NCG CAM

NCG CAM Solutions Ltd.

NCG CAM V12.0

Core Roughing Horizontal Areas

Tool Size Guide

Ruled Surfaces

Add the Ability to Machine Selected Surfaces

Stock Models Created from Multiple Axis Toolpaths

Image courtesy of LTH Castings, Slovenia

New Features for NCG CAM V12

![NCG CAM Solutions Ltd.]

NCG CAM New Features V12– Base Module

Different XY to Z Thickness for Ball-nosed Cutters

This new feature can be used in instances where the user wants to use a ball-nosed cutter and have a negative thickness in X & Y, but not in Z, or where the negative thickness is greater than the corner radius.
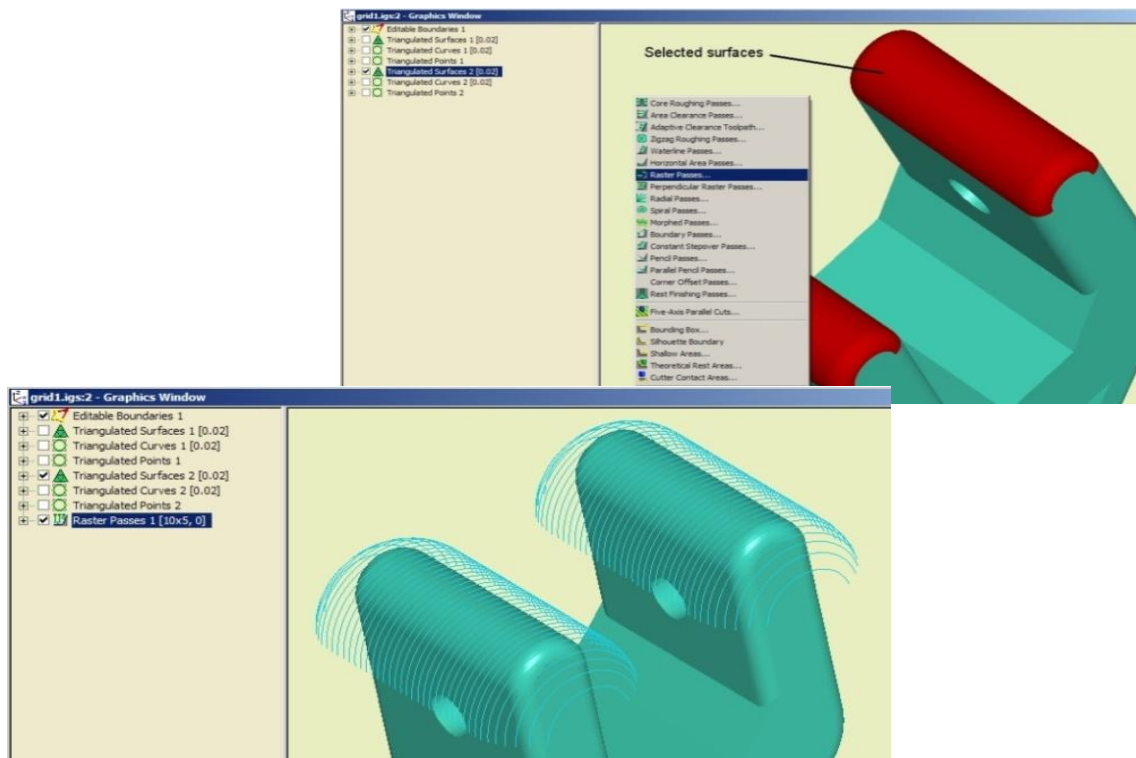
Use Double Precision Storage in Database Files

This will not be visually obvious to the user like most features, as it is how surfaces, boundaries and toolpaths are stored in the database.

Storing data in double precision will allow for greater accuracy on larger jobs (typically those larger than 1000mm) and if working a long way from the part origin, but also on smaller part close to the origin where extremely tight tolerances (<0.001mm) are required.
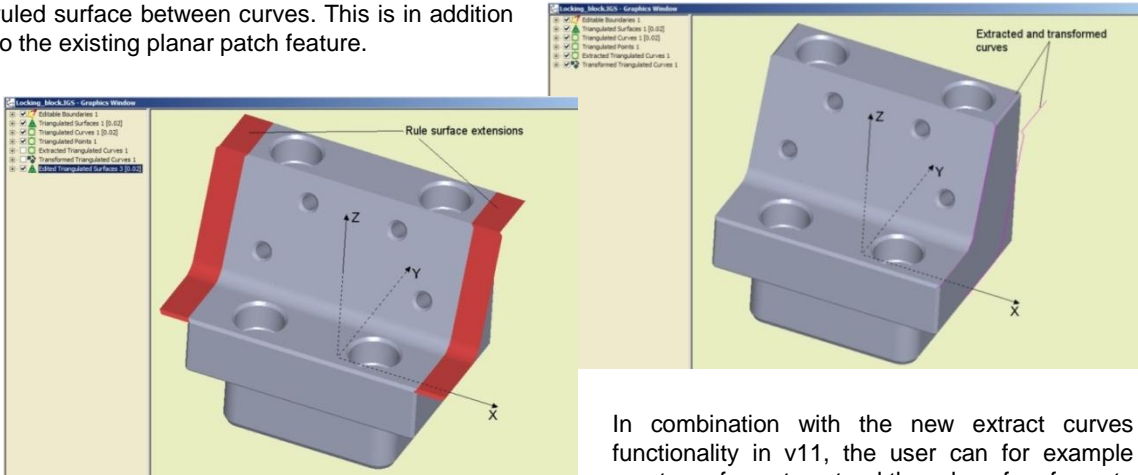
Added the Ability to Machine Selected Surfaces

This new functionality will allow the user to select the individual surfaces to machine and then set the machine selected surfaces option, to machine to the surfaces very edge, without the need to create a boundary first.

This new feature will allow the user to generate a ruled surface between curves. This is in addition to the existing planar patch feature.
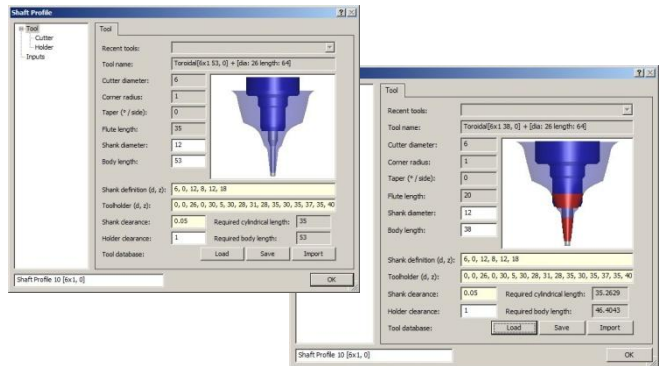

In combination with the new extract curves functionality in v11, the user can for example create surfaces to extend the edge of surfaces to machine past the real surfaces edge.
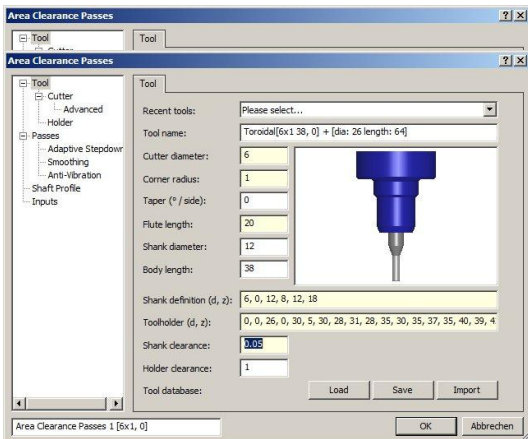
Shaft Profile Analysis

Defining the correct tool shape and holder will ensure the toolpaths are gouge free, but it can result in material being left on the part.

The shaft profile allows a different approach – what cutter and holder will 'fit' best. The user is able to try different cutter shanks and holder combinations after creating the toolpath. The shaft profile provides a graphical view, of the required body and cylindrical lengths of the cutter.

The shaft profile now checks a tapered shank section of the tool in addition to the holder, and shows the area where the tool could gouge.
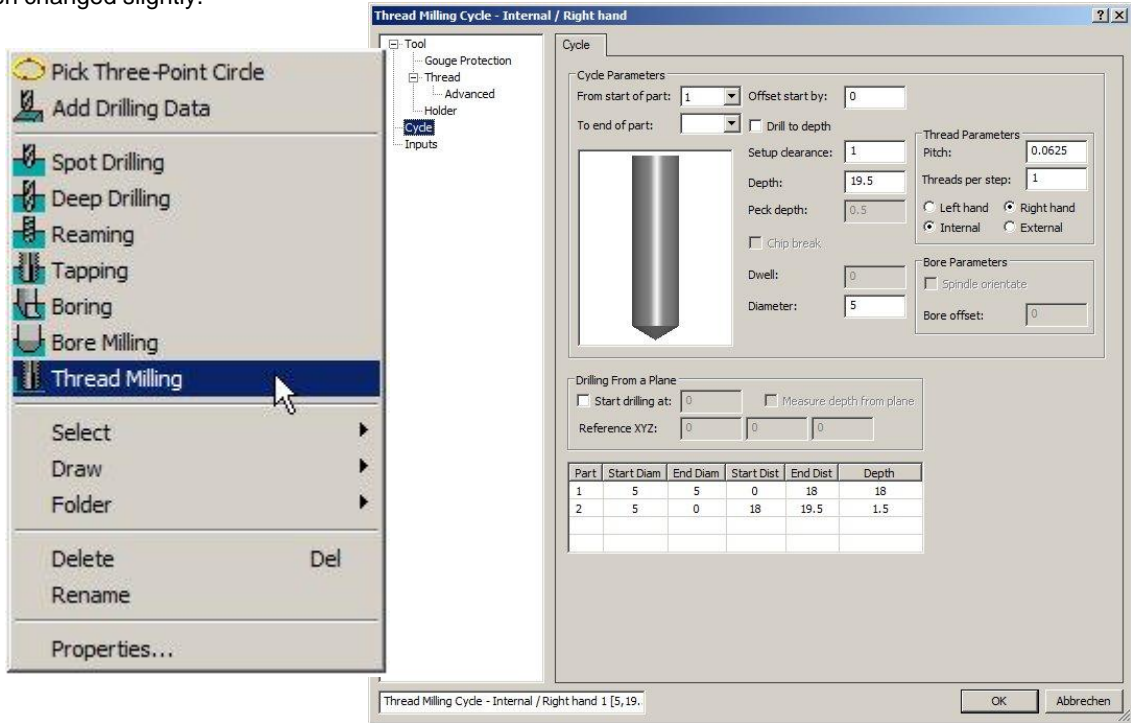

Cutter Shank Clearance

This new enhancement allows the user to define a clearance for the shank of the cutter in a similar way to the tool holder clearance.

This will make it possible to machine without having the shank rubbing on existing machining.
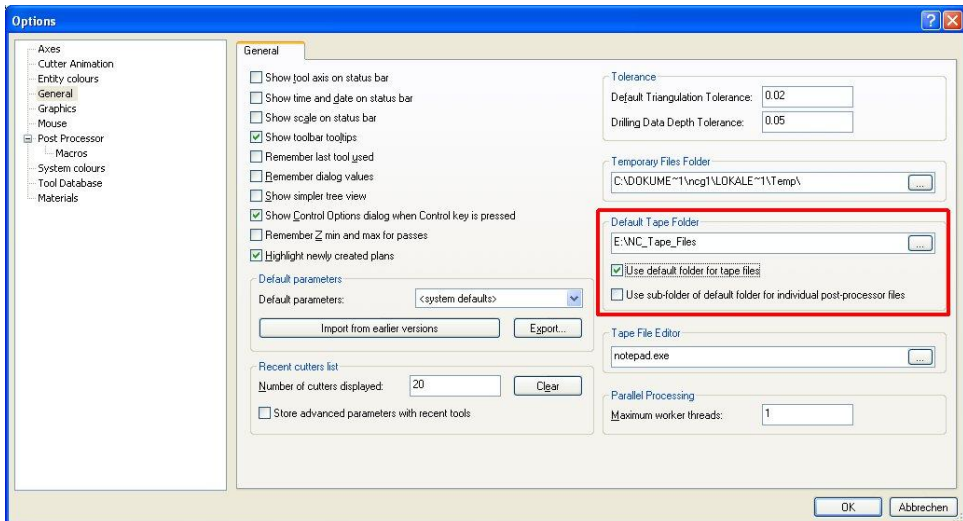
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Thread Milling

This new feature allows the user to create a thread milling cycle. The canned cycles menu and dialog has been changed slightly.
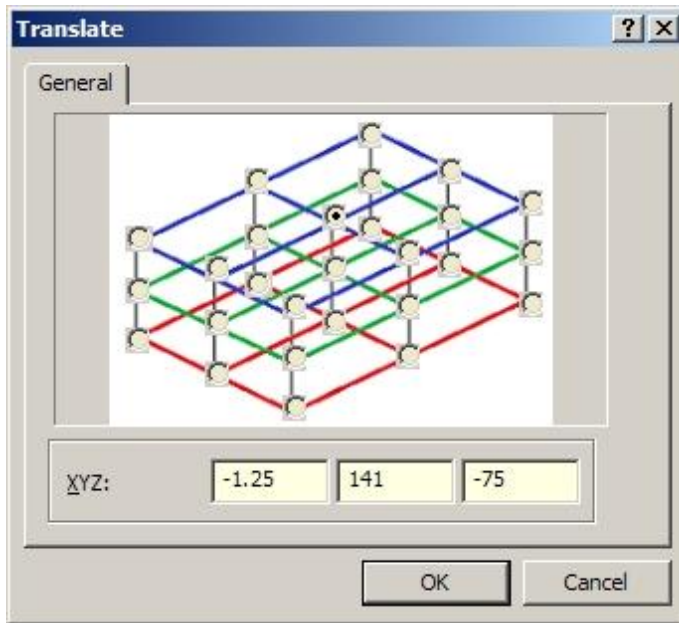

Central Folder for Tape Files

This new feature allows the user to define a global folder for tape files when post-processing.

This will save some users from having to pick the folder on each job. This will benefit users who always post their NC tape files to the same folder, or machine folder.

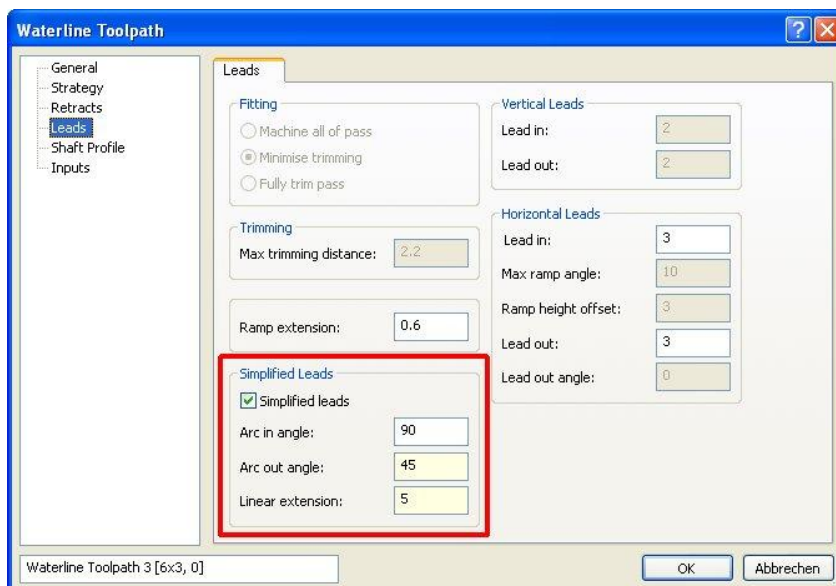## Setting the Datum Based on the Min, Center or Max of the Surfaces

This enhancement allows the user to pick min, center or max position from graphical image rather than typing mx() cy() Mz() making it more user friendly.
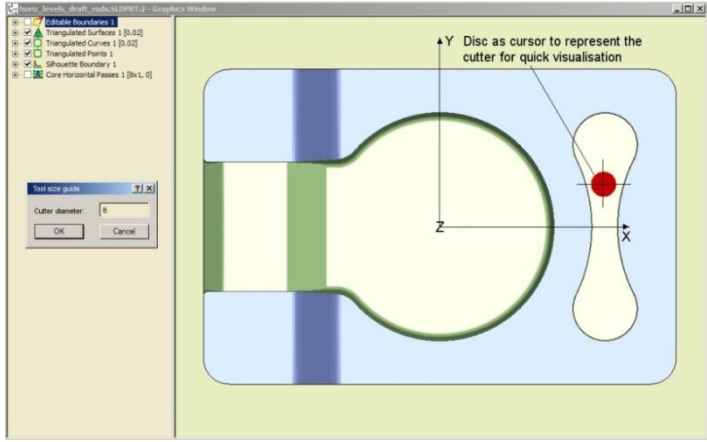
Picking the required position in the image will automatically update the XYZ coordinates with the correct values to position that part of the model at X0 Y0 Z0.

Simplified Lead Moves & Elongated Leads for Waterline Passes

This enhancement provides the user with more control over the horizontal lead-in and lead-out arcs. This should be beneficial for waterline passes, where a large step-down is used, as the toolpath will not helix down the side of the job.
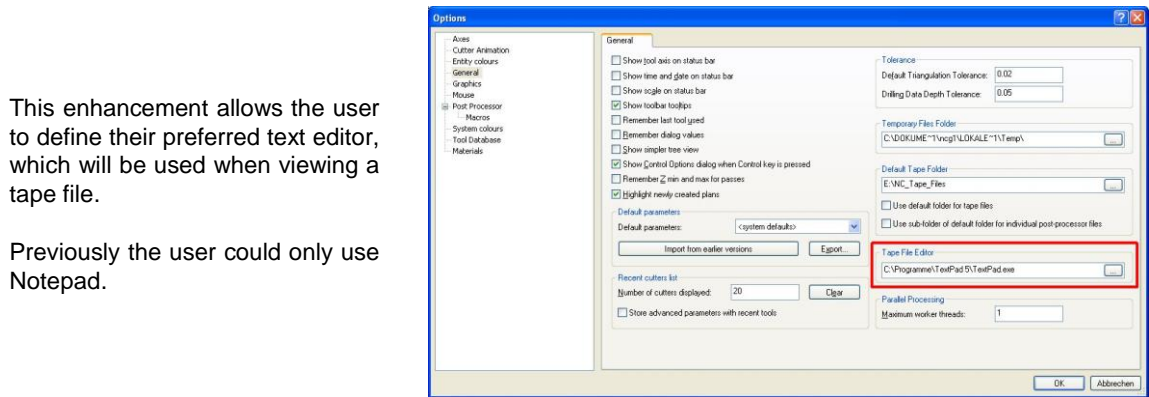
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Tool Size Guide

This new feature allows the user to define a circle or a disk the size of the cutter, that will move with the cursor when looking down the tool axis.

This should allow the user to determine where a particular cutter diameter can get, without having to create the passes or do a lot of measuring. It can also help when creating boundaries with mouse hits for a particular cutter size.
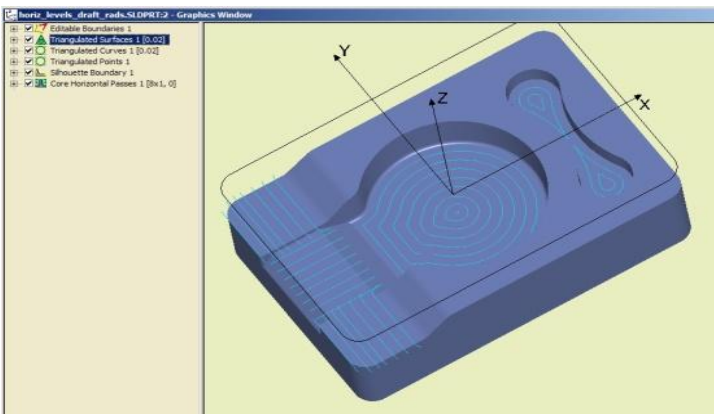
User Defined Text Editor

This enhancement allows the user to define their preferred text editor, which will be used when viewing a tape file.

Previously the user could only use Notepad.
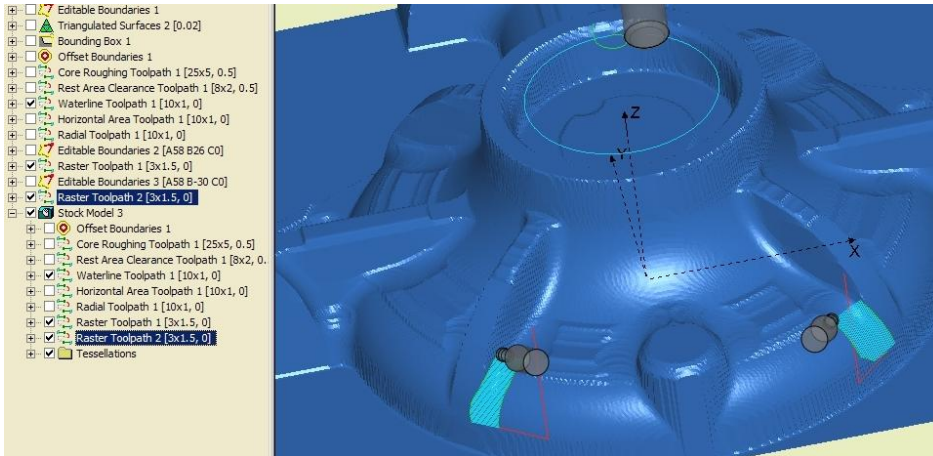
Core Horizontal Area Passes

This new feature will allow users to machine horizontal areas plunging off the job and then milling in from the side. In certain materials, such as Inconel (a nickel-chromium-based superalloy) and many other steels after heat treatment, machining in from the side will give far better tool life.

Stock Models Created from Multiple Axis Toolpaths

Users are now able to make a single stock model from toolpaths with multiple tool axis, (not just single tool axis), which will enable the user to visualise what the user has or has not machined with a combination of 3+2 and / or 5-axis toolpaths.

The same stock model could also be used for rest roughing after a number of machining operations with different tool axes or to edit other toolpaths too.
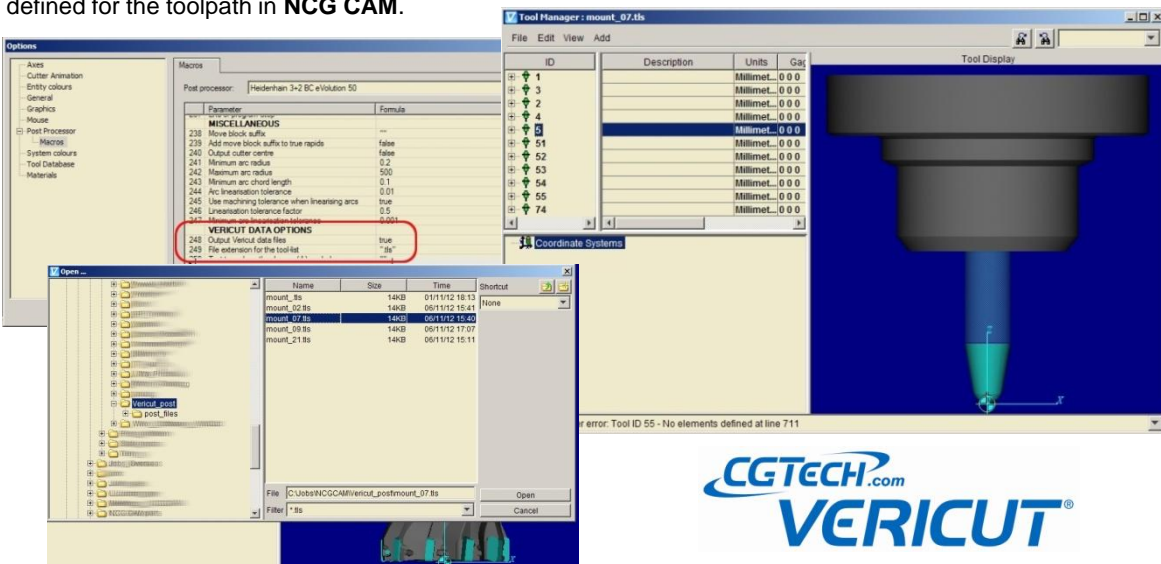

VERICUT Tool List Creator

A new feature has been added in the **NCG CAM** post-processors, for users that use VERICUT™ to double check their NC Tape Files for potential problems where a tilted axis could cause a collision between machine parts.

It is now possible to set an option in the post processor options that will create a tool list (*.tls) for the post processed operations.

Once VERICUT™ is started that file can be loaded, defining the cutter and tool holder based on what was defined for the toolpath in **NCG CAM**.

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