



MIC 2022

Why ModuleWorks? Why now?

Craig Chester
Product Manager – Fusion Manufacturing



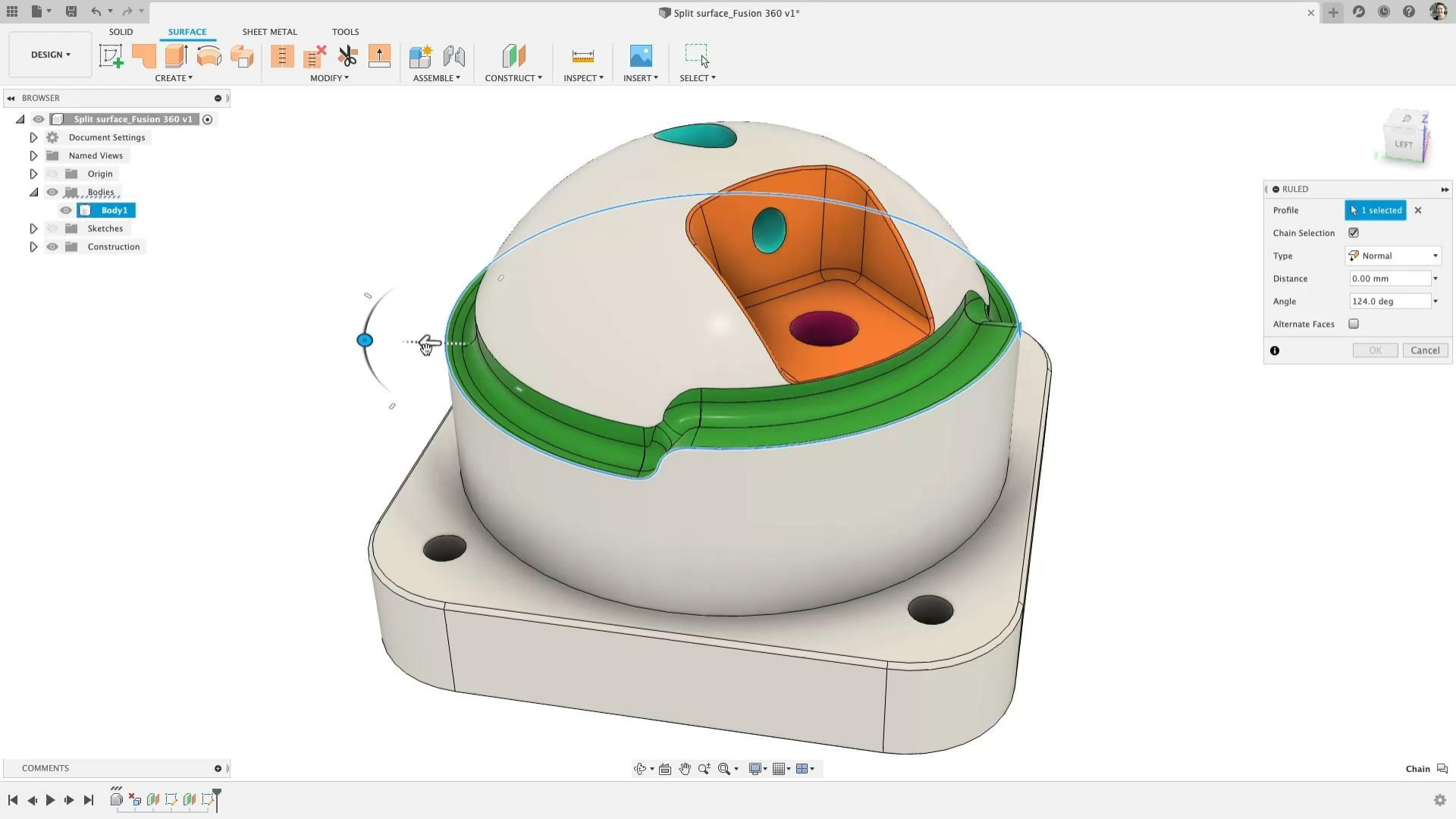
Agenda

- 1 What is Fusion 360?
- 2 Cloud based collaboration
- 3 Integrating manufacturing technology
- 4 Why ModuleWorks, why now?

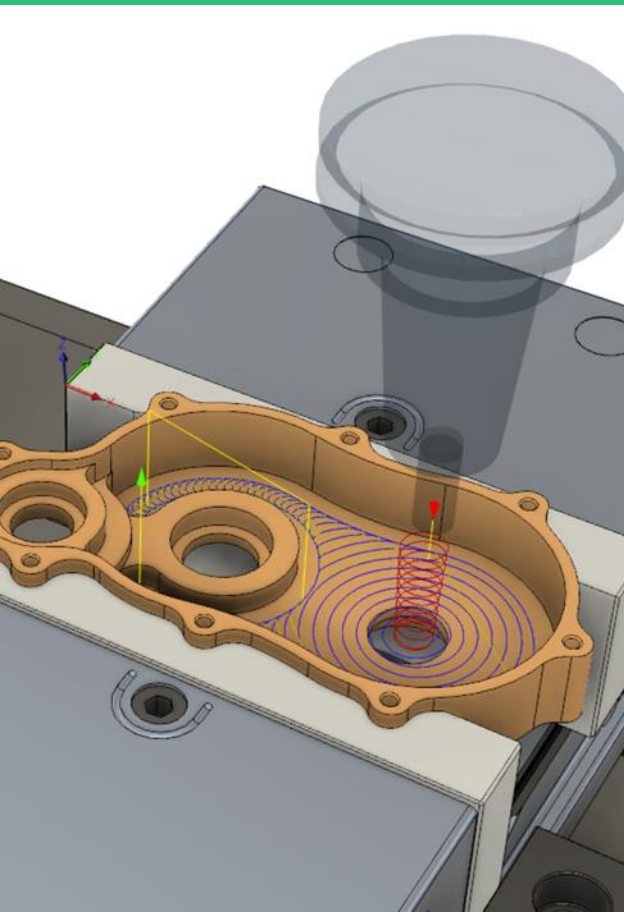


A photograph of two women in a modern office environment. They are seated at a white desk, looking at a laptop. The woman on the left is wearing a maroon shirt and has her hand on her chin, while the woman on the right is wearing a black blazer. In the background, there are three hanging light bulbs and a blurred office space.

What is Fusion 360?



Integrated



Collaborative



Accessible





This presentation will focus on the Milling workspace of Fusion 360



Cloud-based collaboration

Collaborative

- Communicate faster
- With designers, engineers, and machine operators



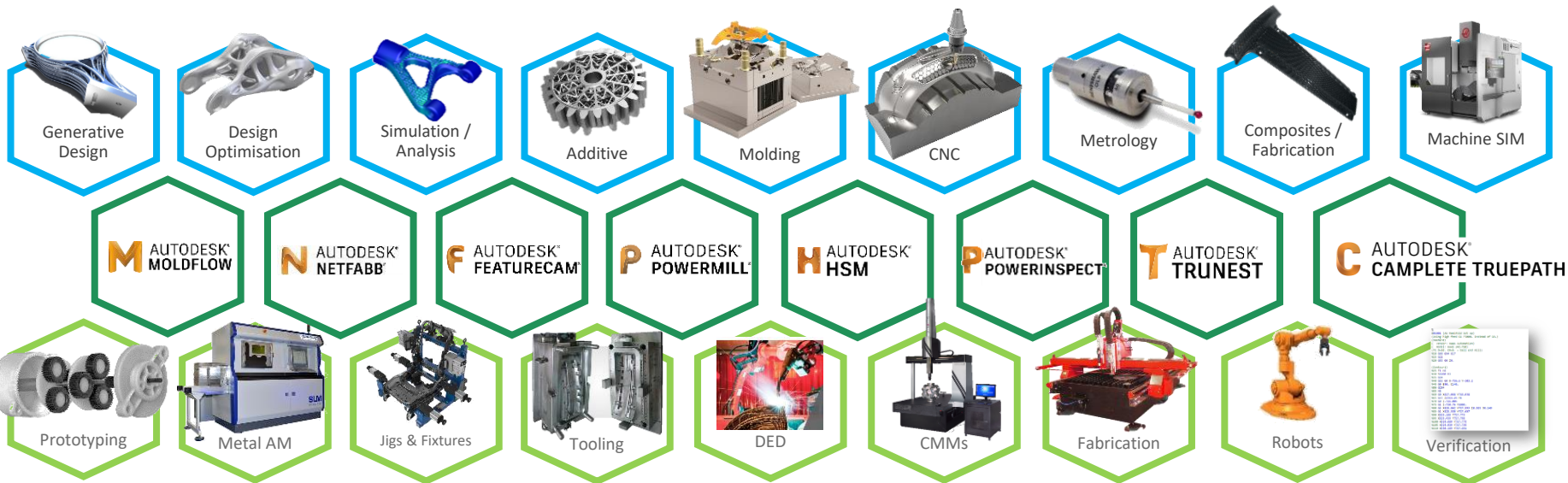


Integrating technology

Manufacturing Workspace

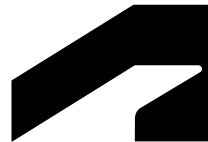


Integration of industry leading manufacturing technology





OK... So why
 ModuleWorks ?
Why now?



02-24-2022, 07:13 PM

#13

gregormarwick ◉
Diamond

Join Date: Feb 2007
Location: Aberdeen, UK
Posts: 4,934

Post Thanks / Like ◉

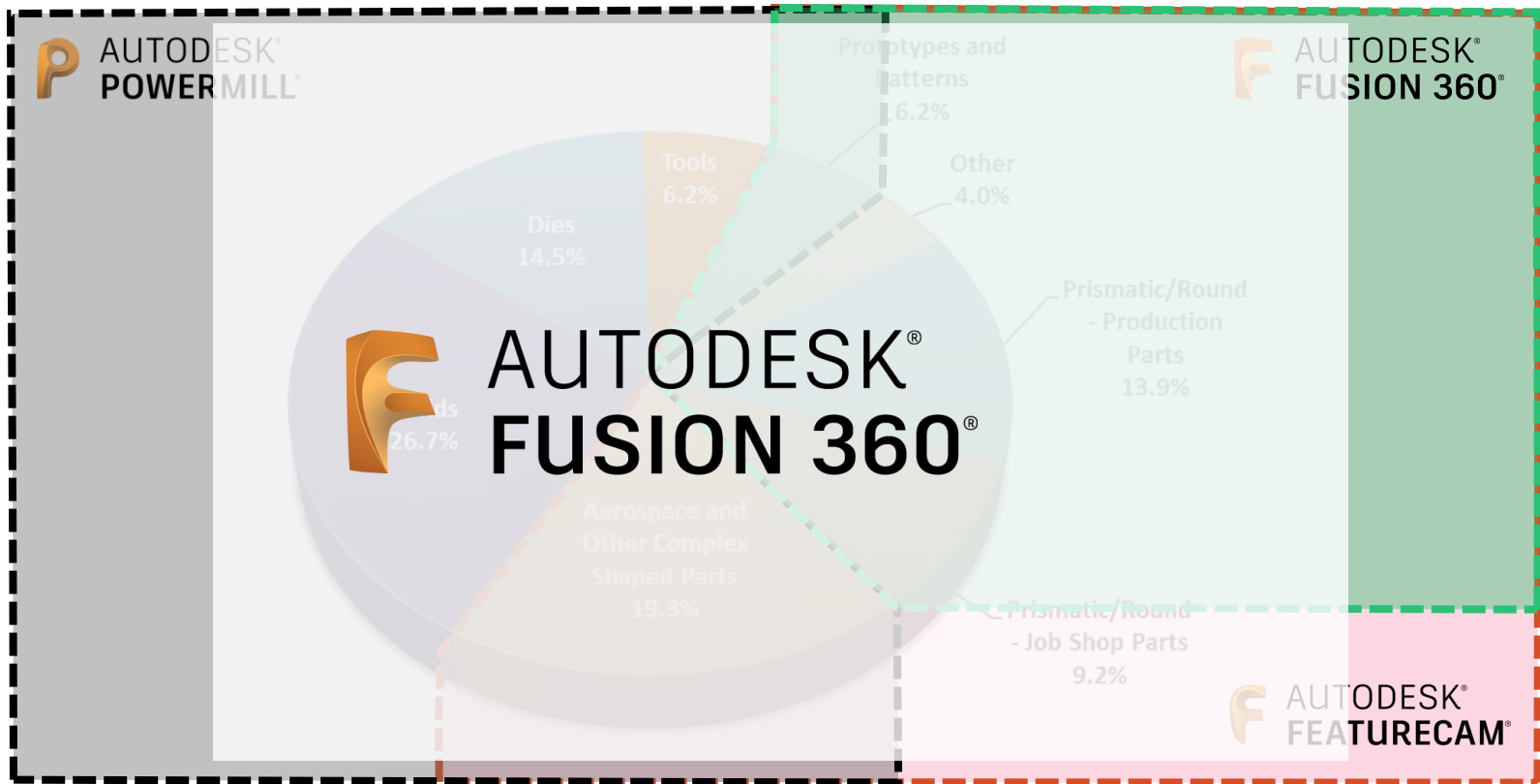
Likes (Given): 1833
Likes (Received): 2480

My point was that the Delcam kernel was/is one of very few actual real competitors to MW that has feature parity with it, and probably exceeds MW in some areas.

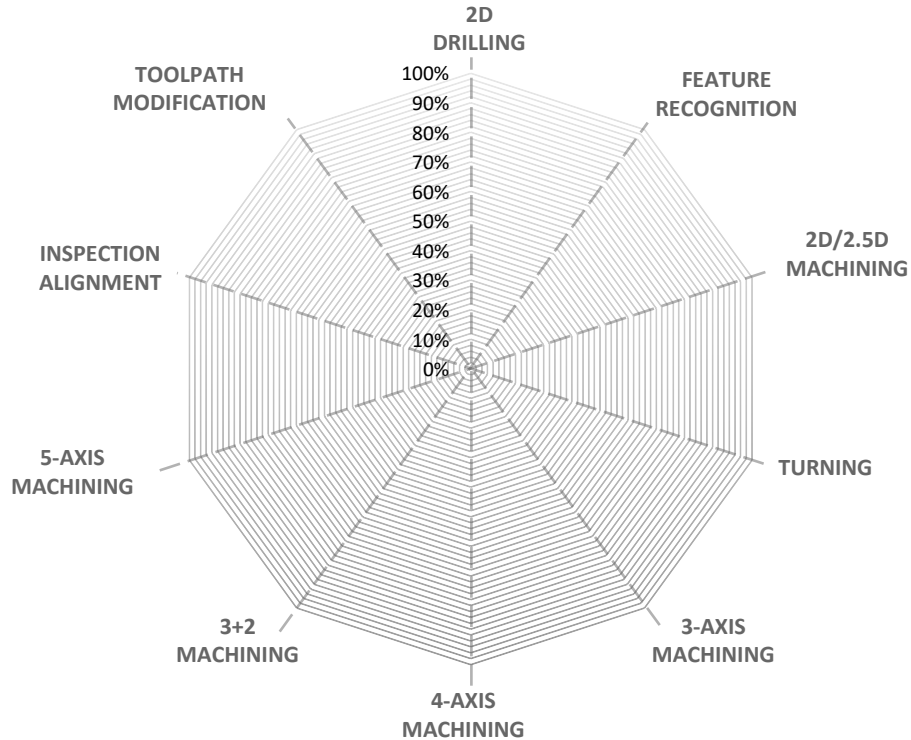
AD have spent the last half a dozen years pillaging that for their own purposes. What do they need MW for?

I can't figure out the answer to that question, unless the answer is simply to monopolise the market - and AD certainly have form with that kind of shit.

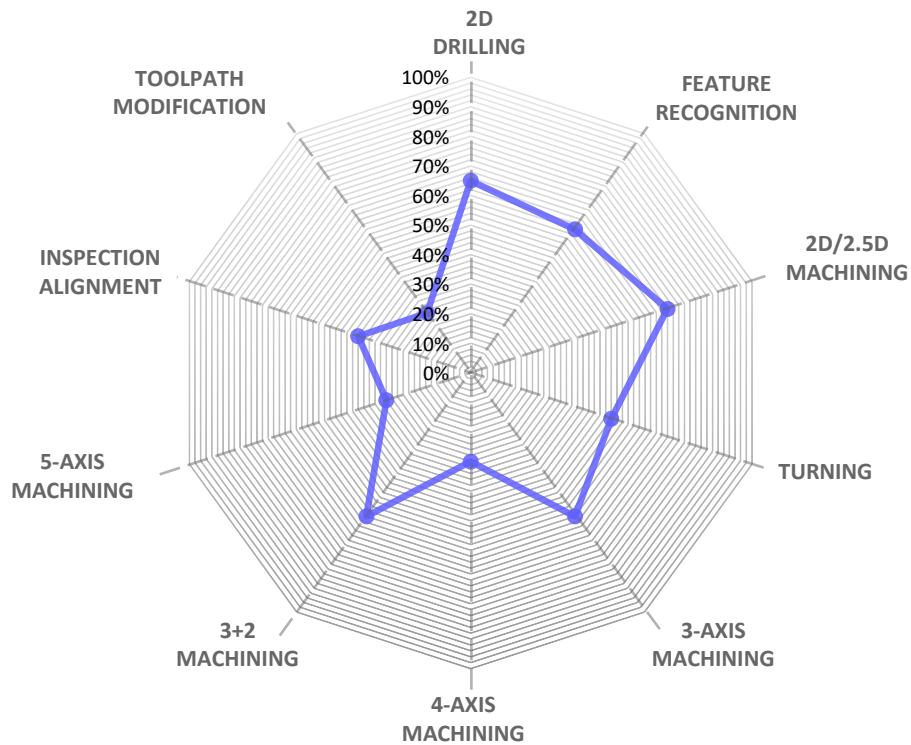
WHY work with ModuleWorks?



WHY work with ModuleWorks?



Let's step back a few years

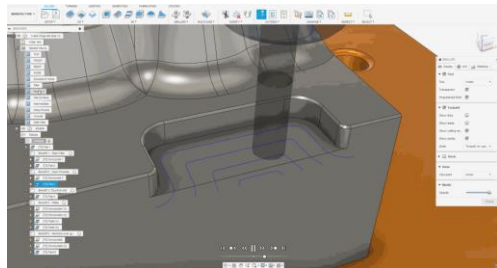


—●— F360

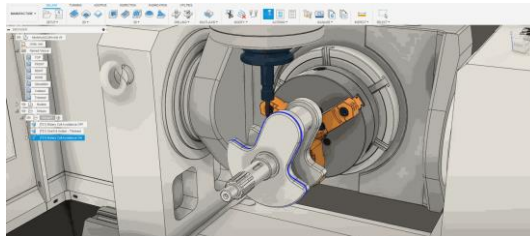
Times are changing....

A selection of PowerMill technology recently integrated into Fusion 360

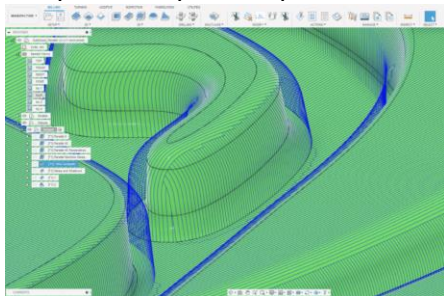
Automated Flat machining



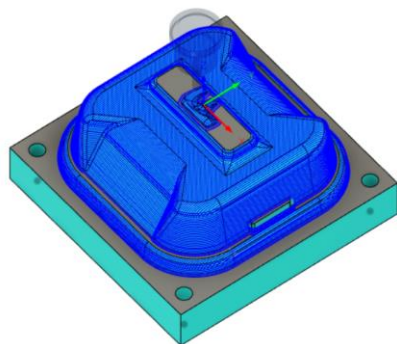
4 axis automatic collision avoidance



Optimized parallel passes



Steep and shallow
Automatically avoid flats



5 Axis functionality for all appropriate 3D Fusion
milling strategies (Insider Preview)



**AUTODESK®
FUSION 360®**



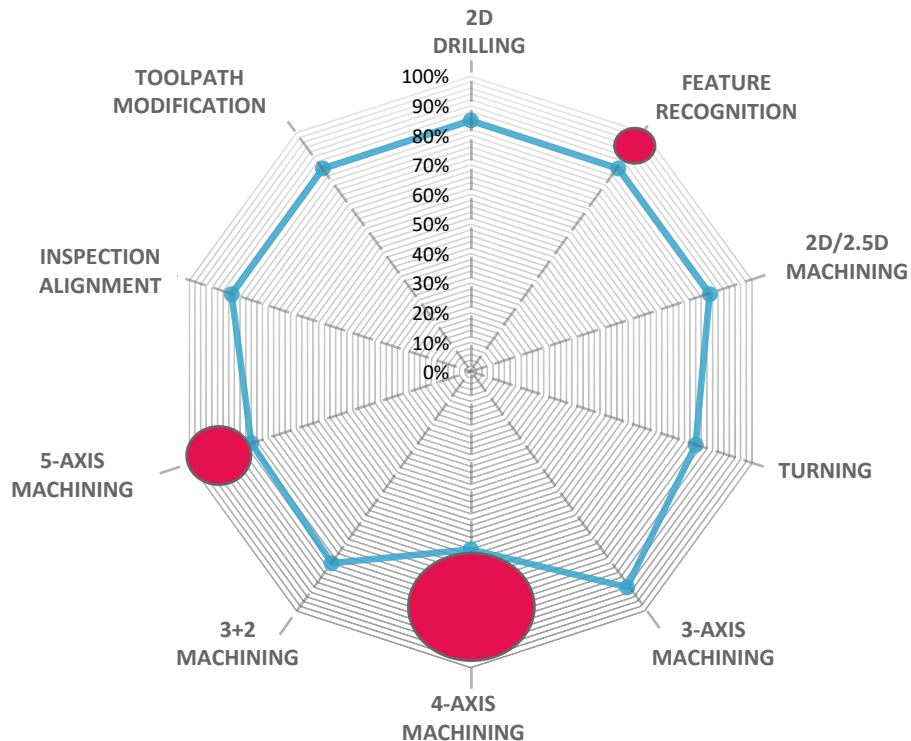
**AUTODESK®
POWERMILL®
Technology**

Strategic Manufacturing Partnerships



Fusion 360 Milling

Near term goal



MAX

F360 + PM + FCAM



AUTODESK®
FUSION 360®



AUTODESK®
FEATURECAM®
Technology

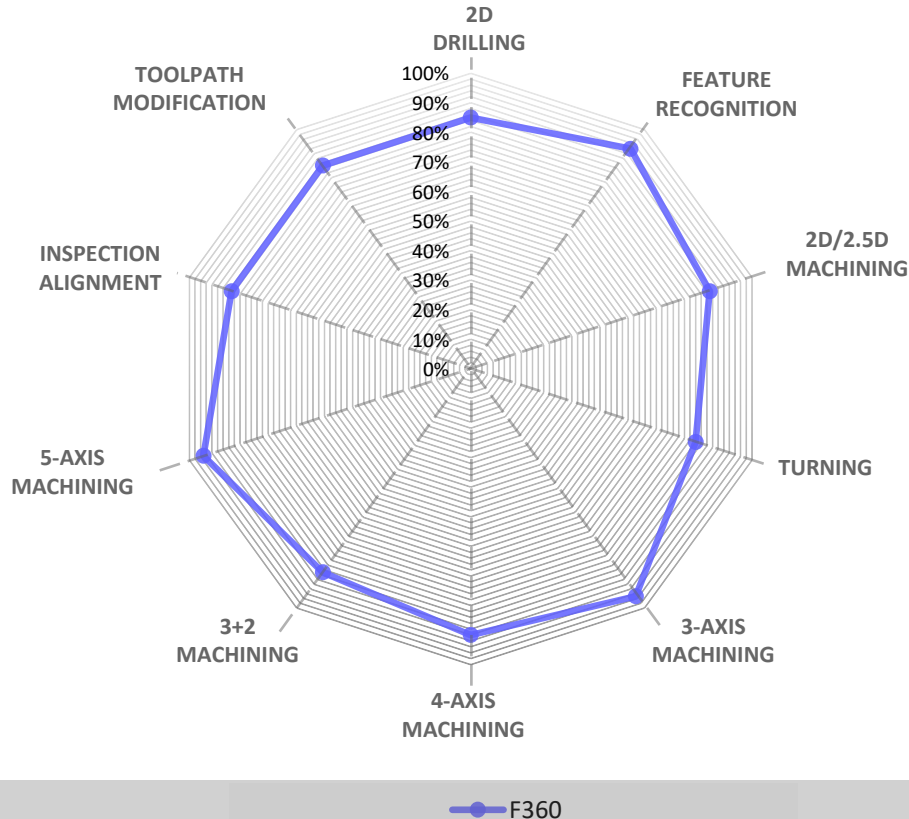


AUTODESK®
POWERMILL®
Technology



AUTODESK®
POWERINSPECT®
Technology

WHY ModuleWorks?



**AUTODESK®
FUSION 360®**



**AUTODESK®
FEATURECAM®**
Technology



**AUTODESK®
POWERMILL®**
Technology



**AUTODESK®
POWERINSPECT®**
Technology



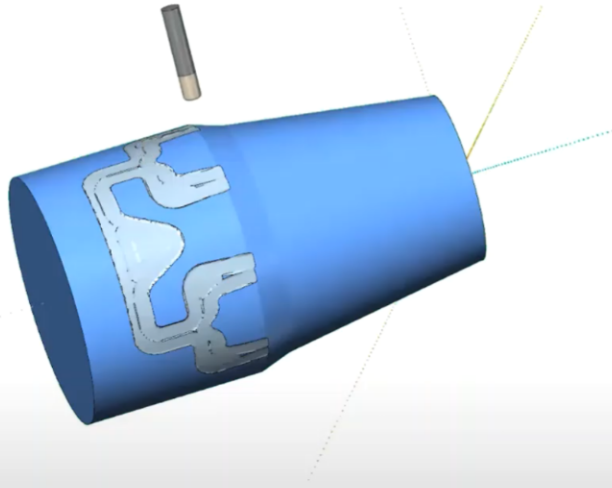
ModuleWorks



ModuleWorks

So, what ModuleWorks technology have we licensed and why?

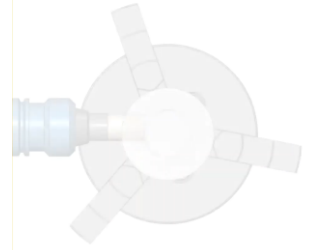
4 Axis – Cylindrical and Conical Roughing



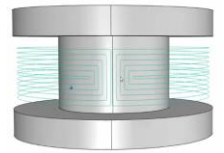
Roughing

Bull Nose D12 R2
ETM-4120-20
Feedrate = 8500 mm/min
 $a_p = 0.5$ mm
Calculation strategies:

- Rotary machining



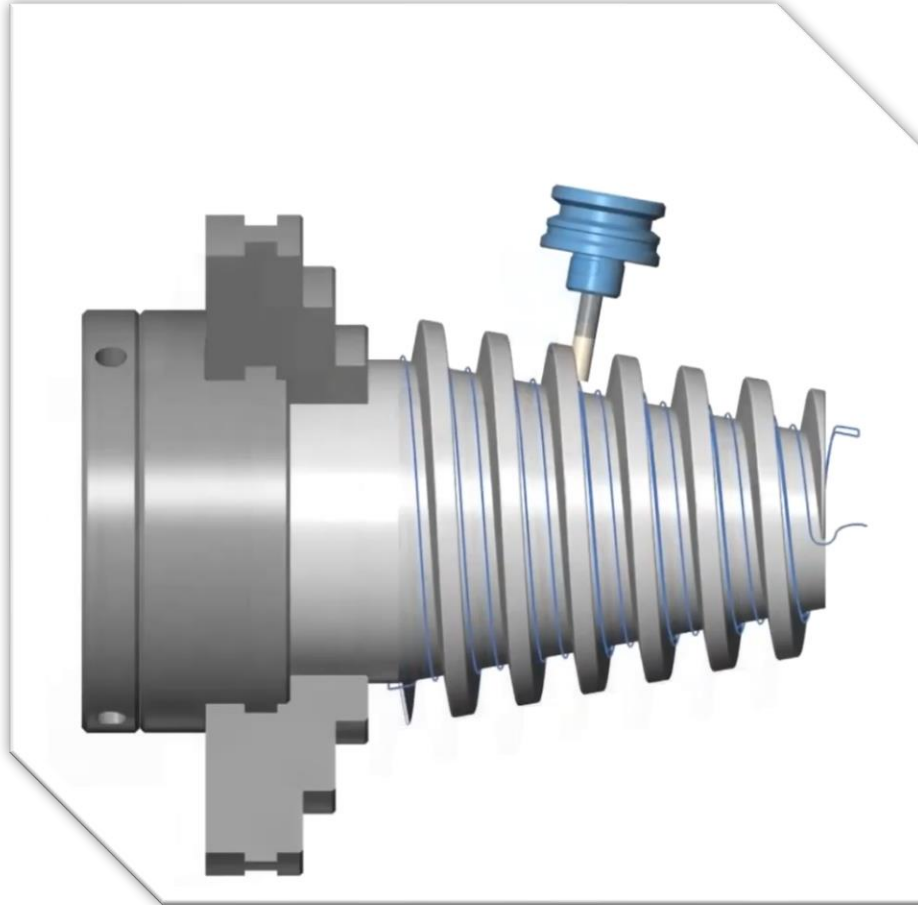
Y Axis Offset
to cut on the
leading edge
of the tool

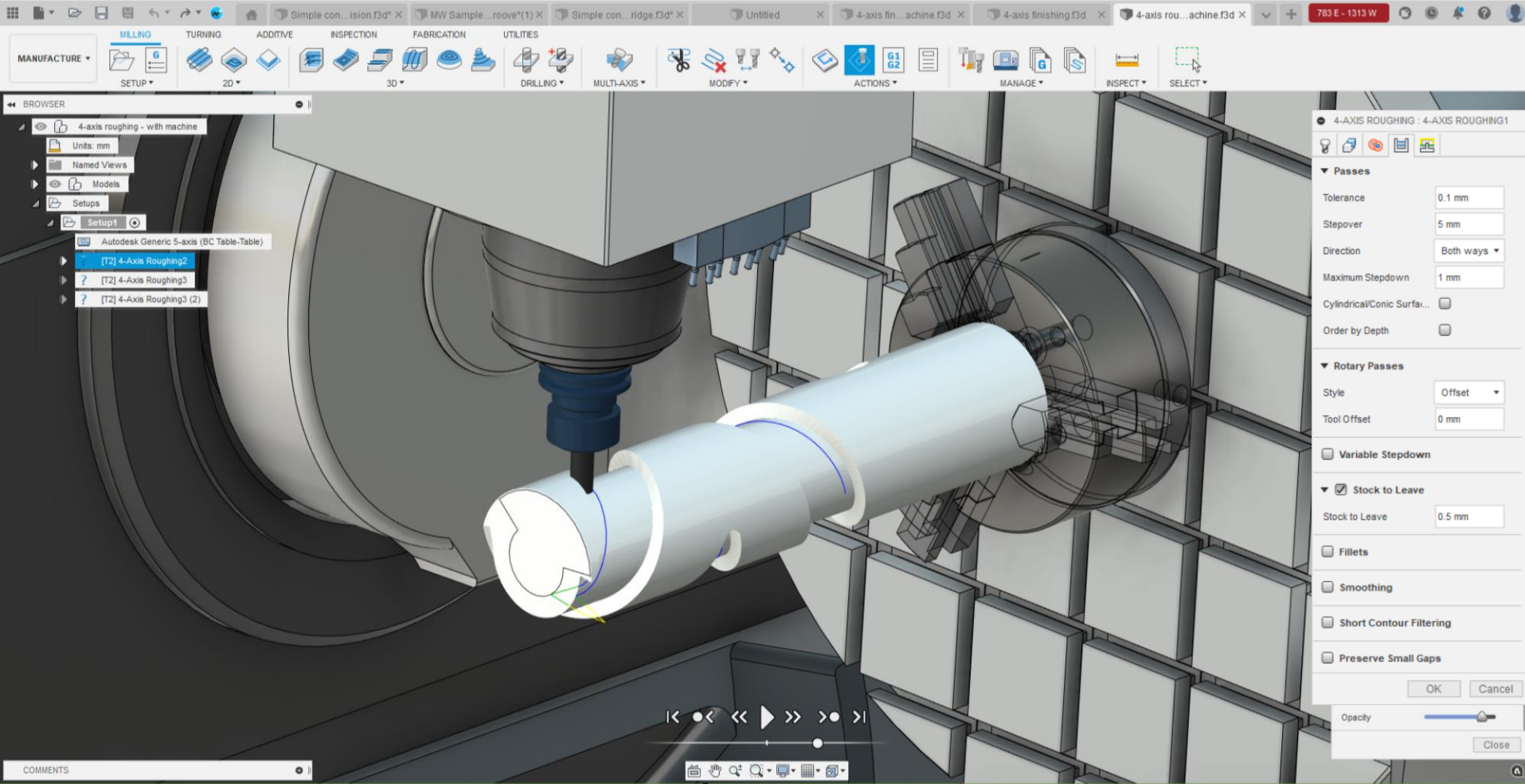


No 'Seam' like we
have with WRAP

Minimizes the
number of rotary axis
reversals

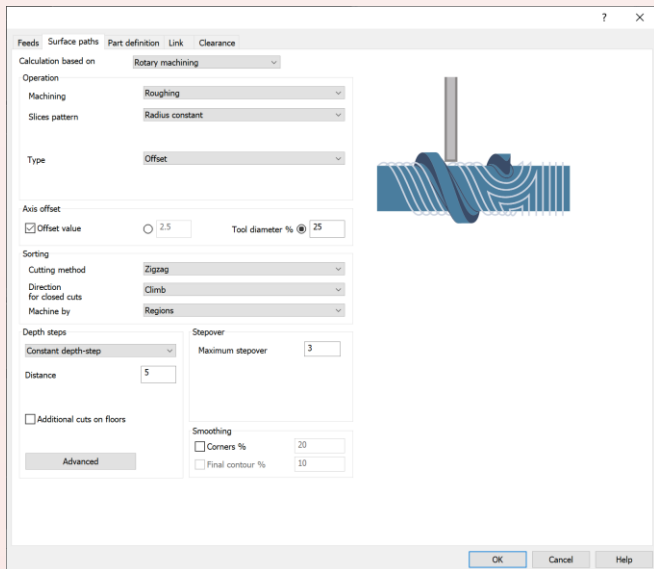
4 Axis – Cylindrical and Conical Finishing



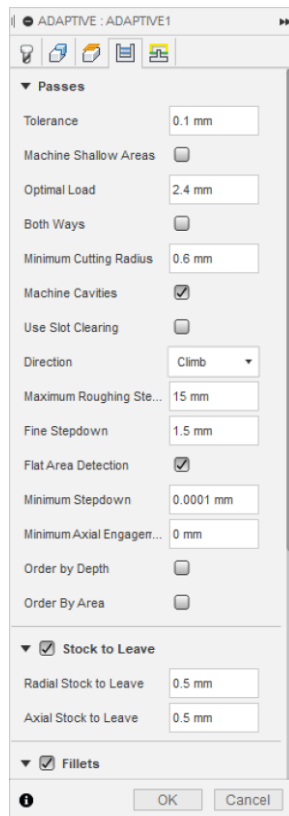


ModuleWorks

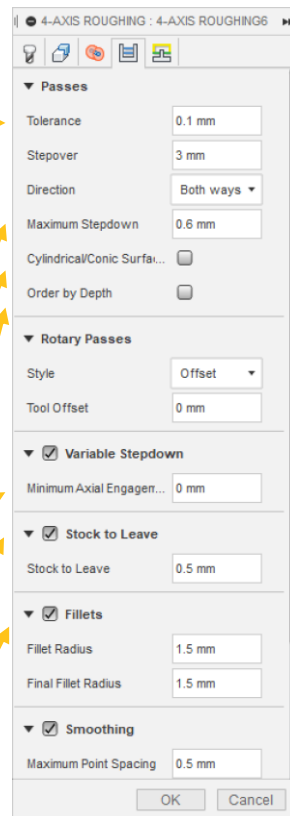
Consistency in look and feel



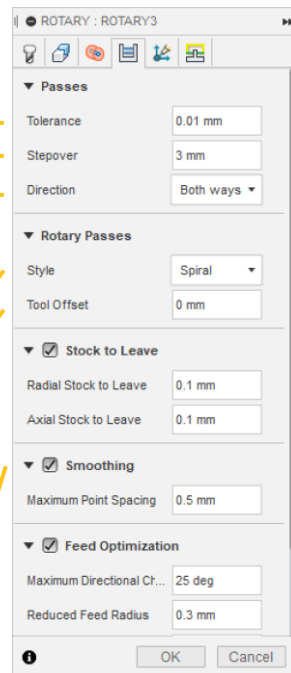

Fusion Adaptive



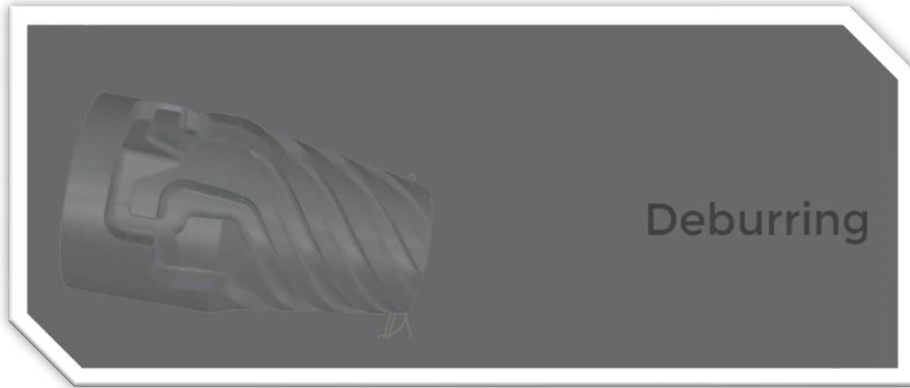

Fusion 4-Axis



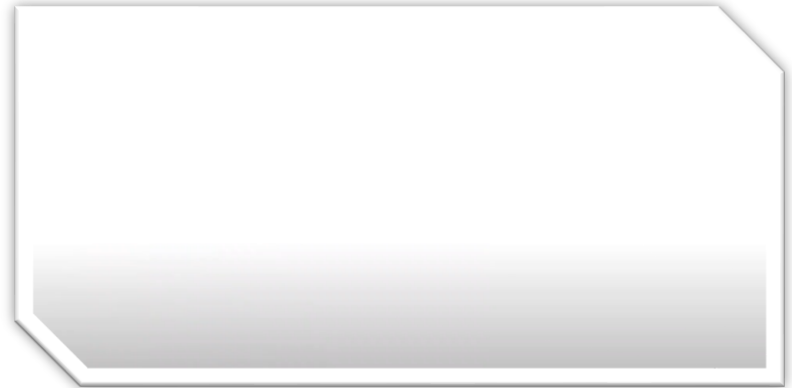

Fusion Rotary



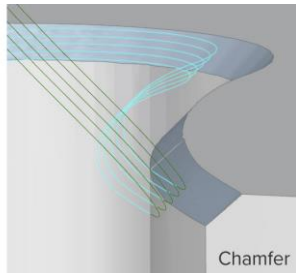
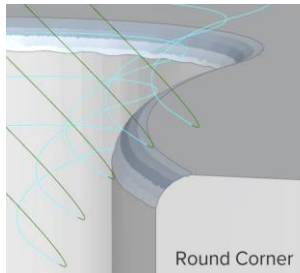
3,4 and 5 Axis – Automated Deburring



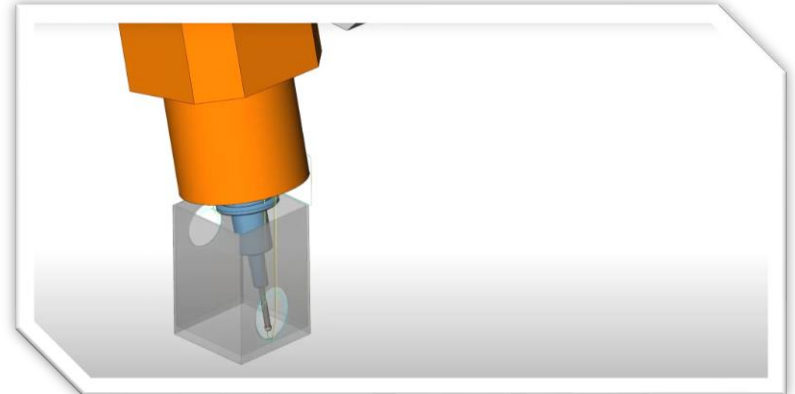
4 Axis – Ballnose Tool



3 Axis with Chamfer Tool or 5 Axis with End Mill

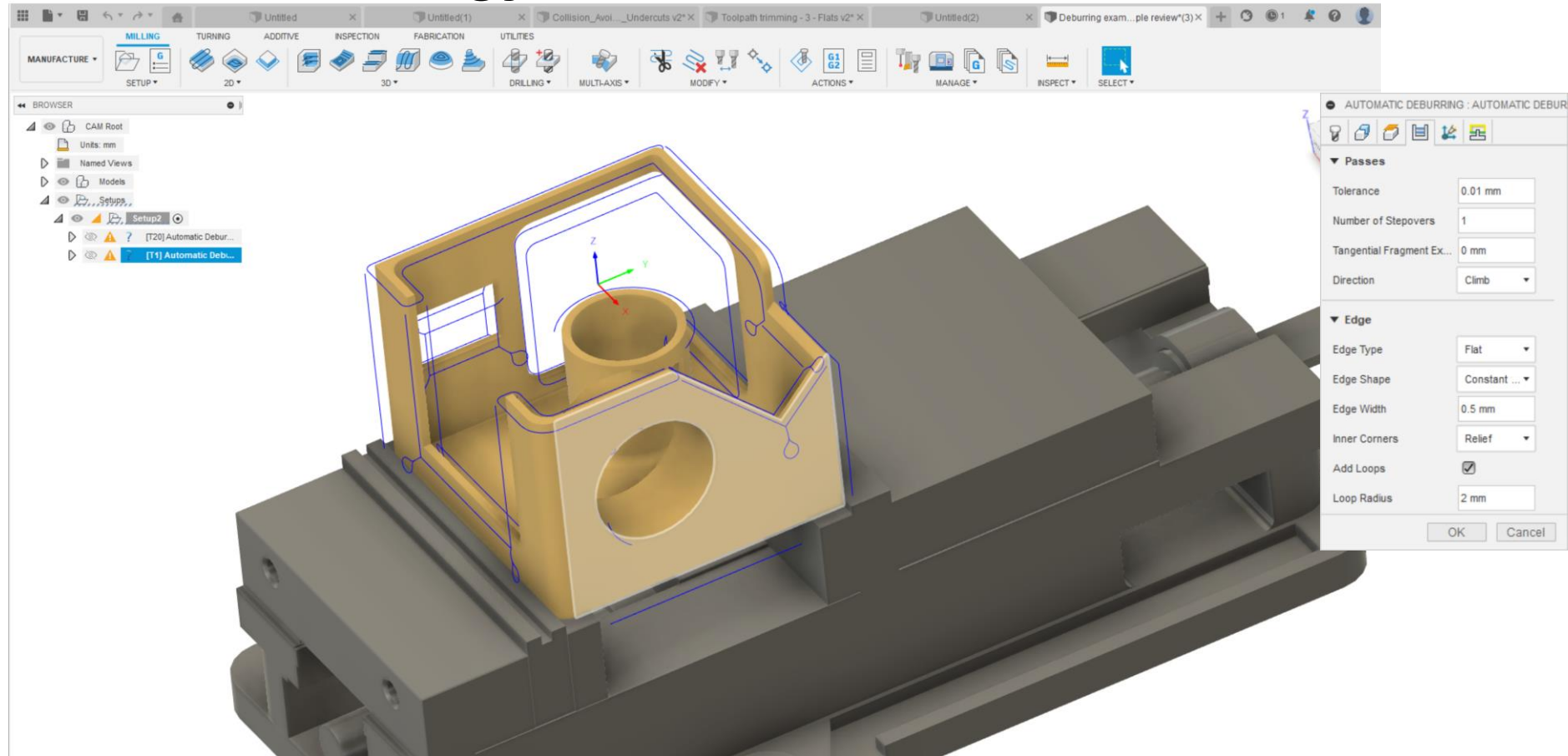


Multiple Cuts



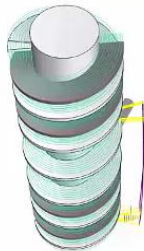
5 Axis Automatic Collision Avoidance with lollipop tool

Deburr Strategy

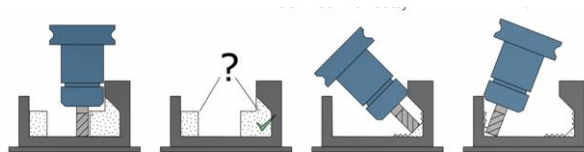




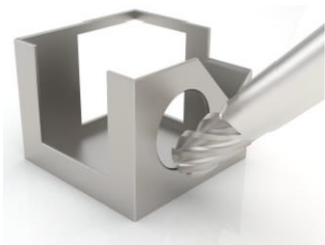
4 Axis Roughing



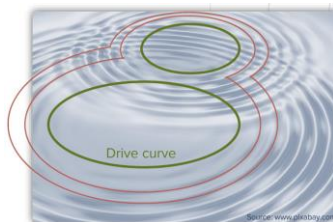
4 Axis Wall Finishing



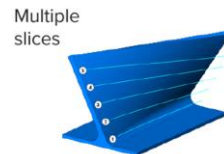
Automated 3+2 Roughing



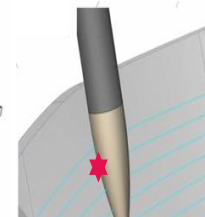
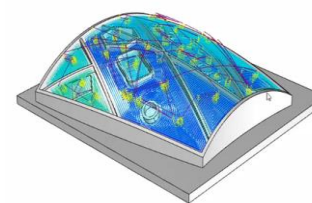
Automatic Deburring



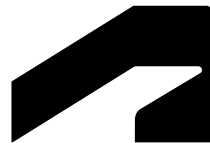
Geodesic



Swarf



Multi-Axis Machining
(Includes simultaneous 5 axis roughing
plus Circle Segment Tool support for
finishing operations)



Questions?

Craig.chester@autodesk.com