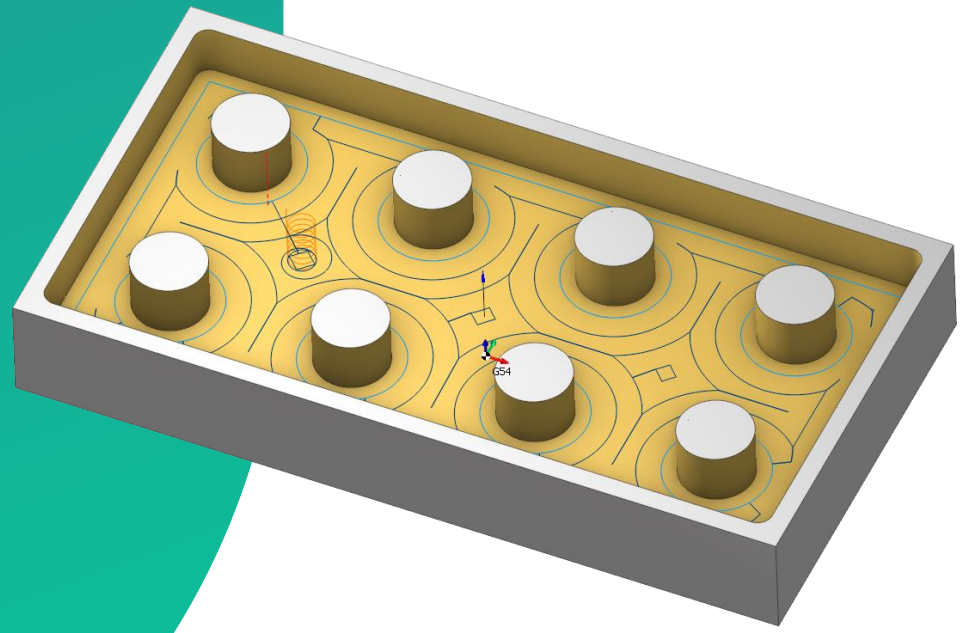
The Top 5 operations commonly utilized by SprutCAM X users on a daily basis

1. 2D contouring
2. Roughing waterline
3. Holes machining
4. Face milling
5. 5D surfacing



Roughing waterline





Roughing waterline

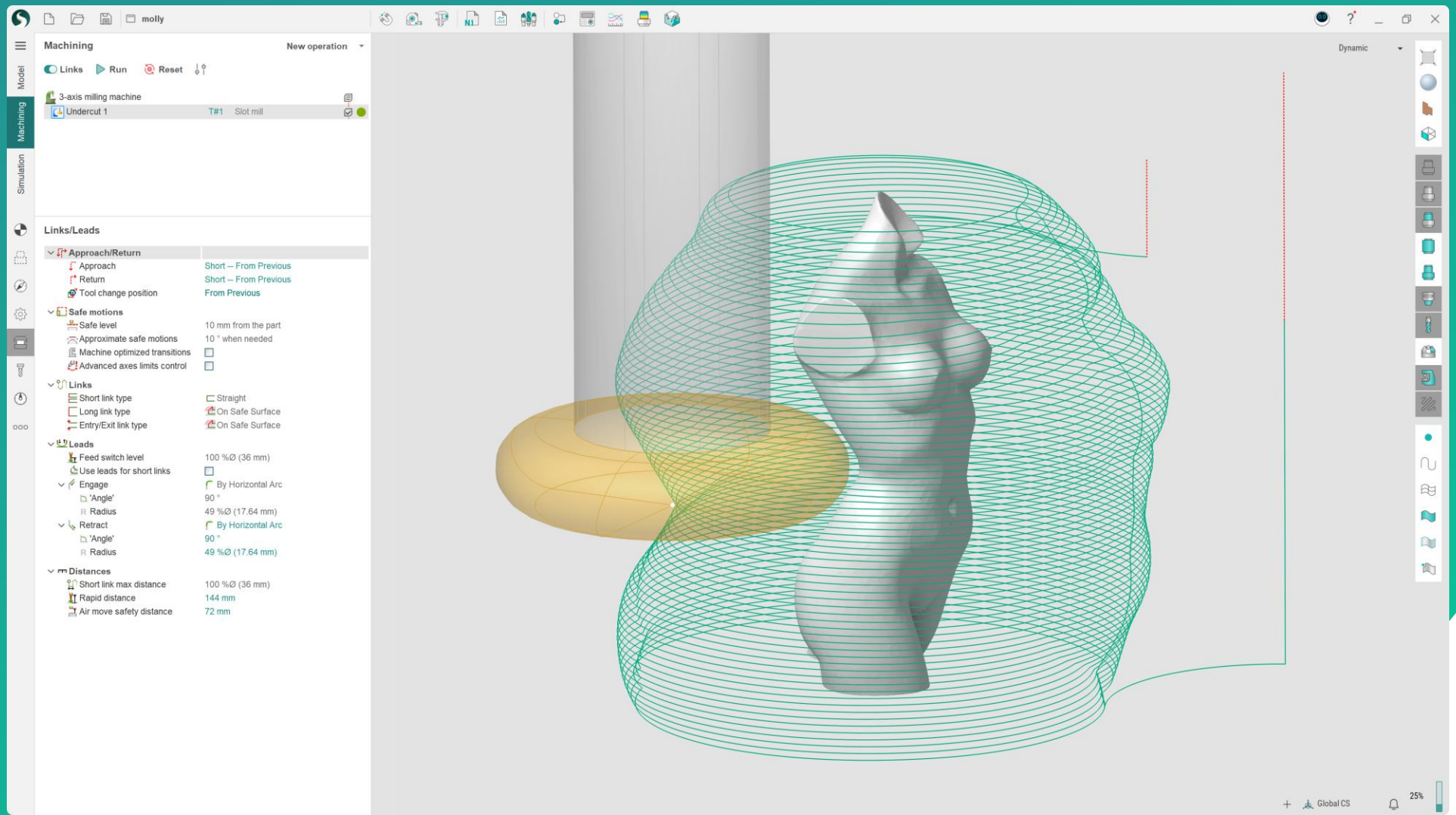
Features

- Seamless integration of rest machining in corners
- Accelerated calculation speed by 30-40% (while using a single core)
- Significantly enhanced stability
- Simulation feature emphasizes cutting during non-cutting feed movements
- Simulation feature highlights forbidden plunges

Benefits

- Enhanced precision through seamless rest machining integration in corners
- Faster calculation speed for increased productivity
- Improved stability for a reliable machining experience
- Prevention of errors and improved safety through simulation highlighting forbidden plunges

Undercut waterline for 3-axis machining



Undercut waterline for 3-axis machining

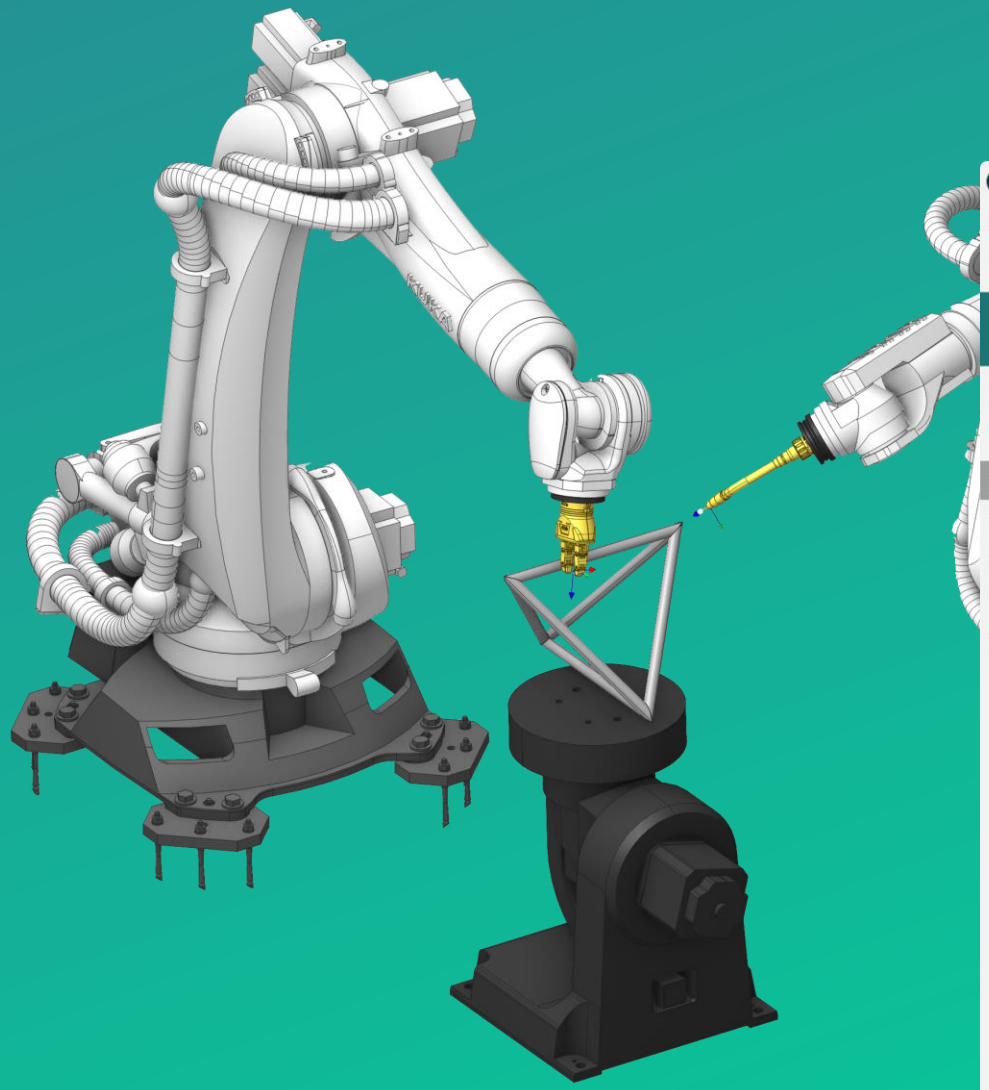
Features

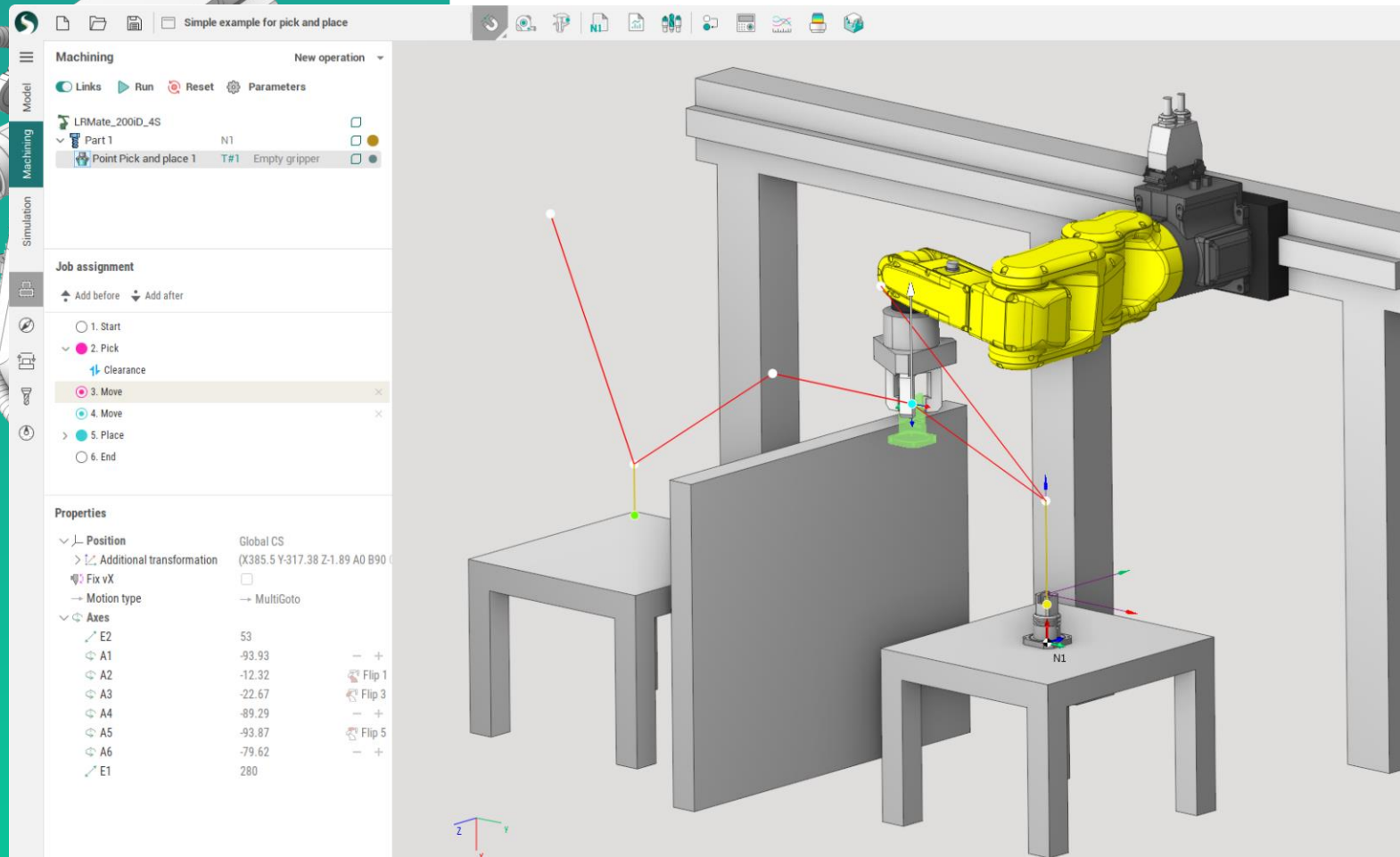
- Any kind of undercut tools (lollipop, disk tool, slot tool)
- Adaptive rough passes
- Multicore calculation

Benefits

- Simple to use (just create and click Run)
- Quick and correct results

Point Pick and Place





Point Pick and Place

Features

- Addition of a new operation based on the existing "Pick and Place" operation
- Introduction of a new working task utilizing nodal points
- Ability to set machine movement positions at specified points
- Flexibility to add and remove points to define desired part movement.

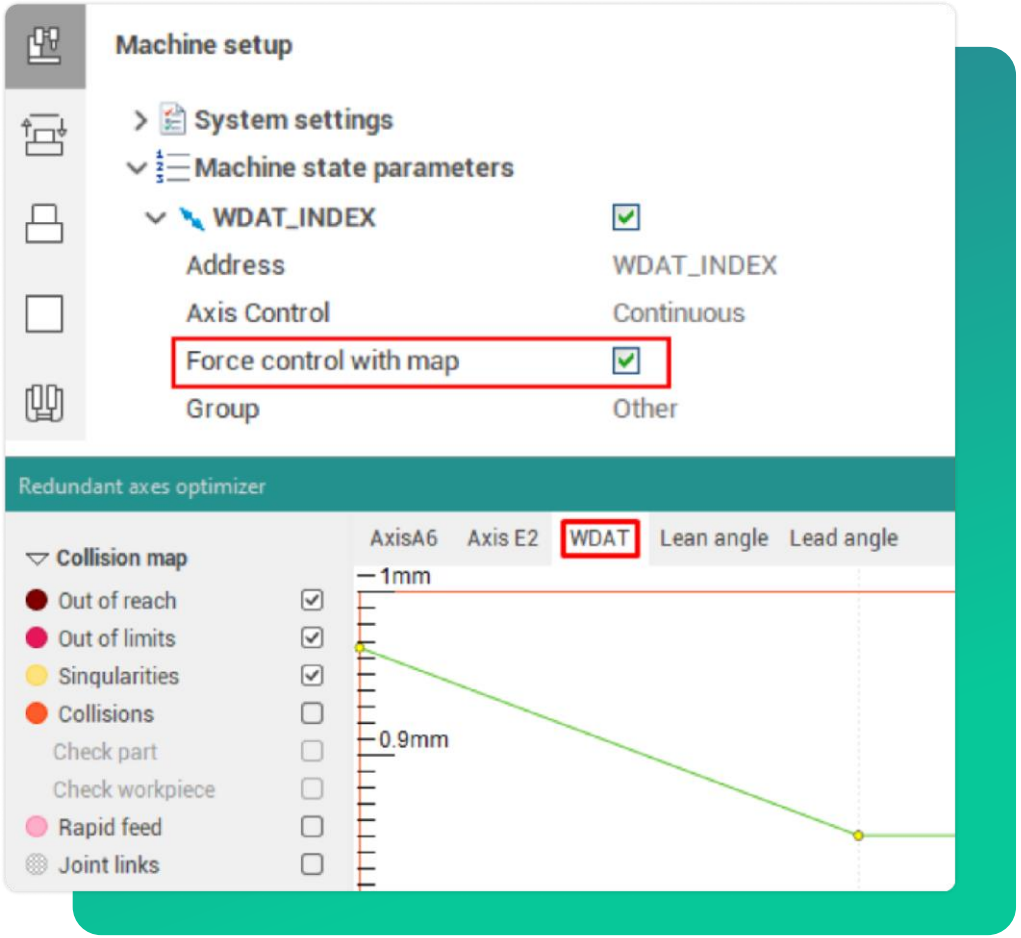
Benefits

- Improved precision and control through the utilization of nodal points
- Efficient customization of machine movement for desired part positioning
- Enhanced flexibility to adjust the movement by adding or removing points as needed

Reduntant axes optimizer improvements

- Arbitrary machine parameter control using map
- Added display of boundaries of periodic axes
- Singularity avoidance for the 2-axis rotary table of the robot

Arbitrary machine parameter control using map



Arbitrary machine parameter control using map

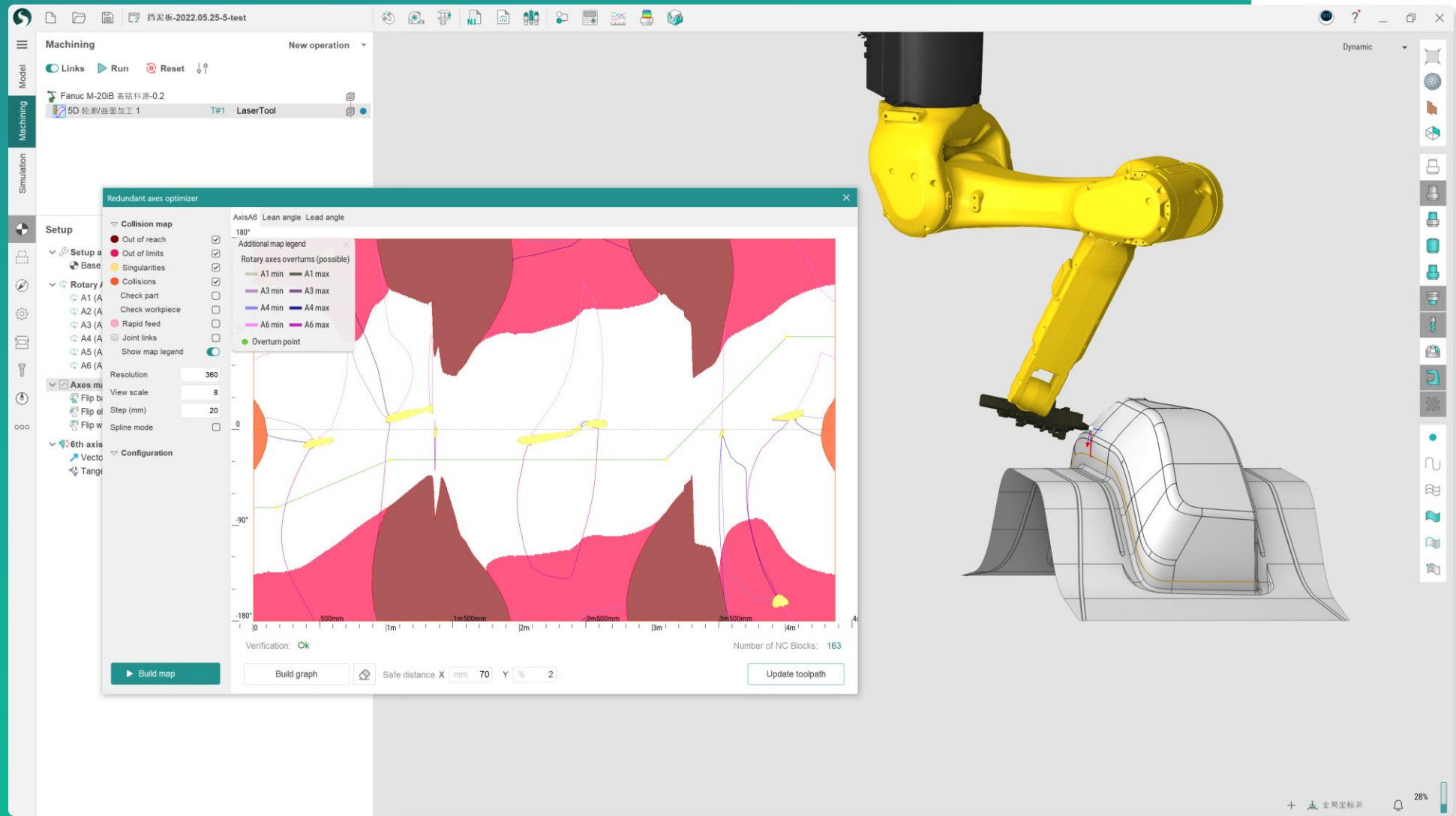
Features

- Controlled parameter must be described in schema as an additional axis
- Meaning of axis can be any (Voltage, Current, Paint or Material feed, etc.)
- Value of parameter is defined by graph and smoothly integrated into tool path

Benefits

- Possibility to control and simulate any additional parameter

Boundaries of periodic axes



Boundaries of periodic axes

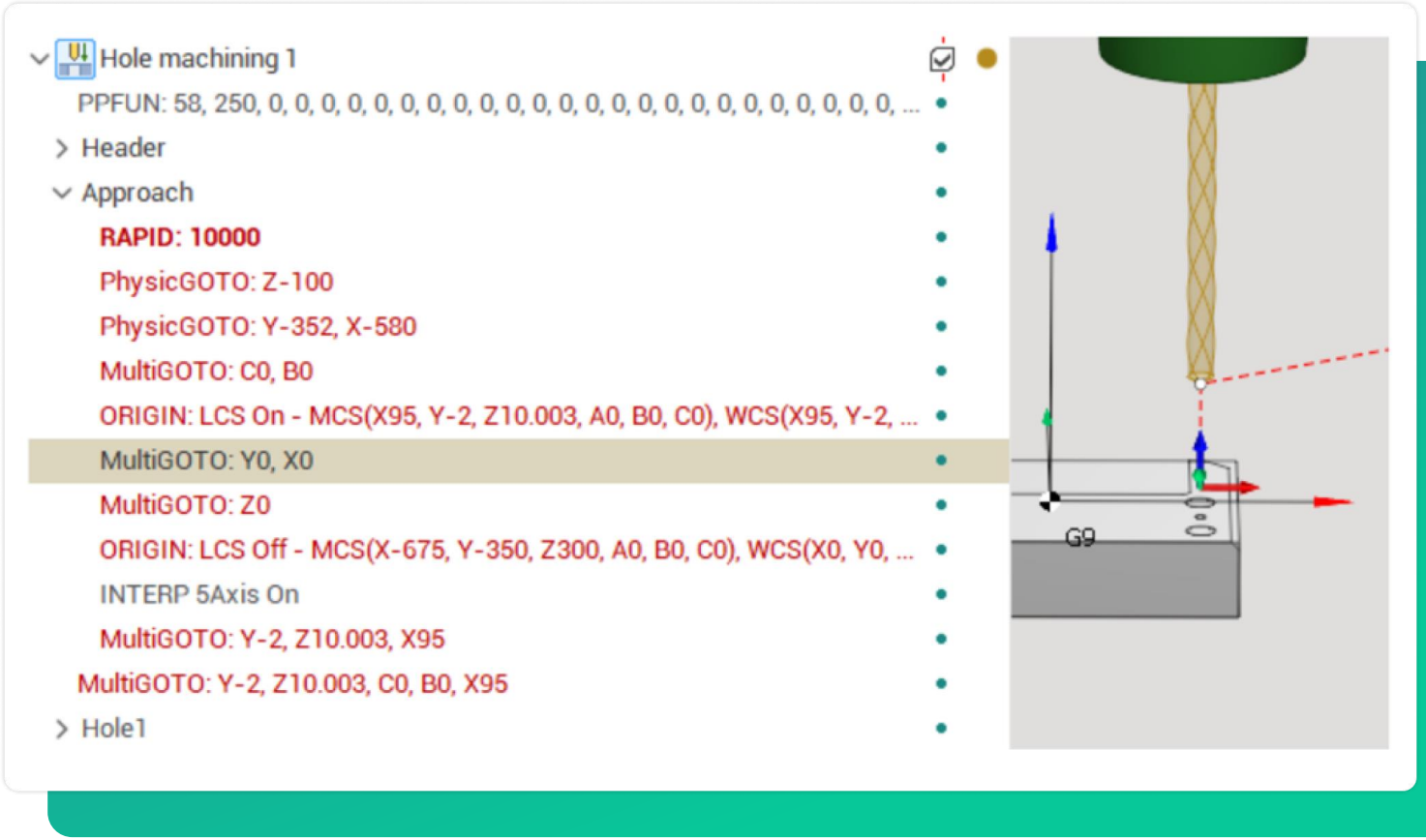
Features

- Usage of the full range of 4th, 6th and other robot axes
- Possibility to avoid the positioner singularities
- Warning about axis overturn

Benefits

- Correct toolpath on the first try

Approach/return for the TCPM enabled operations using Local CS



Approach/return for the TCPM enabled operations using Local CS

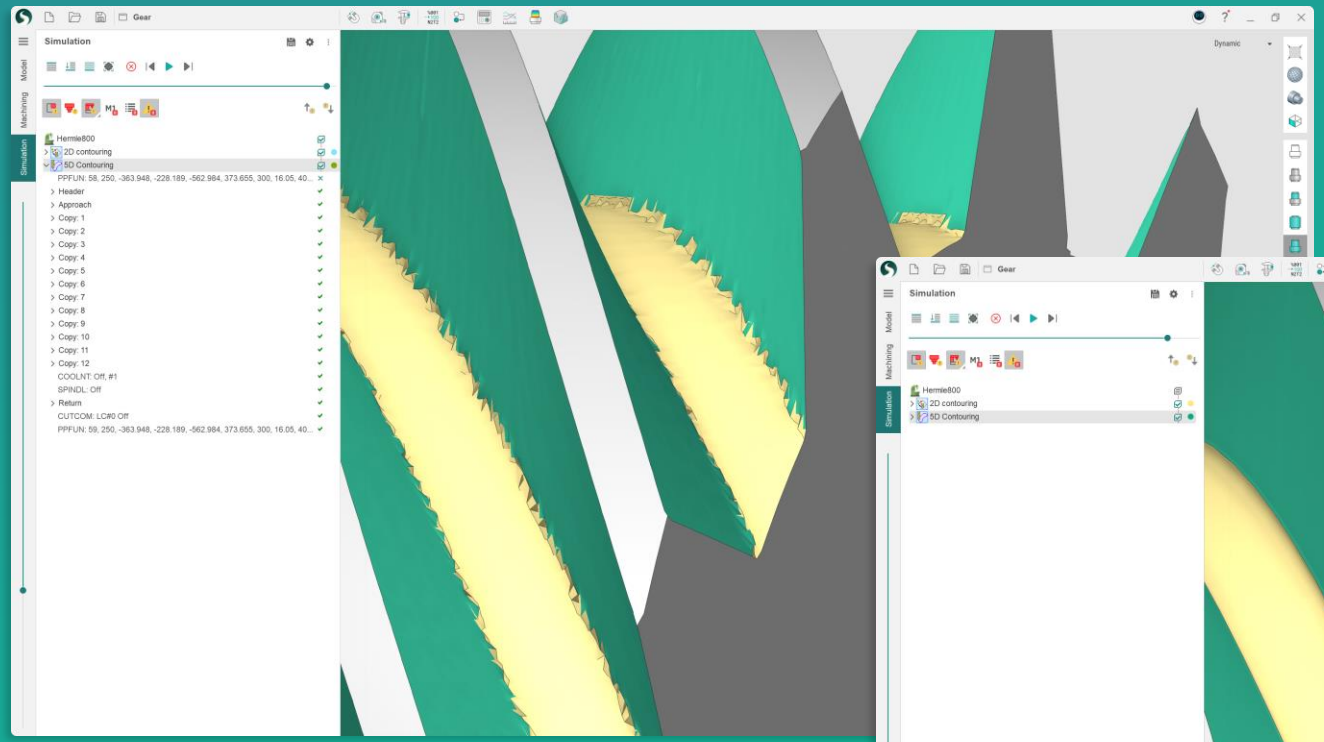
Features

- 5-axis tool center point management (TCPM) functionality
- Temporary activation of a specific LCS (Local Coordinate System) for tool movements
- Example command showcasing the usage of SLCS (Switch LCS) feature

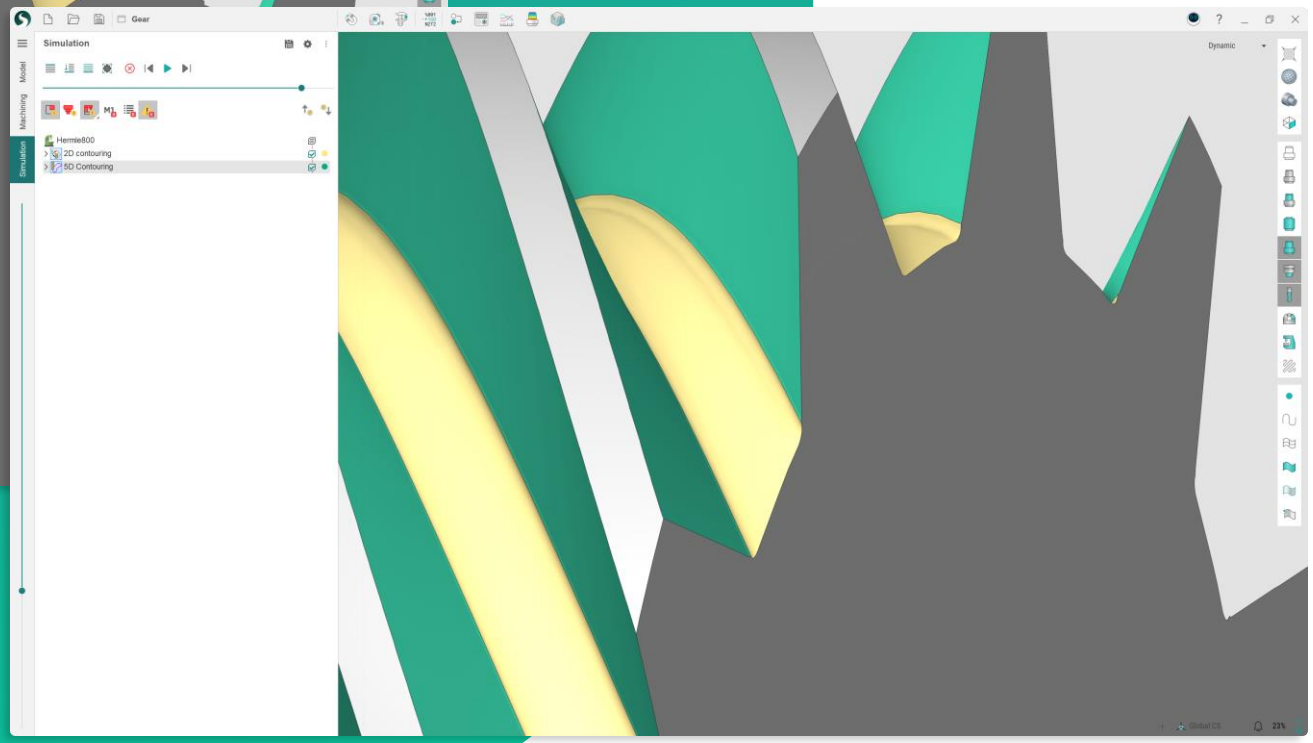
Benefits

- Enhanced safety with adaptable tool movements using specific LCS activation
- Versatile support for different machine kinematics, expanding application possibilities
- Precise control over the tool's center point management for accurate machining
- Efficient execution of tool movements within the appropriate LCS, optimizing machining processes

5-axis Solid Simulation



Voxel



Solid

5-axis Solid Simulation

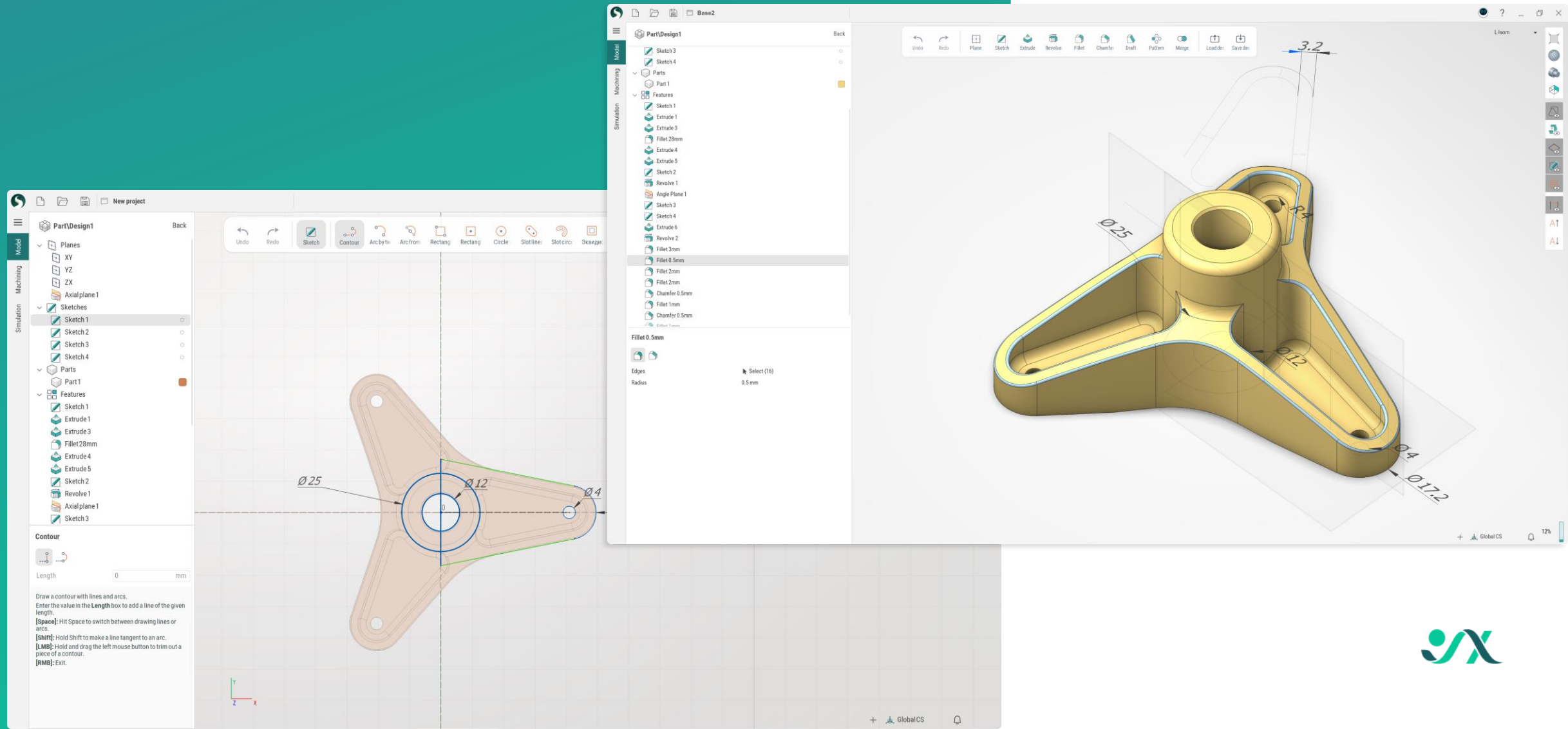
Features

- Facet triangles solid representation
- Ultra-high solid tolerance (up to 0.0001)
- High optimized algorithms

Benefits

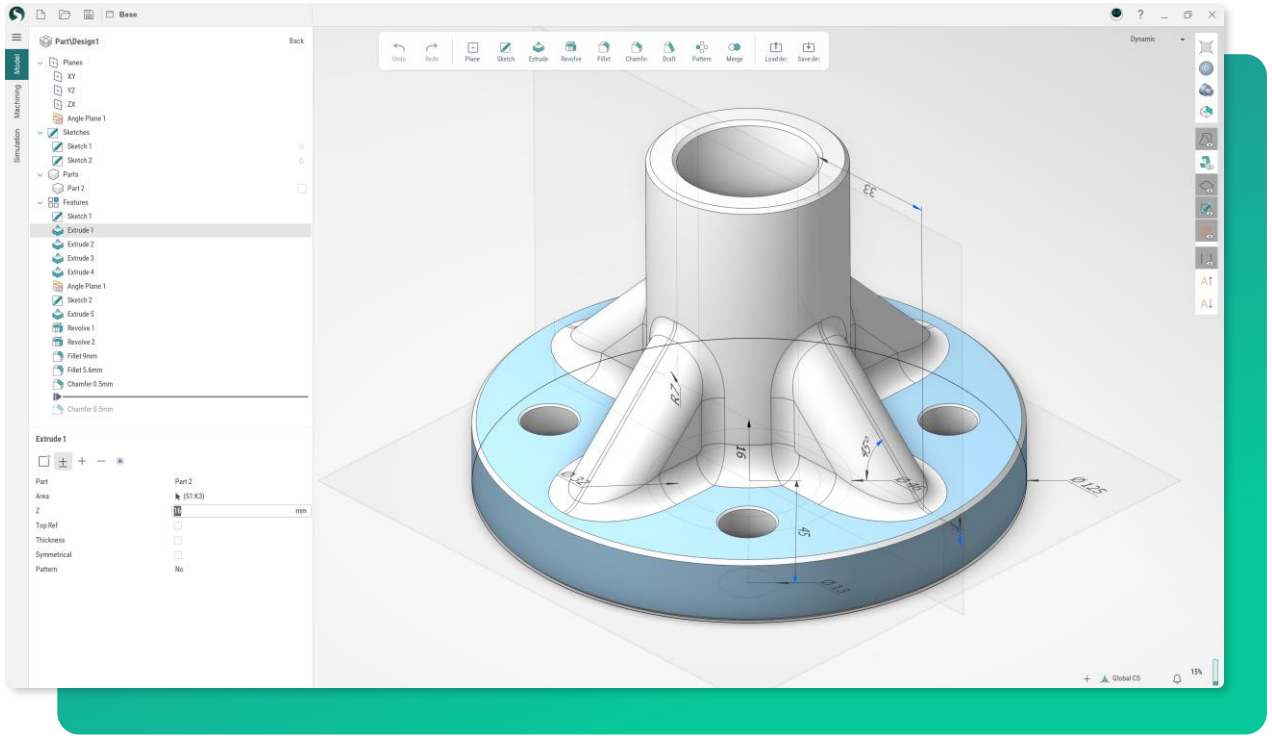
- Unique technology
- Unsurpassed quality
- Fast calculation time

CAD


New project
Part\Design1
Back
Planes
XY
YZ
ZX
Axial plane 1
Sketches
Sketch 1
Sketch 2
Sketch 3
Sketch 4
Parts
Part 1
Features
Extrude 1
Extrude 3
Fillet 28mm
Extrude 4
Extrude 5
Revolve 1
Contour
Length
Draw a contour with lines and arcs.
Enter the value in the Length box to add a line of the given length.
[Space]: Hit Space to switch between drawing lines or arcs.
[Shift]: Hold Shift to make a line tangent to an arc.
[LMB]: Hold and drag the left mouse button to trim out a piece of a contour.
[RMB]: Exit.
Ø25
Ø12
Ø4
Base2
Fillet 0.5mm
Edges
Radius
3.2
Ø17.2
Global CS

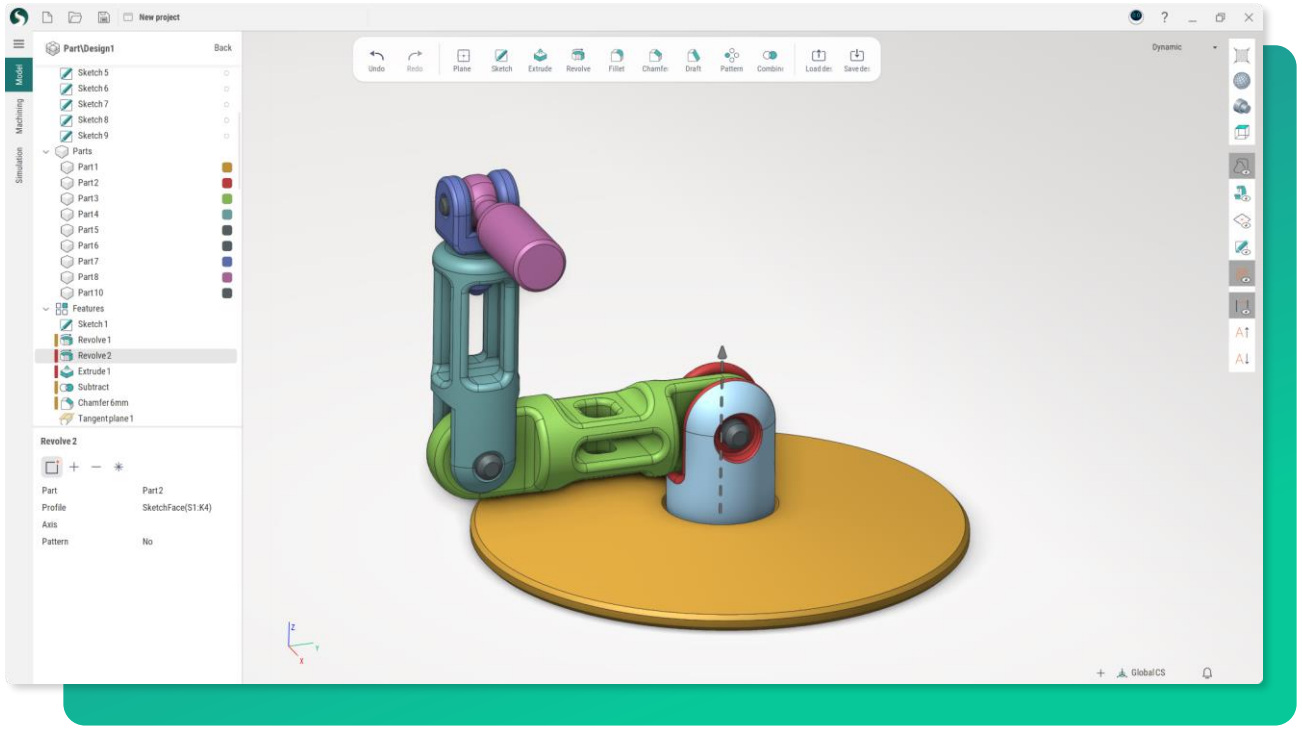
UX/UI

- UI Enhancement
- Redesign with support for HD monitors
- Streamlined workflow for new users: tool panels, tooltips
- Full-fledged model construction history: rollback position, operation reordering, operation editing
- Increased diagnostic information for users
- Improvements for multi-part modeling

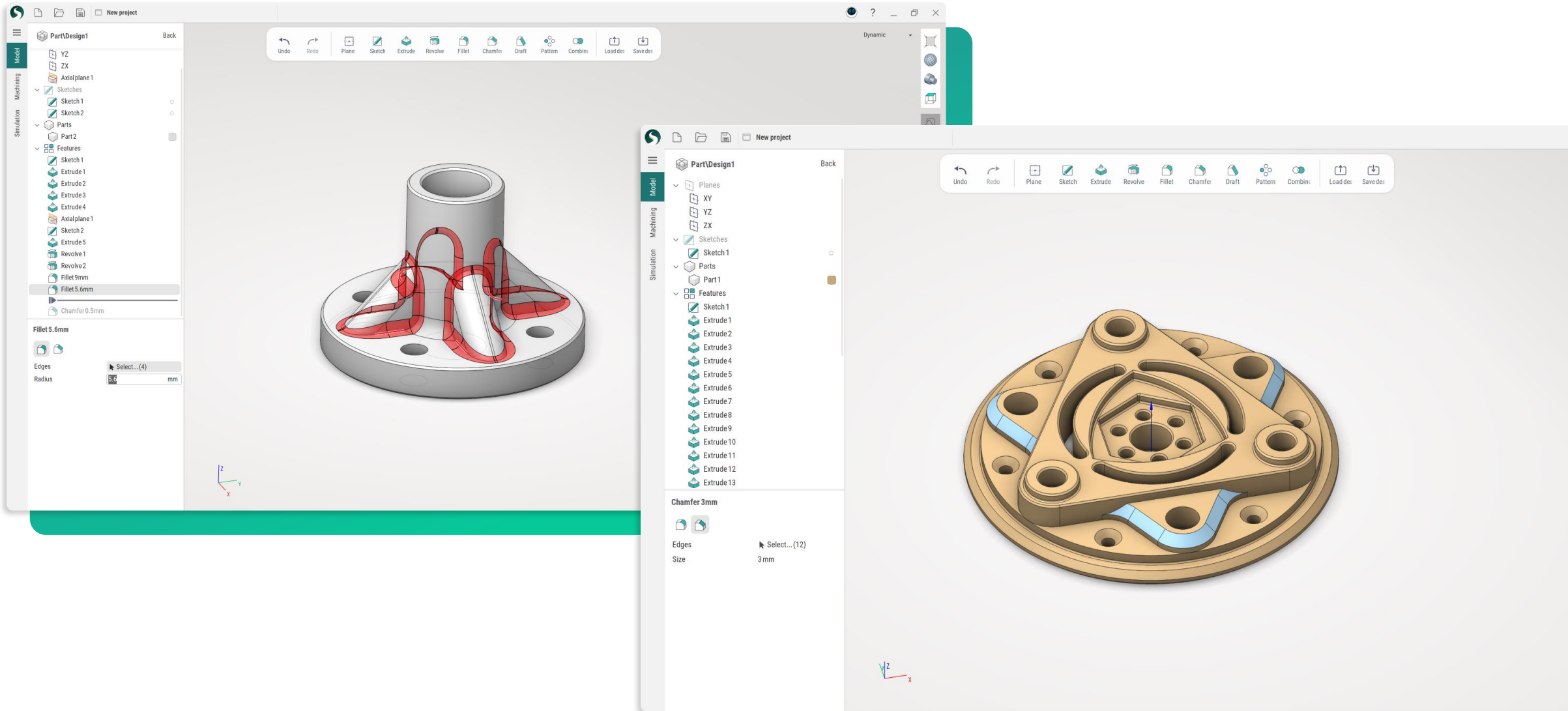


Perfomance and stability

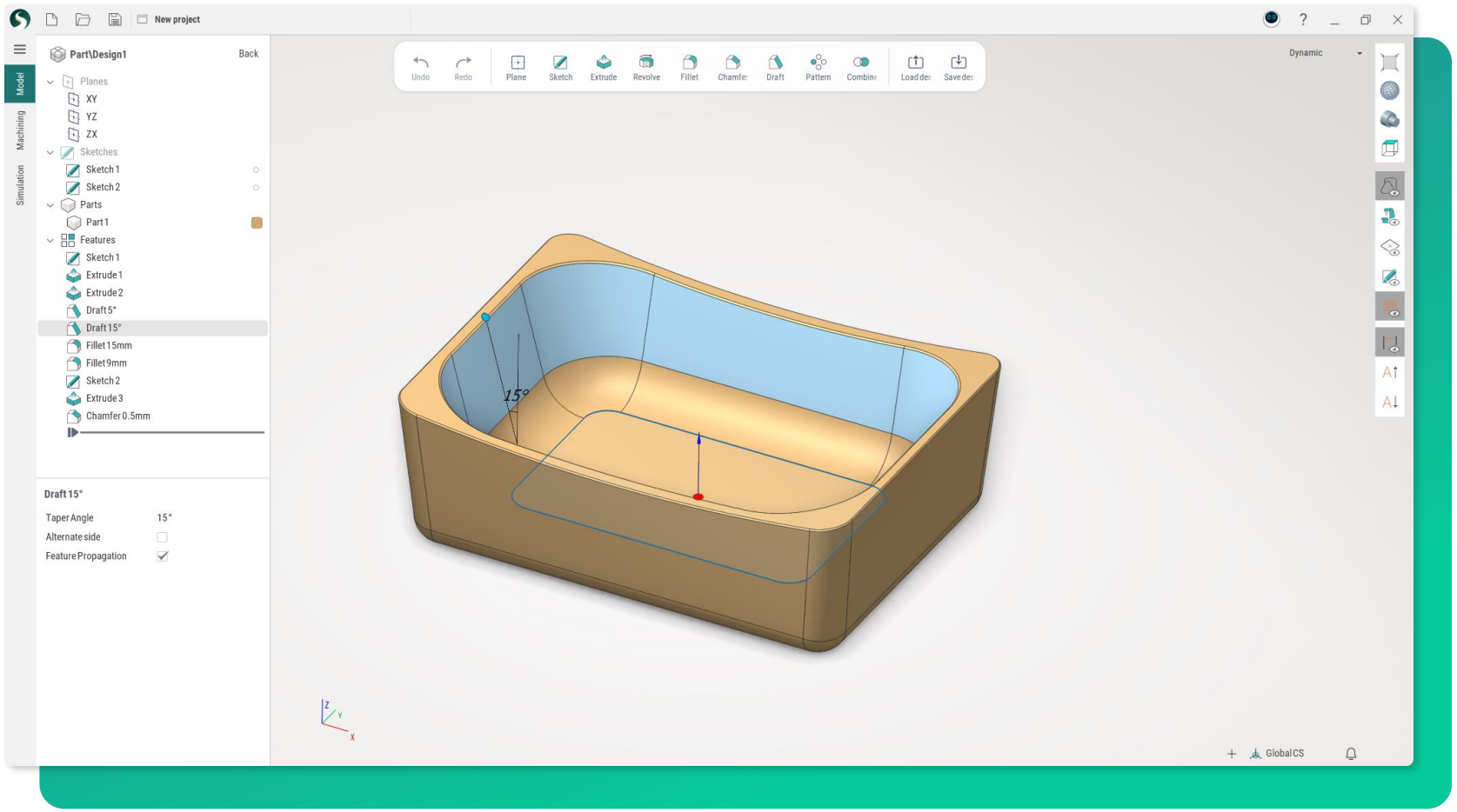
- Incremental 3D model updates
- Improved stability



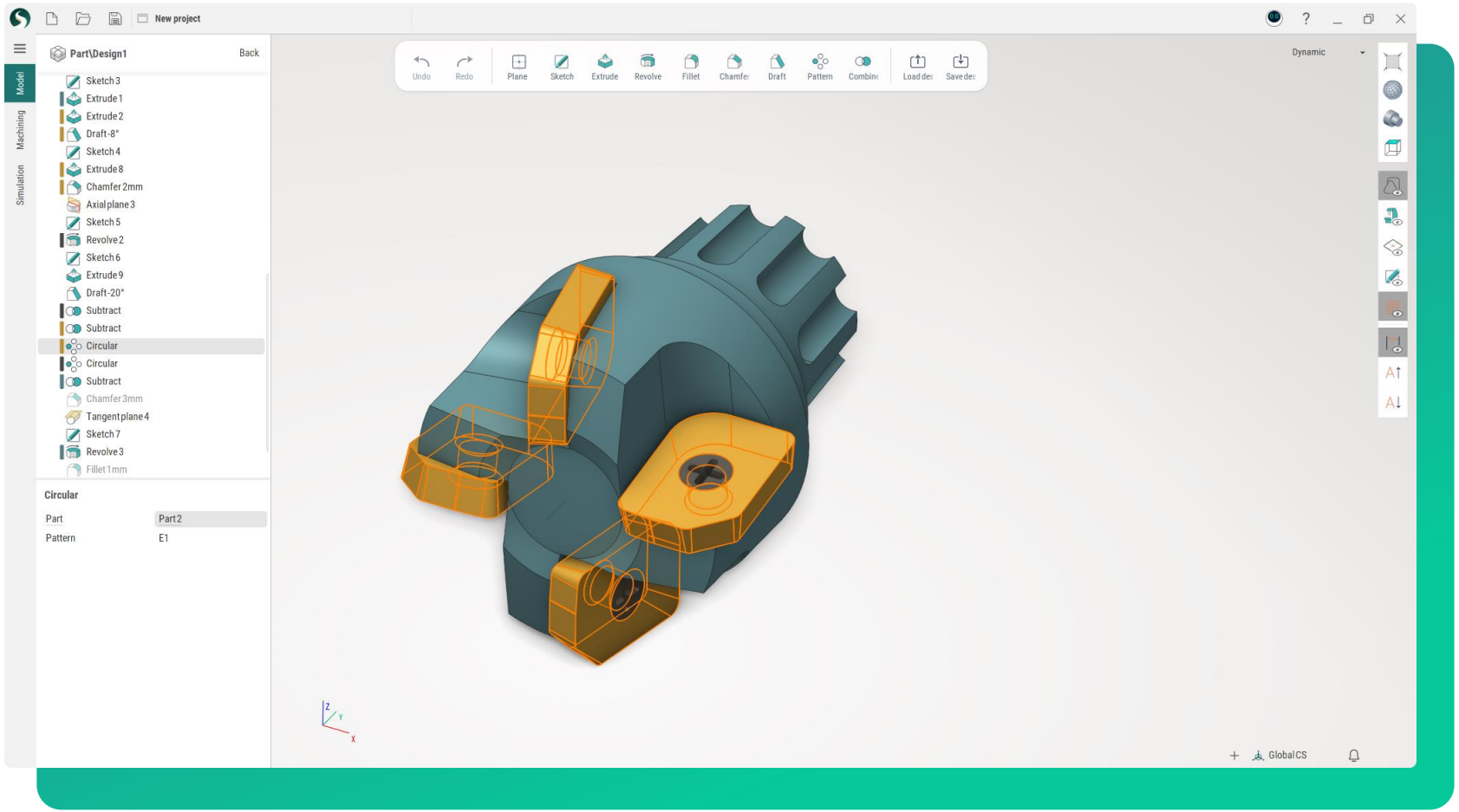
Fillets and chamfers



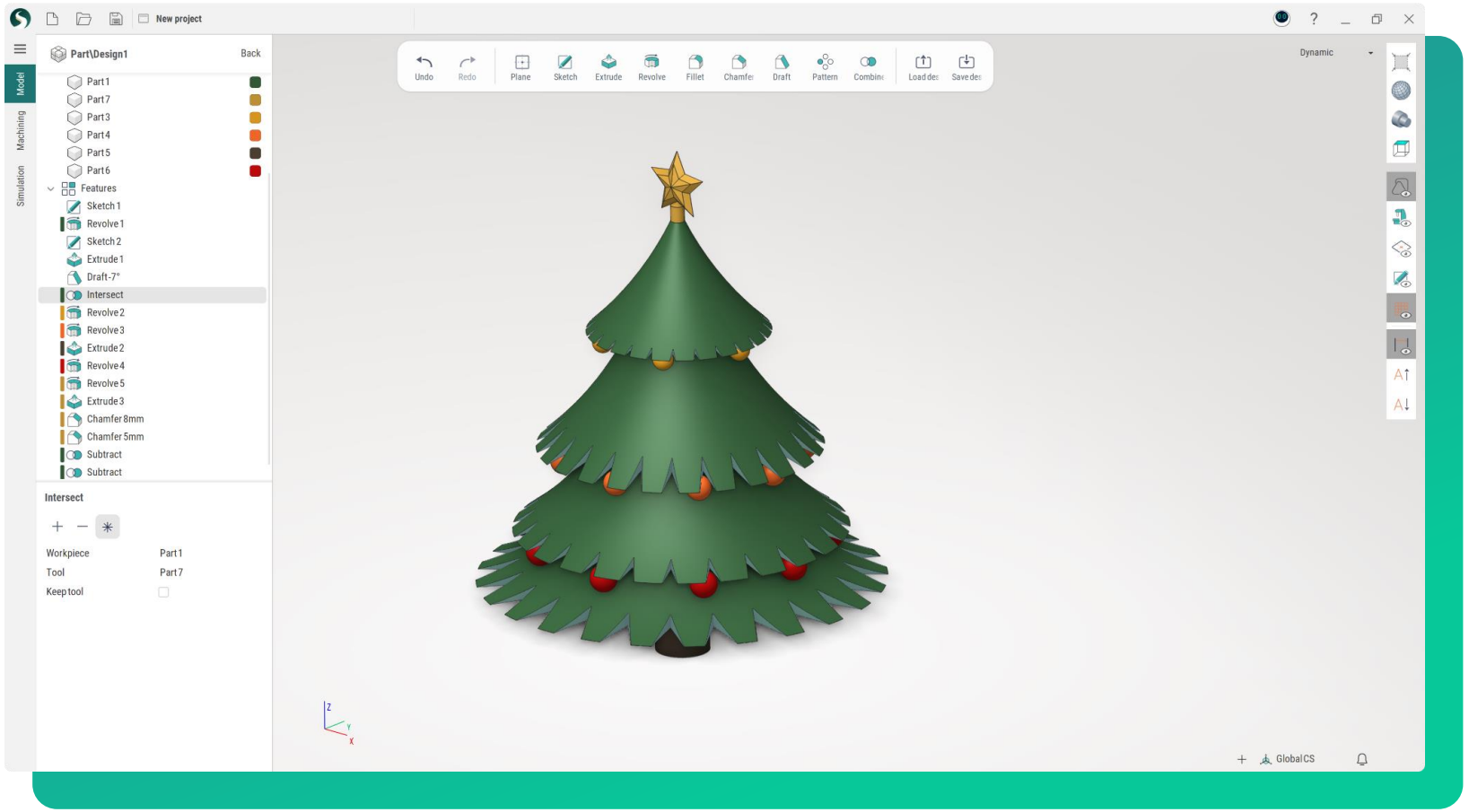
Draft


New project
Part\Design1
Back
Model
Machining
Simulation
Planes
XY
YZ
ZX
Sketches
Sketch 1
Sketch 2
Parts
Part 1
Features
Sketch 1
Extrude 1
Extrude 2
Draft 5°
Draft 15°
Fillet 15mm
Fillet 9mm
Sketch 2
Extrude 3
Chamfer 0.5mm
Undo
Redo
Plane
Sketch
Extrude
Revolve
Fillet
Chamfer
Draft
Pattern
Combine
Load des
Save des
Dynamic
15°
Draft 15°
Taper Angle
15°
Alternate side
Feature Propagation
Global CS

Pattern

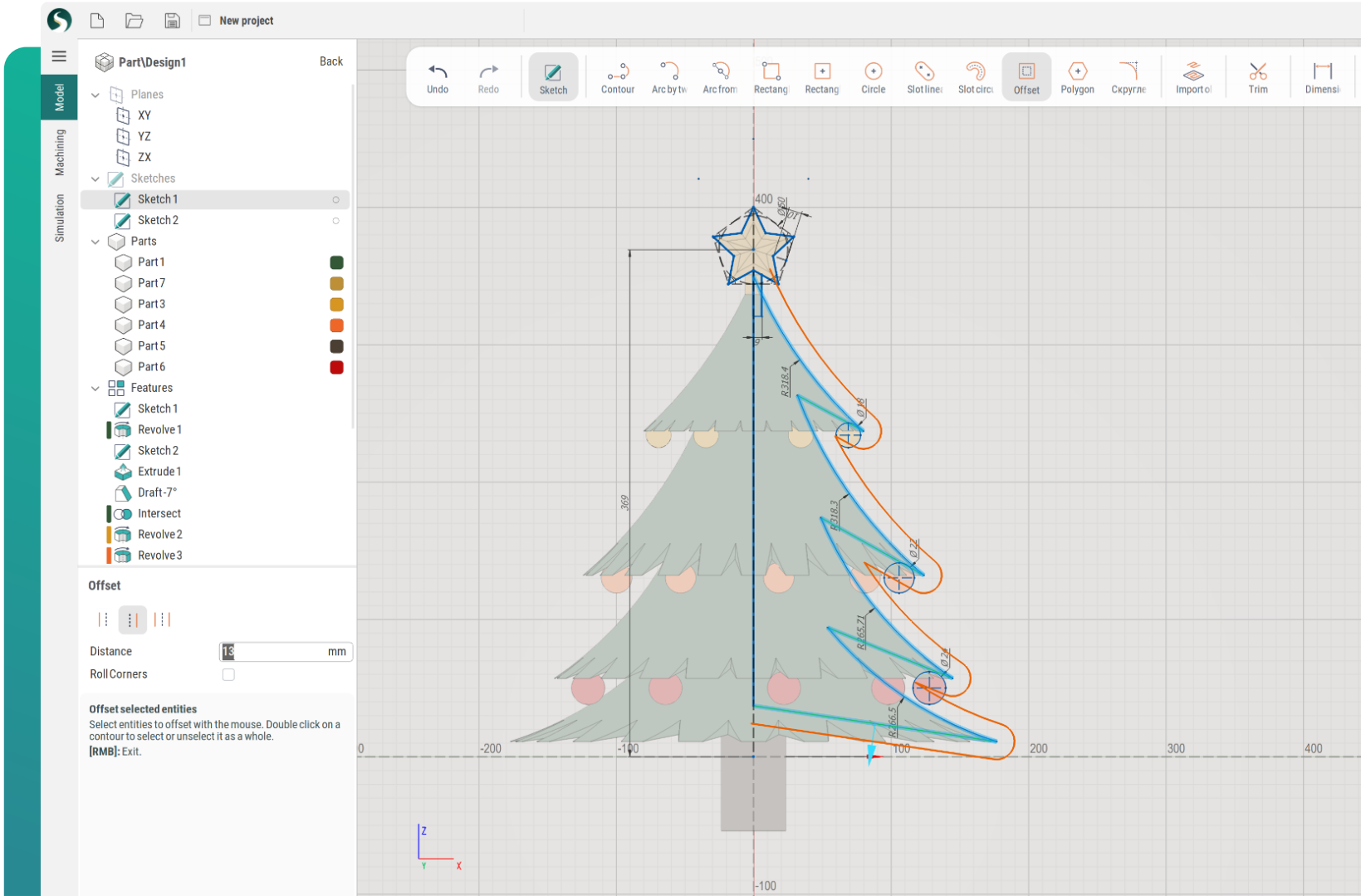

New project
Part\Design1
Back
Model
Machining
Simulation
Sketch 3
Extrude 1
Extrude 2
Draft-8°
Sketch 4
Extrude 8
Chamfer 2mm
Axial plane 3
Sketch 5
Revolve 2
Sketch 6
Extrude 9
Draft-20°
Subtract
Subtract
Circular
Circular
Subtract
Chamfer 3mm
Tangent plane 4
Sketch 7
Revolve 3
Fillet 1mm
Circular
Part
Part2
Pattern
E1
Undo
Redo
Plane
Sketch
Extrude
Revolve
Fillet
Chamfer
Draft
Pattern
Combine
Load des
Save des
Dynamic
Global CS

Combining parts using boolean operations



New sketching features

- The offset command has been separated as a standalone function
- The "Image to Trace" command has been separated as a standalone function
- Tooltips have been added for all sketching tools



Introducing SprutCAM X 17, our most powerful and functional version yet!

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