CAMWorks & HCL Technologies Industry Software Division

Robert Hutter, CAMWorks Reseller Manager EMEA

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HCL Technologies

Industry Software
By HCL Technologies

HCL Technologies is a next-generation global technology company that helps enterprises reimagine their businesses for the digital age. Our technology products and services are built on four decades of innovation, with a world-renowned management philosophy, a strong culture of invention and risk-taking, and a relentless focus on customer relationships.

- **IT and Business Services (ITBS)**
- **Engineering and R&D Services (ERS)**
- **Products and Platforms (P&P)**

US$11.48 BILLION
REVENUE

157
NATIONALITIES

52
COUNTRIES

208,000+
IDEAPRENEURS

CAMWorks

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Bulgaria's geographical proximity and cultural affinity to Central and Western Europe, a stable political and business environment, a large pool of multi-skilled workforce and a competitive environment for business operations have made it a preferred location for setting up a global delivery center. HCL has built its presence in Sofia, the capital city of Bulgaria.
Currently, HCL employs more than 1373* employees in Sofia.
Committed to the region, HCL is expanding its presence by investing in new, state-of-the-art global innovation centers in Sofia

Data as of July 28, 2021

51 **+1**
COUNTRIES

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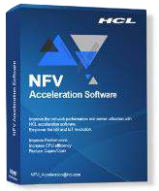
HCL's Industry Software Division

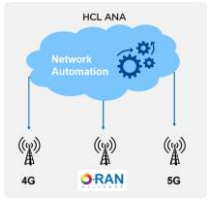
Telecom & 5G

- Portfolio of Products for fully virtualized high-performing, low latency, network architecture



NFV Acceleration

iCE.X

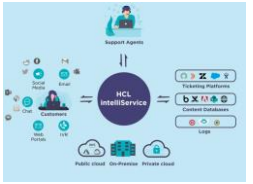


HCL ANA

X-Haul

Enterprise Cloud

- Optimus Intelligent Enterprise Suite – domain specific knowledge mining applications
- Purpose-built for the multi/hybrid cloud IT landscape



Optimus intelliService

Optimus SmarTest

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Manufacturing and Industry 4.0

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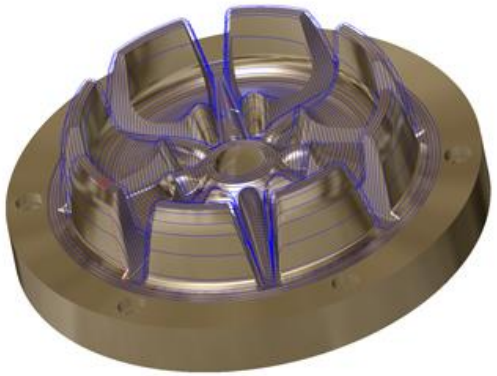
- Set of proven products for Design, Manufacturing and Visualization in the CAD/CAM/PLM industry



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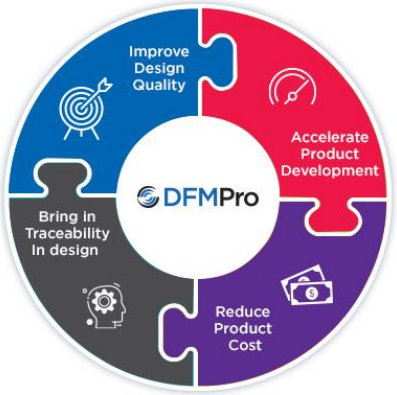
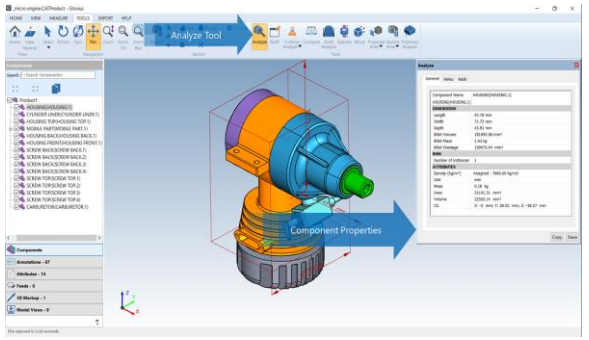


DFMPro



Glovius –
CAD Viewer

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CAMWorks History & Milestones

1996 – Prototype developed by Geometric under Teksoft Inc.

1997 – 1st Release / 1st CAM Gold Partner of Solidworks

2000 – High-End 3 axis toolpath Core

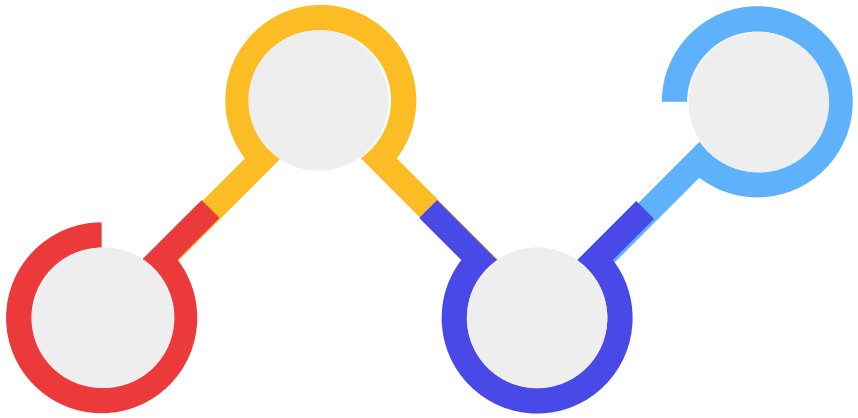
2002 – 5 axis / Multiaxis Core

2005 – Geometric aquires CAMWorks

2013 – Virtual Machine

2017 – Solidworks CAM

2017 – HCL



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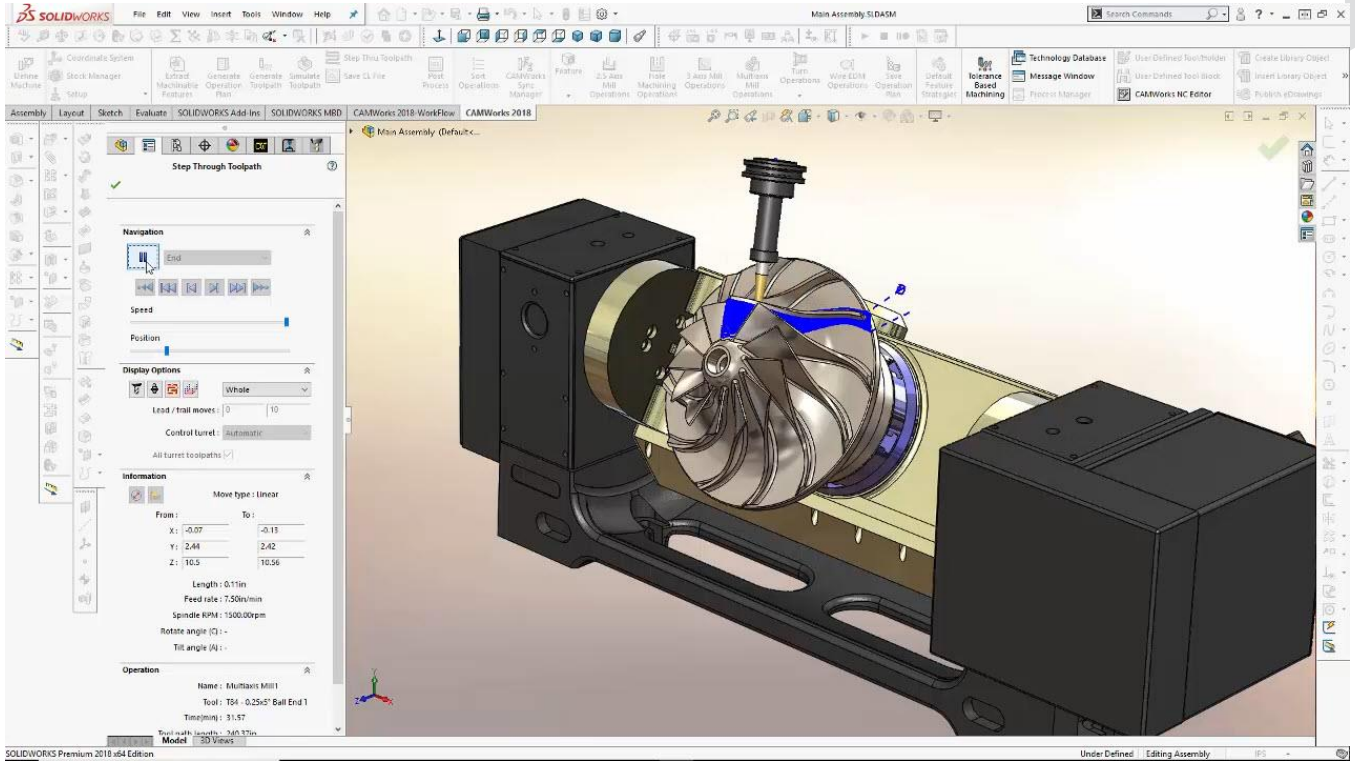
Integrated CAM

- **Fully Integrated in Solidworks**
- **No Data Conversion**
- **One File for CAD and CAM**
- **Supports Solidworks Configurations**
- **Works in Parts & Assemblies**
- **Stores Information for PDM**
- **Fully associative Data**
- **Automatic updates CAM Data on Part Change**



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Feature based Machining

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Feature Based Intelligent Machining!

What are Machining Features?

- Machining features include holes, pockets, slots, bosses, part perimeters, and more

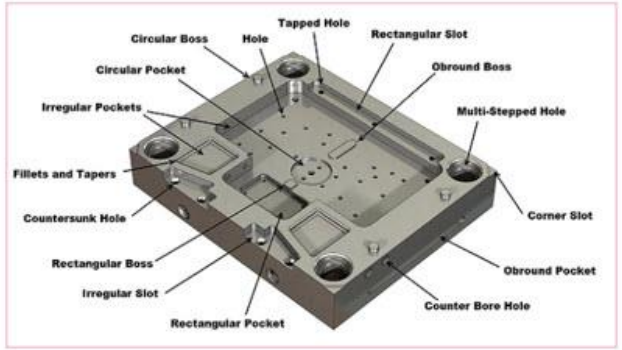
How are they different from Design Features?

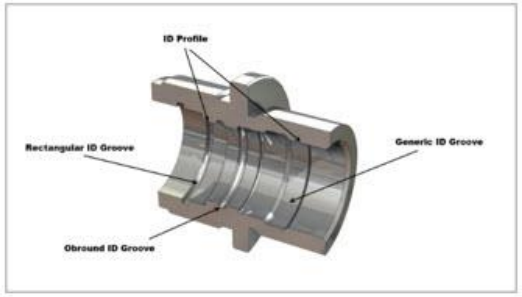
- Design features include extrusions, revolved, cuts, sweeps, and others
- Multiple design features and methods can be used to create a single machinable feature

Why Machining Features instead of creating operations?

- CAMWorks automatically programs over 20 different types of machining features
- Feature based programming is typically 80-90% faster than operation-based programming

Automatic Feature Recognition





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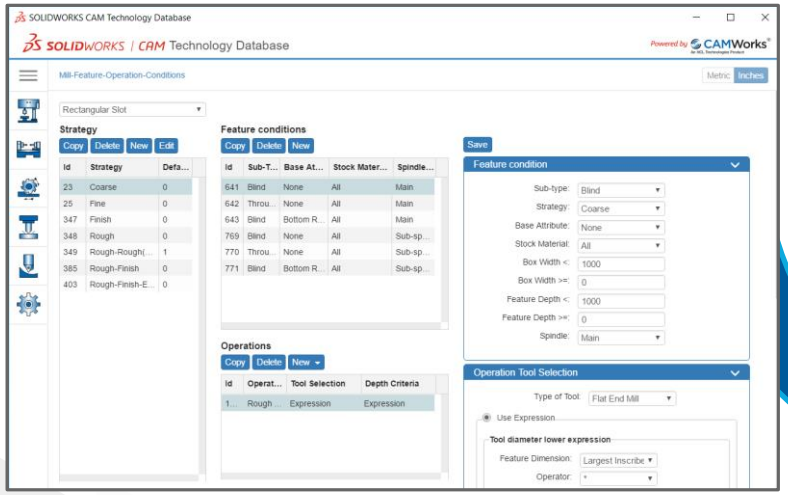
Knowledge Based – TechDB™

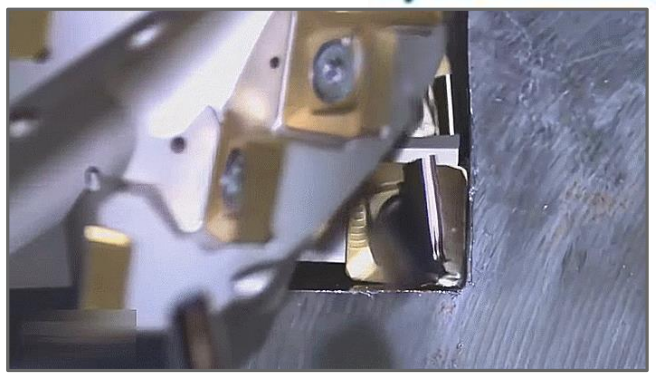
- Program it once and reuse it!
- Capture your best practices
- Save your machining strategies
- Your best practices are selected automatically

Use your rules to select your machining strategies, tools, feeds & speeds, and depth of cuts *automatically!*



Tech DB contains your Rules

Programmer
Machinist



Your machining best practices

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Tolerance Based Machining

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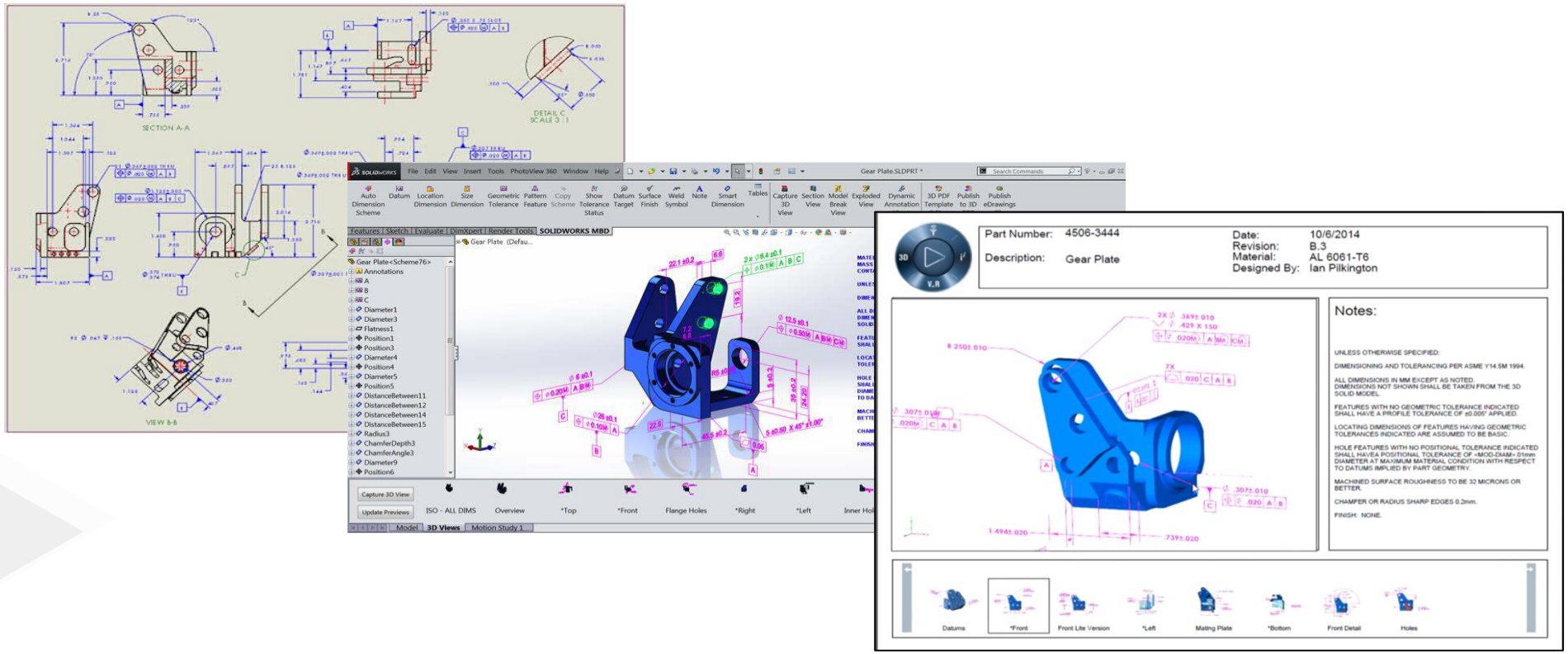
What is TBM and how does it work?

TBM reads the Model Based Design (MBD or PMI) data in the design model and automatically creates the Features and Operations to machine the part!



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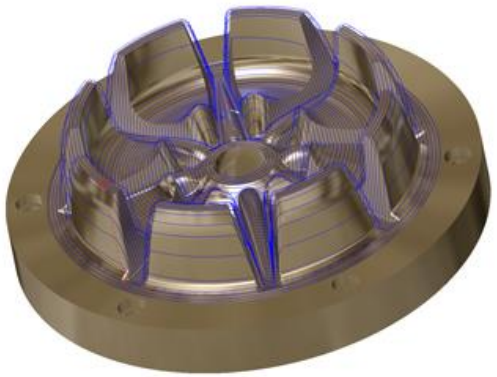
CAMWorks Shopfloor



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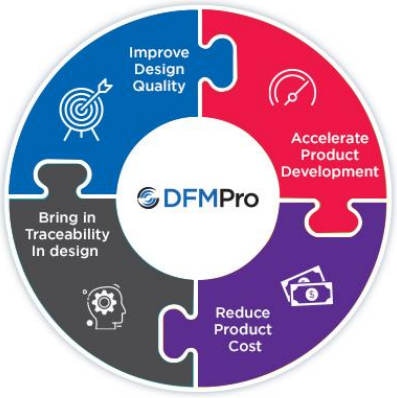
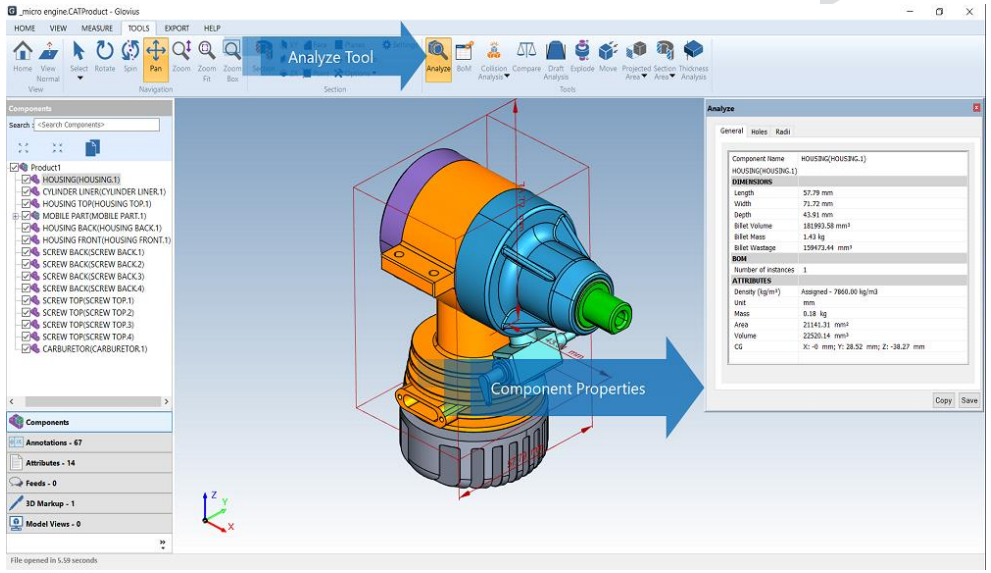


DFMPro



Glovius – CAD Viewer

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CAMWorks Shopfloor

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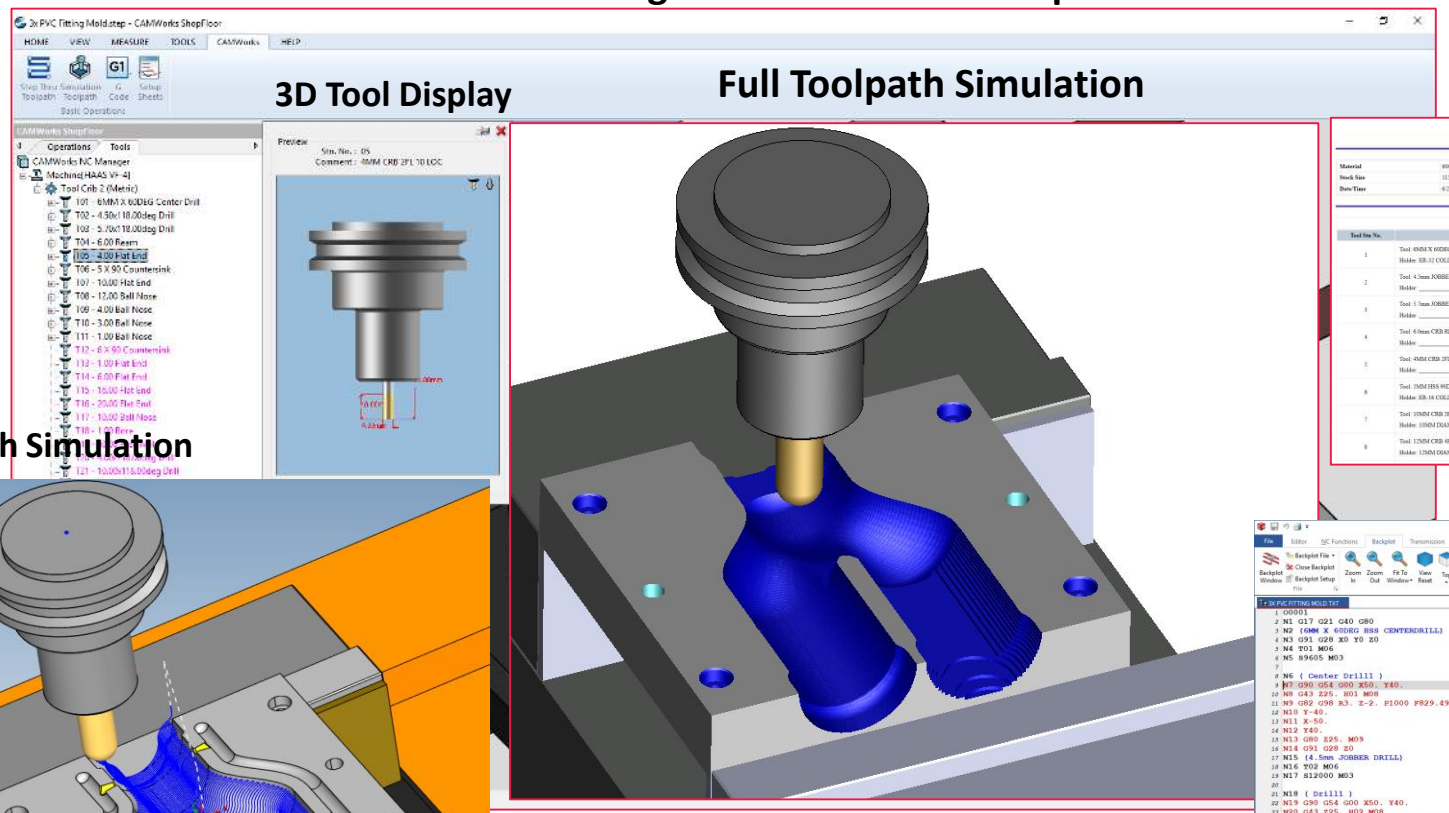
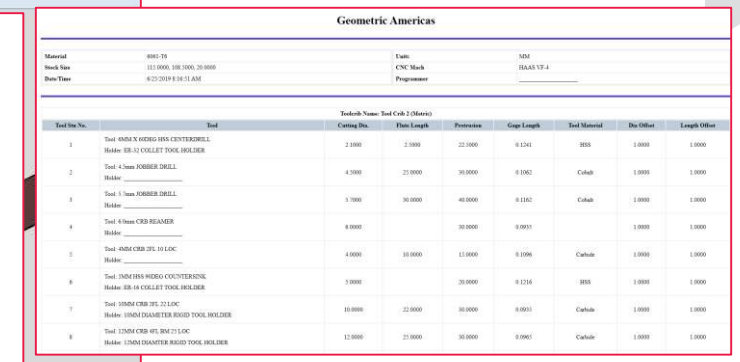
3D Digital Model of the Setup



3D Tool Display

Full Toolpath Simulation

Setup Sheets/Tool Lists



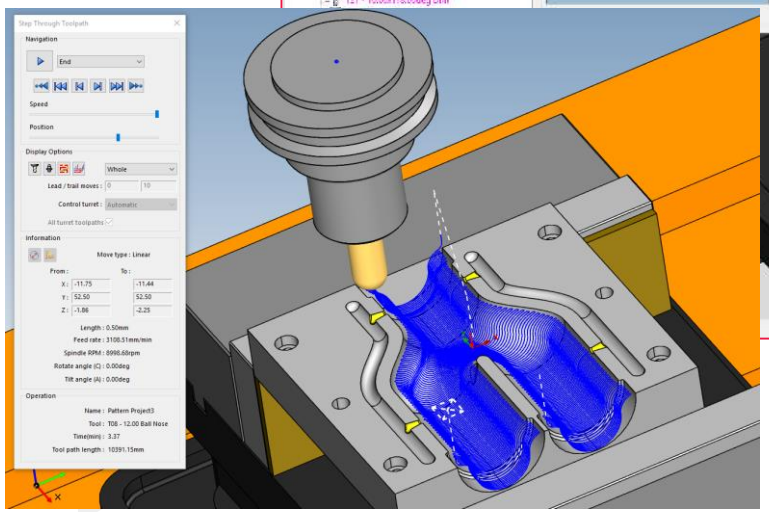
Geometric Americas

Material	6061-T6	Units	MM
Stock Size	115.0000, 108.5000, 20.0000	CNC Mach	HAAS VF-4
Date/Time	4/25/2019 8:36:51 AM	Programmer	

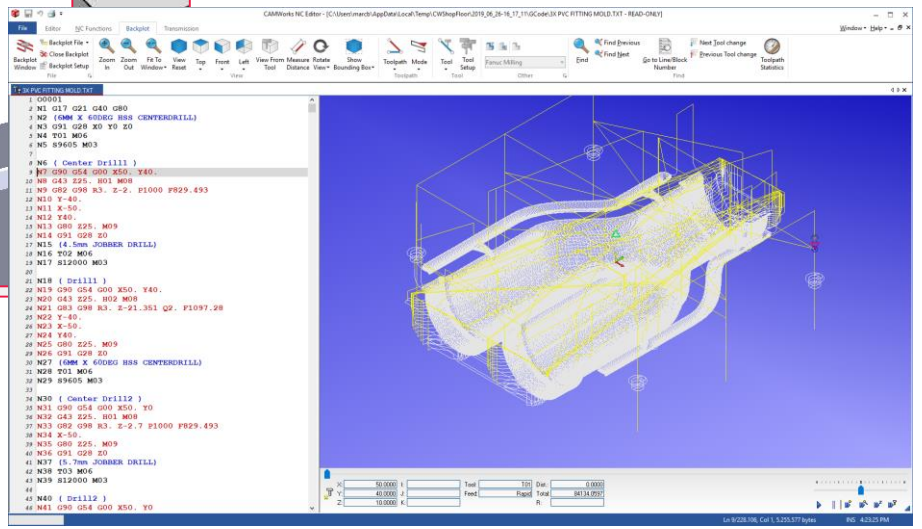
Toolcrib Name: Tool Crib 2 (Metric)

Tool Stn No.	Tool	Cutting Dia.	Flute Length	Protrusion	Gage Length	Tool Material	Dia Offset	Length Offset
1	Tool: 6MM X 60DEG HSS CENTERDRILL Holder: ER-32 COLLET TOOL HOLDER	2.1000	2.1000	22.1000	0.1241	HSS	1.0000	1.0000
2	Tool: 4.5mm JOBBER DRILL Holder: _____	4.5000	25.0000	30.0000	0.1062	Cobalt	1.0000	1.0000
3	Tool: 5.7mm JOBBER DRILL Holder: _____	5.7000	30.0000	40.0000	0.1162	Cobalt	1.0000	1.0000
4	Tool: 6.0mm CRB REAMER Holder: _____	6.0000		30.0000	0.0935		1.0000	1.0000
5	Tool: 4MM CRB 2FL 10 LOC Holder: _____	4.0000	10.0000	15.0000	0.1096	Carbide	1.0000	1.0000
6	Tool: 5MM HSS 90DEG COUNTERSINK Holder: ER-16 COLLET TOOL HOLDER	5.0000		20.0000	0.1216	HSS	1.0000	1.0000
7	Tool: 10MM CRB 2FL 22 LOC Holder: 10MM DIAMETER RIGID TOOL HOLDER	10.0000	22.0000	30.0000	0.0935	Carbide	1.0000	1.0000
8	Tool: 12MM CRB 4FL RM 25 LOC Holder: 12MM DIAMETER RIGID TOOL HOLDER	12.0000	25.0000	30.0000	0.0965	Carbide	1.0000	1.0000

Step-Through Simulation



CNC Editor with Back-Plotting



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Automation through APIs

CAMculator
by SolidLine

Industry Software
By HCL Technologies

WOODEXPERT

CAMWorks

WINTOOL

NESTINGWorks
An HCL Technologies Product

EdgeWorks

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What´s Next

Prime Turning

Millturn

Assembly Machining

Wire EDM PRO

Synch Manager

Virtual Machine

CAMWorks Shopfloor

Volumill Roughing

B-Axis Turning

Probing

2.5 axis Mill

Automatic Deburring

3 axis Mill

Wire EDM

2 & 4 Axis Turning

Multi Channel Machining

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THANK YOU!

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