Release Notes

ESPRIT TNG 5.2

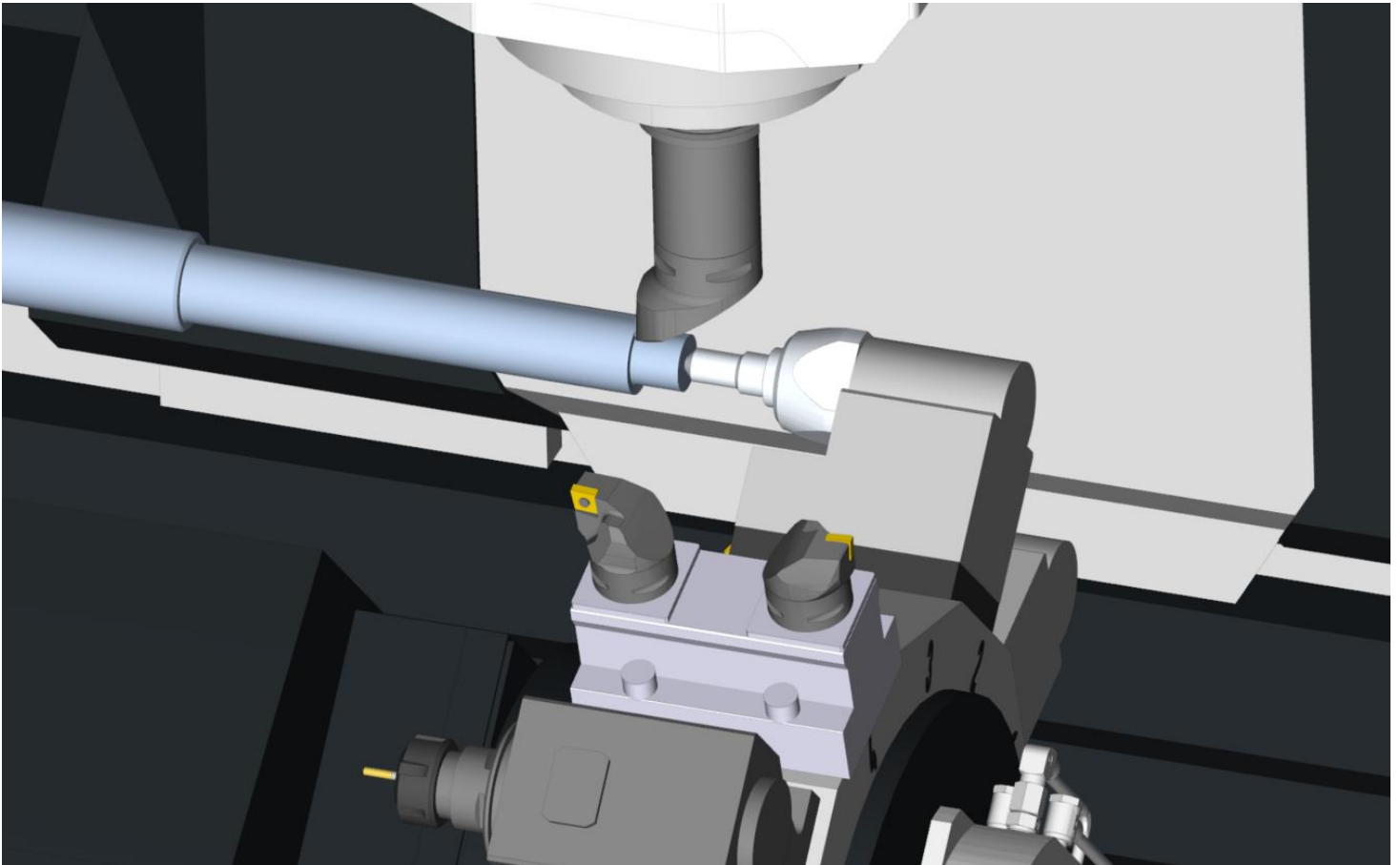### What's New ESPRIT TNG 5.2

Contents

Turret-mounted Tailstock

ESPRIT TNG 5.2 adds native support for turret-mounted tailstock, handling the tailstock like a tool assembly and using the link engine for positioning the tailstock. It simplifies the programming and dedicated keywords simplify the post implementation.


Tailstock definition

When generating tailstock GDML file, the root node of the component defines the default mounting position on the station adapter. A workpiece adapter usually at the tip of the tailstock specifies the control point for the tailstock.

Tailstock setup

Select the station to host the tailstock then right click / Add tailstock or click on add tailstock in the Tooling tab of the ribbon. Then browse to the tailstock GDML file.
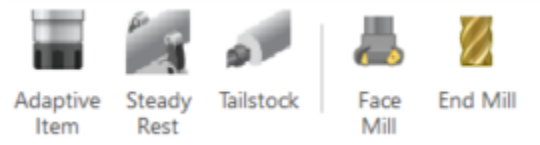
Engaging a Tailstock

A tailstock must be mounted on a turret before a tailstock operation can be created.

1. On the Turning or Milling tab, in the Support group, click Tailstock.
2. Select a Tailstock Name from the list of all tailstocks defined in Machine Setup.
3. Choose the Spindle Direction and enter the Feedrate PM.
4. If the spindle will be spinning, enter the Speed RPM.
5. Set Tailstock to Engage.
6. Set Position X, Y, Z to the target point of the tailstock (target position of the tailstock control point)
    Note: Contact with the workpiece needs to happen before the tip of the center reaches this point to validate the

contact.

7. Enter the Clearance, measured from Position X, Y, Z. The tailstock will rapid to this position, then feed the tailstock to Position X, Y, Z.
8. Enter the amount of Thrust. This is the amount of force/torque/pressure that the machine will monitor to validate contact between the tailstock and the workpiece. This amount needs to be reached anytime starting from the Clearance point and before reaching the Position X,Y,Z. Thrust is meant to be output in the NC code and is not simulated.
9. Click OK.

Disengaging a Tailstock

1. On the Turning or Milling tab, in the Support group, click Tailstock.
2. Select a Tailstock Name from the list of all tailstocks defined in Machine Setup.
3. Choose the Spindle Direction and enter the Feedrate PM.
4. If the spindle will be spinning, enter the Speed RPM.
5. Set Tailstock to Disengage.
6. Set Position X, Y, Z to the target point of the tailstock.
7. Enter the amount of Thrust and Dwell. Thrust and Dwell are meant to be output in the NC code and are not simulated.
8. Click OK.

Tailstock approach and retract

When using a tailstock mounted on a turret, the system first moves the turret to its default tool change location and indexes the turret to the station that carries the tailstock. You can change the tool change location from the program by right clicking on the station change associated to the tailstock.
Approach movement to the clearance position and retract movement away from the clearance position are both managed automatically by the link engine following the same strategies as used for approach and retract of a turret-mounted tool.

Fixture Avoidance

First introduced as a preview in 5.1, fixture avoidance is now available with Facing, Pocketing, Contouring cycles and with 3-axis FreeForm cycles. Toolpath is modified to stay away from fixtures by a specified clearance distance.
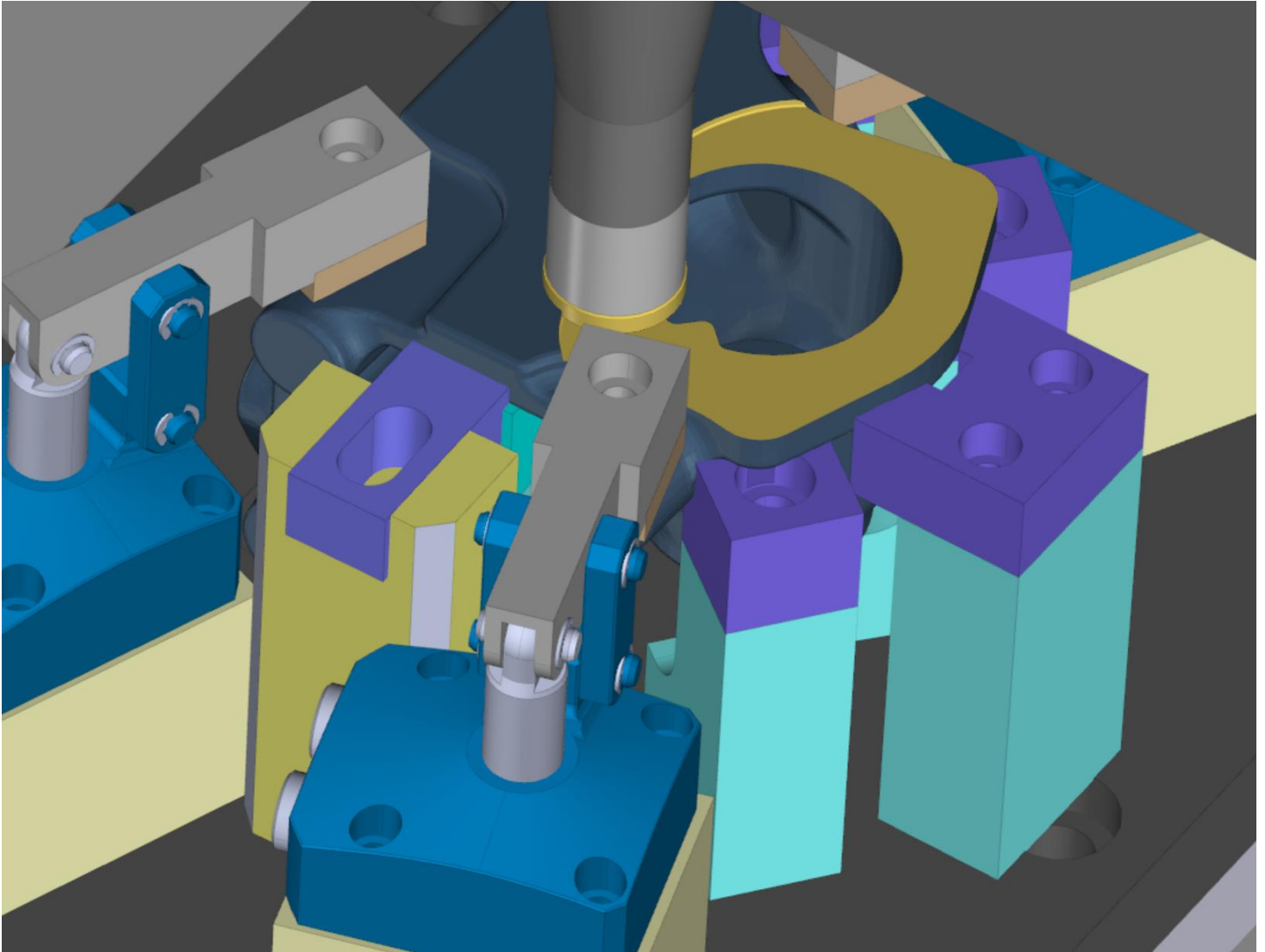
The following milling cycles support fixture avoidance:

- Facing cycle
- Pocketing
- Contouring
- FreeForm Z-Level Roughing
- FreeForm Z-Level Finishing
- FreeForm Radial Finishing
- FreeForm Spiral Finishing
- FreeForm Concentric Finishing
- FreeForm Floor Finishing
- FreeForm Global Finishing
- FreeForm Parametric Finishing
- FreeForm 3D Contouring

Note: Any 5-axis options and strategies are incompatible with fixture avoidance.

Clearance Override

The fixture avoidance keeps the tool away by a clearance distance from the fixture. By default, the clearance value is the maximum fixture clearance of the fixtures of the setup.

Set Clearance Override to specify a custom clearance for the cycle.

Setup Change Improvements

For ESPRIT TNG 5.2, Setup Change is still a Preview and needs to be turned on in File / Options / Preview.
Setup change expands its scope and capabilities with:

- Program Info per setup: The program information moves from the Home tab of the ribbon to the Machine Setup tab. Edit the machine setup or the setup change to set program number and program information associated to the edited setup.
- Split NC program per setup: A simple method to generate a NC file per setup is to use Split NC command in the Home tab (behind the command NC code).
- It is now possible to mount/unmount rotary tables, tailstock, steady rest in a new setup.
- It is now possible to use setup changes with machine with multiple tables or spindles.
- When outputting a report, the report generator separates the program per setup.
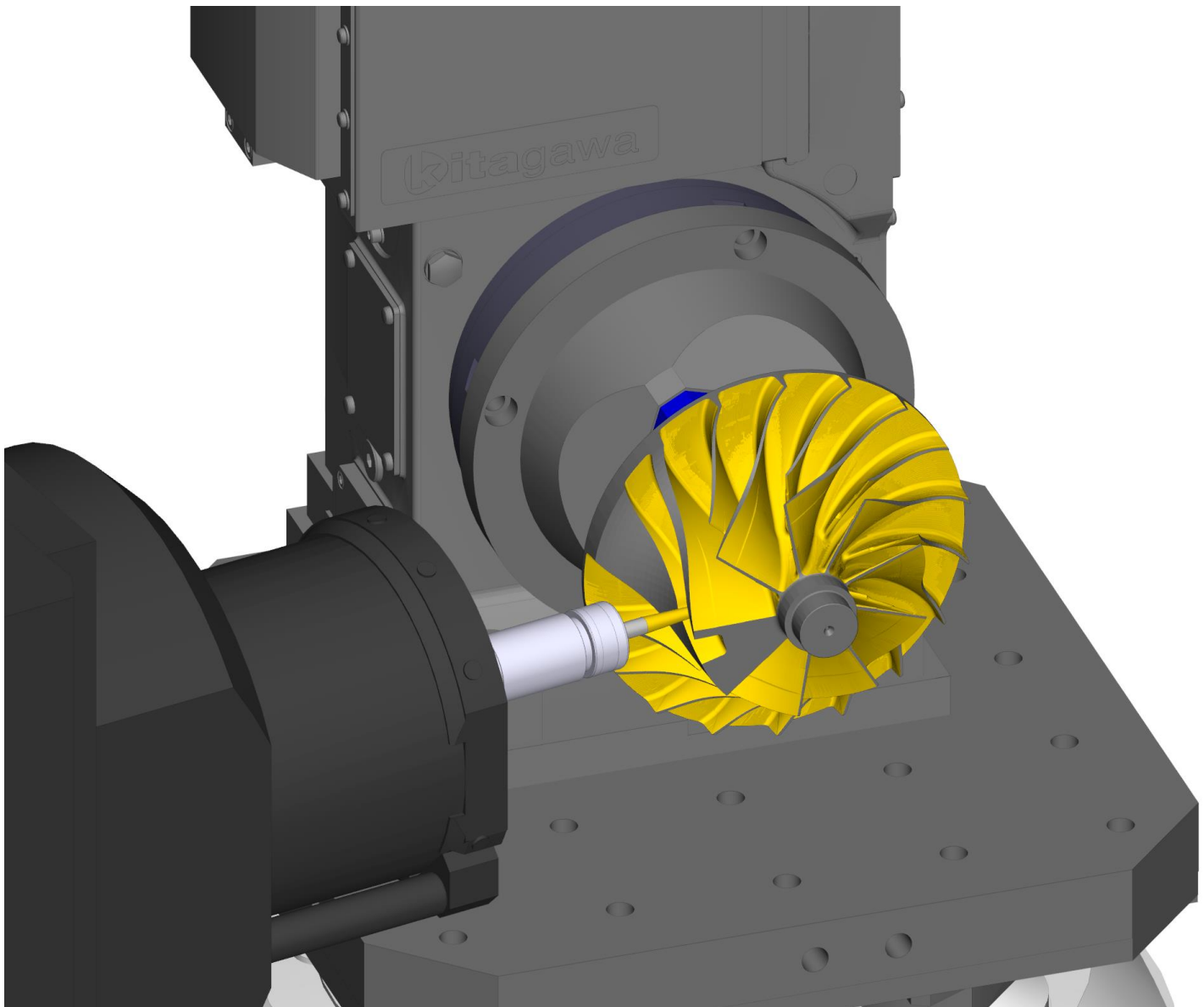
5-Axis Circle Segment Finishing

Replacing the 5-Axis Plane Finishing cycle, the new 5-Axis Circle Segment Finishing applies to a group of surfaces with single or double curvature.
This cycle is ideal for use with circle segment tooling. The Circle Segment Finishing creates parallel cut passes perpendicular to a user-defined increment direction. The cycle automatically positions the tool axis to optimize cut pass coverage on the faces grouping(s) and to avoid collisions between the tool assembly and the model.
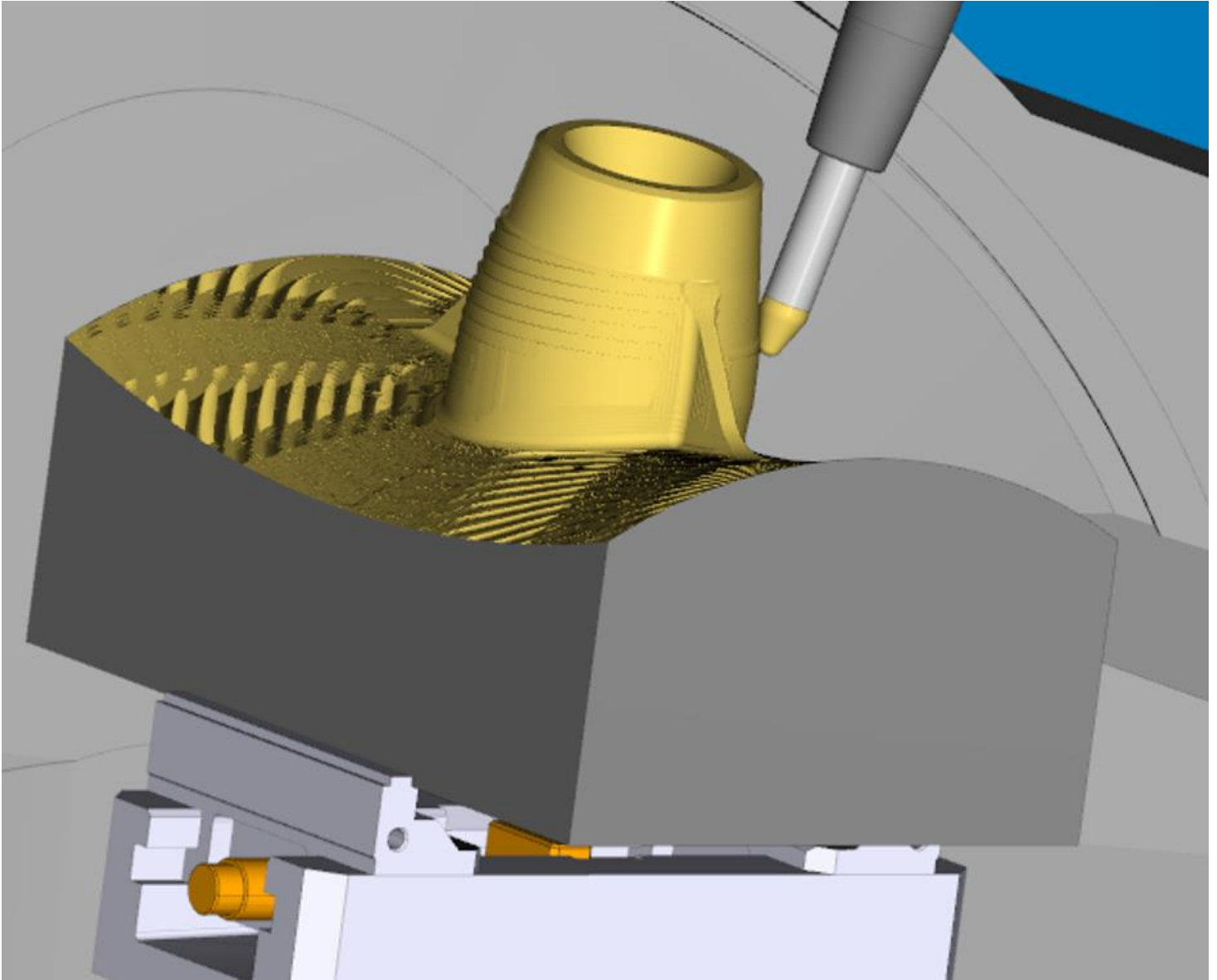
5-Axis Corner Sharpening

Within the 5-axis contouring cycle, a new option allows for tracing sharp concave corners with a tapered tool.
This option is very beneficial for engraving or for cutting the edge of a rotary tool for converting paper.
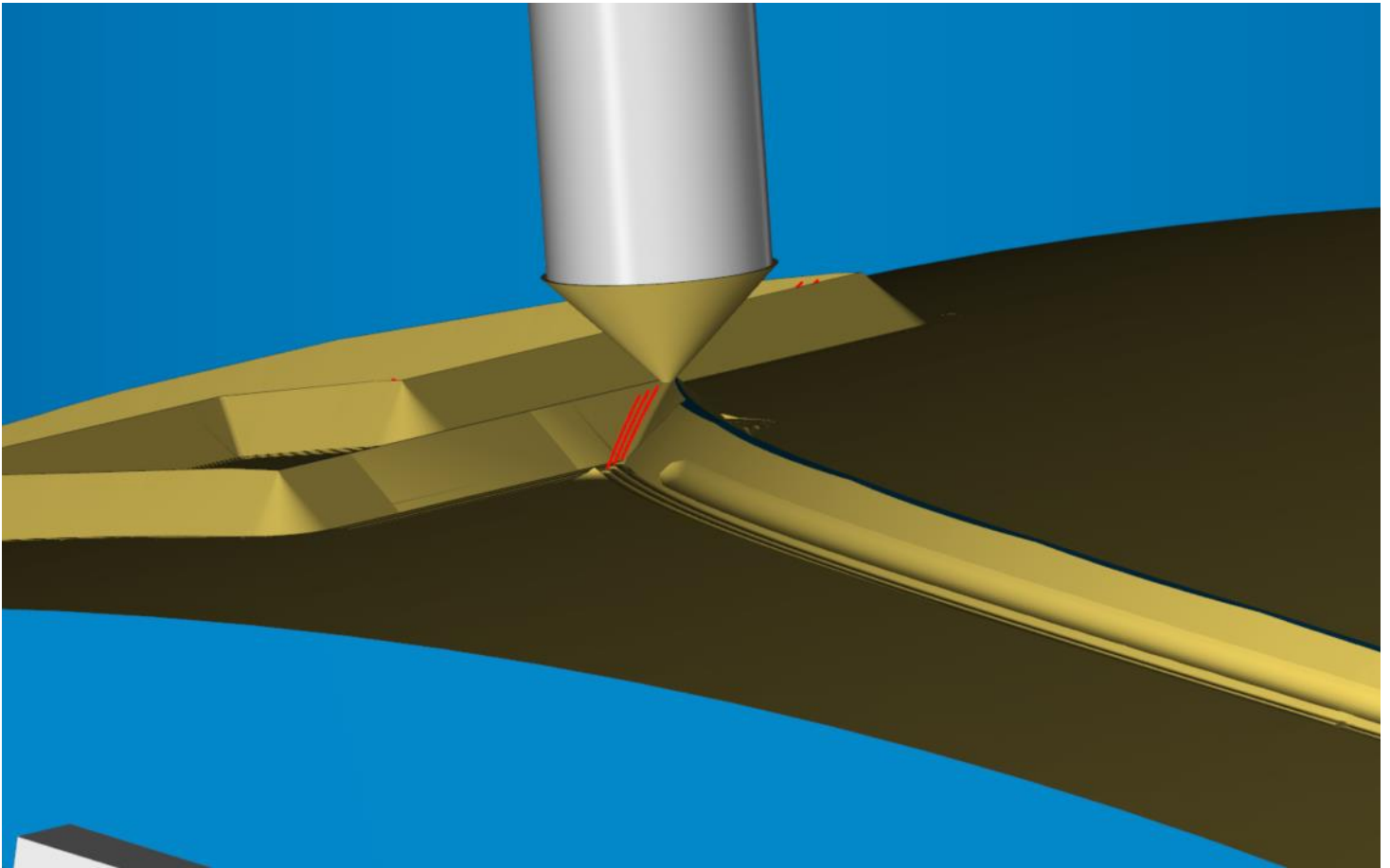
New Supported CAD Readers

- Catia V5_6R2022
- Siemens NX 2206
- PTC Creo 9

Note to post processor writers

TNG 5.2 addresses an issue with the compensation side (G41/G42) with turning operations when working on the sub spindle. Any work around previously implemented to work around the incorrect compensation side on the sub spindle would need to be removed for a good NC code output.

Enhancements and Fixes TNG 5.2 Hotfix 1 (20.502.1.22270)

Description	Issue Number(s)
Milling - Hybrid roughing violates the part	
Milling - Pocket toolpath wrong - File from TNG 4.5 opened in TNG 4.9	2016591
Milling – Profit Milling leads to tool breakage	2061295
Milling – Wrong Rotation output for Engraving	
Post – Missing XYZ Formattable affects Collinear Axis Outupt	
Post – Old PST Output C axis when there is no such axis	2100285
Post – Post processing slow or ends up in crashes	2102144
System – Possibility to Recover Damage Esprit file	2088350
Turning – .NET Framework error when selecting a tool in balanced turning	SW 283565
Turning – Tailstock Engage - Links Incorrectly Created Before and After	SW 283541
Wire EDM – Cannot switch from UNIQUA 2.x to normal AC CUT HMI	
Wire EDM – Detection context of AC CUT HMI vs AC CUT HMI UNIQUA	2054958

Enhancements and Fixes TNG 5.2 (20.502.0.22194)

Description	Issue Number(s)
CAD Exchange – Step: PMI import of this File cause ESPRIT Crash	
CAD Exchange – missing workplanes in creo files FX tree	1921307
CAD Exchange – Importing the wrong solid if PMI is switched to yes	2050525
CAD Exchange – When shaded mode is on, the part is not correctly displayed	2054958
Features – TNG R5.0 HF2 stops with Hybrid Strategy Option	2046155
Features – Feature Manager - Group of hole feature doesn't appear	
Features – STL module as Check does not work in the 3D feature	2030223
Features – Esprit TNG Crash using Flip for an Hole feature	1971494
Geometry – "remove duplicate elements" remove all circles except one by diameter, whatever position	2055077
Graphics – Graphics in Report	2039578
Installation – Server Security Manager install aborting	SW 280590
KBM – Wrap prc opened from Process Manager creates an error	2001421
KBM – Probe tools SQL Server	SW 275827
Link Calculator – Sub spindle Z axis link to tool change issue	
Link Calculator – NextGen Link Issues	
Link Calculator – C position missing when C=0.	
Link Calculator – Between operations Rotate to RTCP with Rotate Approach	
Link Calculator – NextGen Links first approach before they rotate the spindle	
Link Calculator – Links between operations alarm on 3x machine.	
Link Calculator – link Calculation error	2077723
Link Calculator – Red Links after Rebuild with problem on rotation	
Link Calculator – Try Recover 5 incorrect	
Link Calculator – NC code incorrect when milling at nonzero C with master channel = other channel and no WOT	
Link Calculator – Sub spindle collinear axis position incorrect in ex_LInk_Rapid_Home	
Link Calculator – DMGMORI Toolchangeposition " Position" crash machine because of wrong coordinatesystem	02052344
Modeling – Extrude/Draft surface does not work for Circular Chain	2049554
Modeling – Unable to escape/exit Skin creation. Must follow through	
Modeling – Knitted 4 border surface not smooth as in Esprit 20XX	2047060

Description	Issue Number(s)
MultiChannel – Difficult to understand steady rest behavior	SW 276121
Post – Attributing motion to the correct collinear axis	
Post – Pickup/Release dwells missing when a probe tool is used just prior	
Post – Rotary axis clamping clamps unused axes	
Post – Post Bug: different CL result running from the ribbon bar / Selecting whole operations	2047409
Post – Missing unclamp before Turning operation	
Post – WorkPlaneCode does not output correct Plane Call	
Post – Park leads to wrong rotary axis output for ALL rotaries in the head	
Post – New Cycle 5x plane finishing is not supported by cycleclass	02055095
Post – False movement detected error	
Post – CycleClass incorrect for custom cycles	
Post – Ex_ToolDefinition incomplete on post pass 2 with ByNumber order	
Post – Transfer setup change bad in NC when only partial program output	272591
Post – Wrong NC output - machine must be reloaded to force a NC code update	2080251
Setup – Unable to access Update Work Offset in Probe operation after setup change.	SW 279527
Setup – Setup Change - suppress setup change and recreate cannot unsuppress operations	
Setup – Bad Optimize Sorting	SW 281041
Setup – R5.2 RTM_Blocking - red links for the second set-up if you switch to another machine	2075219
Simulation – Hole Location not on Center	SW 277837
Simulation – Links error on the tool change for operations created on the subspindle	2073382
Simulation – Simulation Crash or Unclassified simulation error encountered	SW 280664
Simulation – Crash of the system changing the set up during the simulation	2082067
Simulation – Tool Orientation wrong in the simulation, different from the preview - Mini Boring Tool	2001783
Simulation – Stock Contacting Machine Base causes crash when starting Simulation Mid-Program	
Simulation – Unclassified simulation error, running the whole simulation on the transfer	2030194
Simulation – Cannot create a pickup operation -	2039293
Simulation – False Collison with Machining Strategy 'Tool and Part Spinning'	SW 276055
Simulation – Error Stock Update drilling cycle: the final link of the path is in error	2051350
Simulation – WO does not get updated when changing Pickup point in production mode	
Simulation – BUG: Error Spiral toolpath displayed	2042368
Simulation – Simulation bug, spiraling cycle on the radius	2060393
Simulation – wrong stock returned at the end of the simulation	2055173
Simulation – Selected stock has disconnected components	
Simulation – Steady rest machine position is incorrect	
System – Report generator: missing all picture if the file name includes Japanese Characters	2021106
System – Can't populate table cell error	
System – Regression: in NT1000 with Sub-spindle basculating, rotary solutions are wrong	2035614
System – System Crash after rebuilding Profit Facing Stock Auto	2052986
System – Crash System: Creating a Profit Facing cycle with Stock automation to Yes only for SolidWorks Parts	2058150
Tooling – Cannot create operation reports due to error when unmounted elements are present	SW 276975

Description	Issue Number(s)
Tooling – Can't create a tool without a machine - Default template	2055725
Tooling – Change Tool ID crash	SW 276040
Toolpath 3axis – Collision check does not work for Z level Finishing	2063539
Toolpath 5axis – Incorrect rotary motion	
Toolpath 5axis – default Full Clearance and Clearance values for Mill 5ax Spiral Roughing is Metric in Inch file	SW 277745
Toolpath Milling – TNG crashes as soon as we switch stock automation to YES with pocket operation	2057786
Toolpath Milling – simulation and stock automation return wrong toolpath due to NC compensation	2061782
Toolpath Milling – Thread milling with G41 not possible	2050975
Toolpath Milling – Total Depth on Drilling Page not updated automatically	SW 270568
Toolpath Milling – BUG: Part Violation with Spiraling Cycle	1984974
Toolpath Milling – 3 rotary axes, cannot each orientation	2078531
Toolpath Turning – Wrong connection between passes	2060497
Toolpath Turning – Lathe contour, Validation Check for Lead-In/Out when Cutter Compensation NC is set to Yes	2088187
UI-UX – System default of Workoffset transformation is always activated - Regression to 4.8	02063514
UI-UX – Cannot Drag Drop operation	SW 276144
UI-UX – Split Output for Multiple Setups	SW 279398
UI-UX – Engraving Cycle - Wrap operation and hidden field "Polar Interpolation"	2056532
UI-UX – Drag/Drop operations EDM	SW 278734
WEDM – XStart and YStart System Variables not accounting for Machine Mounting	
WEDM – Wire EDM :: SODICK technology :: Invalid Cut Data Expressions Override from legacy PRC files	