*hyper*CAD®s

CAD for CAM

Wire cutting
with OPTICAM in *hyper*CAD®-S

OPEN MIND
THE CAM FORCE

OPTICAM
CAD/CAM SYSTEM
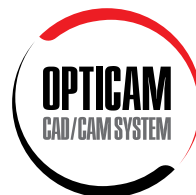
Optimized programming
# and simulation of wire EDM

The OPTICAM wire-cutting module, software for efficient, flexible programming and simulation of wire electrical discharge machines (two to four axes), is fully integrated into *hyper*CAD®-S.

Incorporated into a modern CAD for CAM environment, *hyper*CAD®-S speeds up programming work. This CAD system is the perfect solution for mastering many of the daily challenges that arise when working with meshes, faces and solids to create precise components and tools. The user can easily switch between the Opticam and *hyper*MILL® applications. It is possible to create milling, milling/turning and wire EDM programs on one and the same model.

Completely integrated

Single data source

Efficient
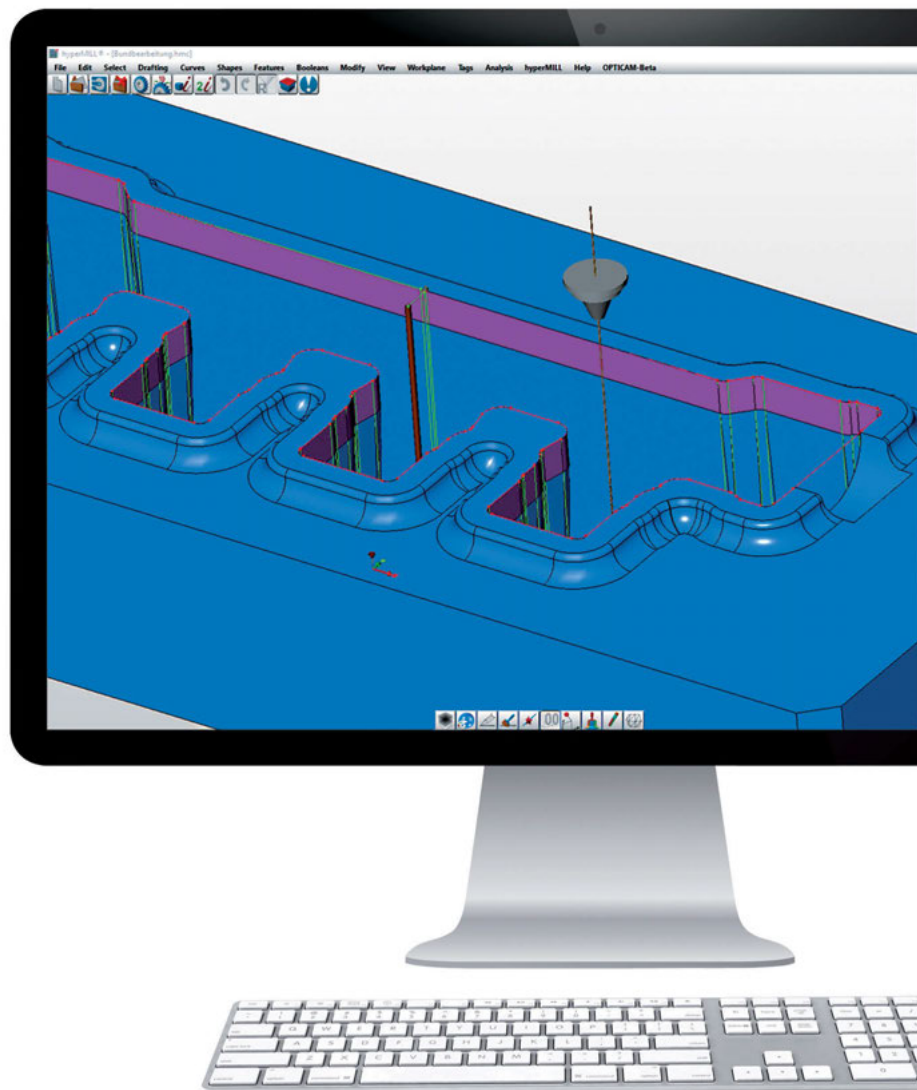
- **Seamless data exchange: Comprehensive interface package. Import:** *hyper*CAD® files, IGES, STEP, STL, DXF/DWG, point cloud, CATIA V4 and V5, Parasolid, Autodesk® Inventor®, Siemens NX, SOLIDWORKS, PTC Creo. **Export:** IGES, STEP, STL, point cloud and DXF/DWG.

- **Intuitive CAD for CAM operation:** Self-explanatory icons and a highly transparent user interface without any hidden functions help to reduce errors and accelerate operating procedures.

- **Multi-application mode:** An integrated 64-bit system and IDE-style interface enable opening any number of documents each in its own application. Multiple models can be processed and calculated at the same time.

- **Certified solution:** The OPTICAM wire-cutting solution is certified for *hyper*CAD®-S. The CAM product from Camtek meets the requirements with regard to integration, reliability and user friendliness.
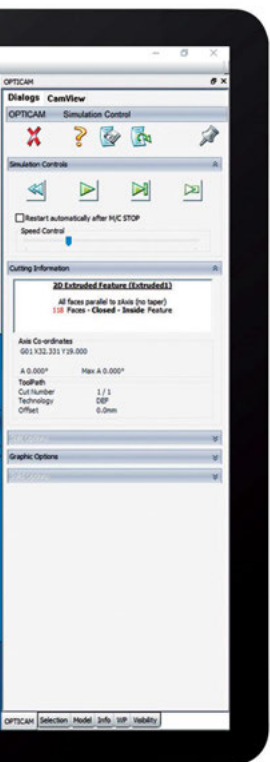
Feature recognition
Automatic for the NC program

The solution analyzes the parts, recognizes wireable geometries and creates their machining features simultaneously. The tool paths are visualized and can be manipulated afterwards. Faces can be extended if they are too short and gaps in faces bridged. Faces or edges can also be chosen manually for the wire EDM of only specific areas or for the creation of user-defined features. Furthermore, integrated technologies and machining strategies can be assigned directly to the created machining features.

- **Automatic feature generation**
- **Use of feature information**
- **Undercut control**
- **Maximum control of tapred walls**
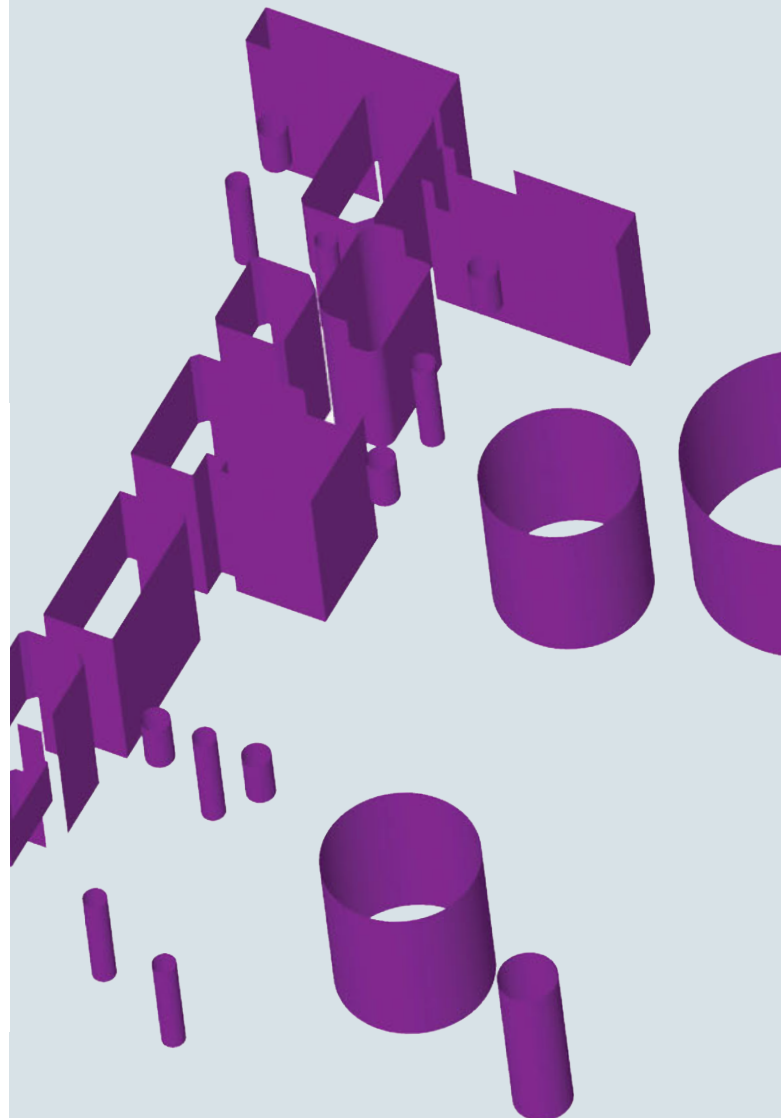
Highlights of the wire EDM solution

The popular OPTICAM solution brings together more than 20 years of practical experience in programming wire electrical discharge machines. A number of comprehensive functionalities have been included in the easy-to-use system along with many great features.

The right strategies for every feature

Parts are first analyzed to ensure reliable recognition of wireable geometries as features. Faces or edges can also be chosen manually to select specific areas or for the creation of user-defined features. The optimum machining strategies are then identified for each feature and immediately defined using technology databases based on their suitability for the machining job.

This results in efficient and safe operation of wire EDM machines. All cuts are shown in the cuts dialog and can be changed afterwards.

- **Cylindrical machining**
- **Constant and variable taper, also on cylindrical parts**
- **Ruled surface machining with automatic synchronization**
- **Inclined machining**
- **Automatic threading and cutting of wires**

- **Diagonal threading**
- **Automatic positioning**
- **Automatic grouping of identical geometries**
- **Multi-part programming**
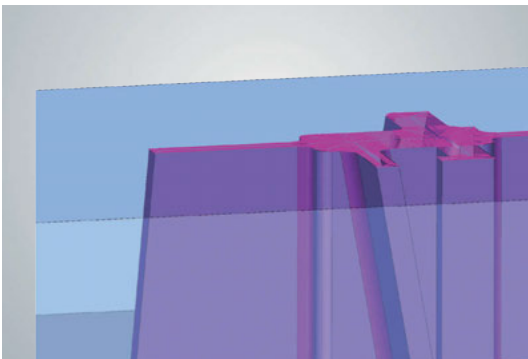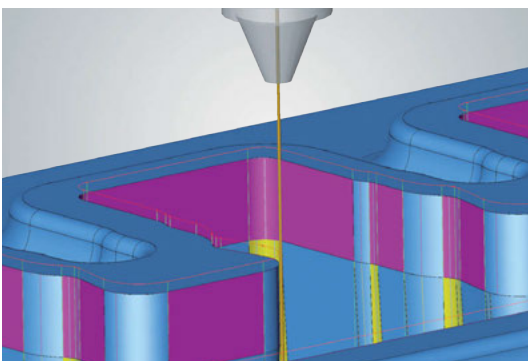- **Variable reference plane height**
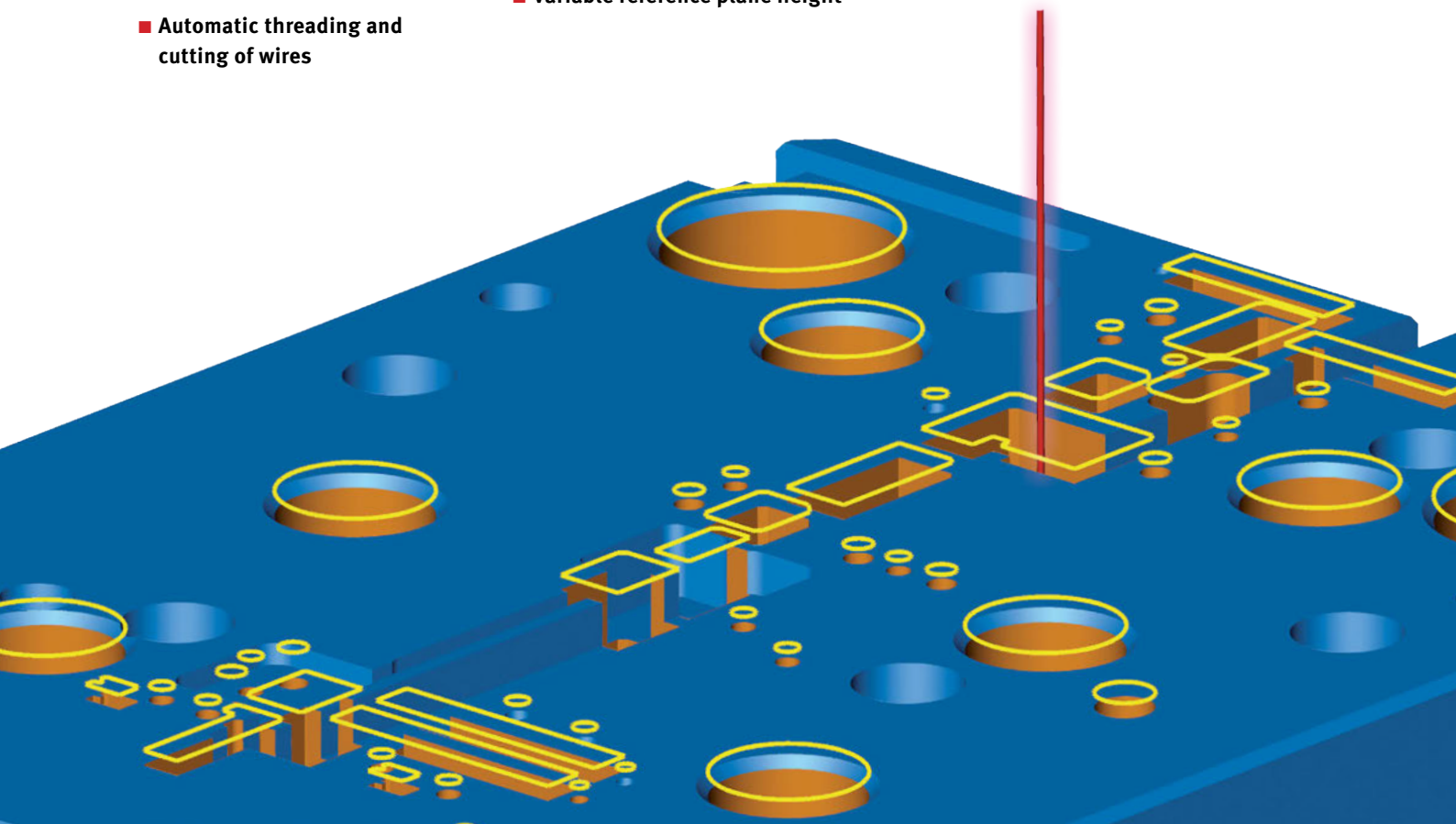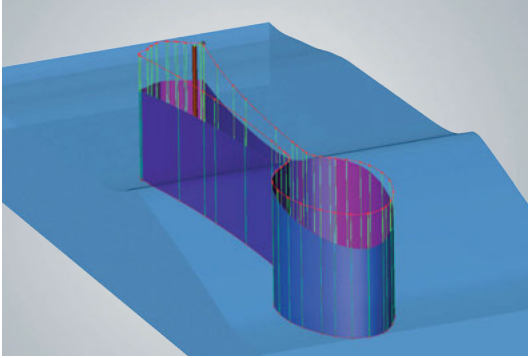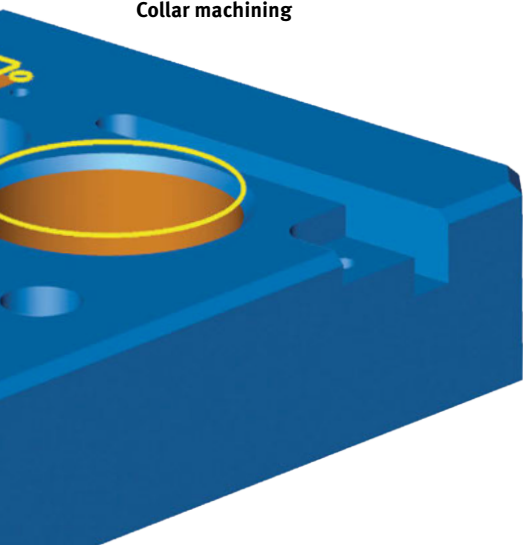
Variable reference plane height
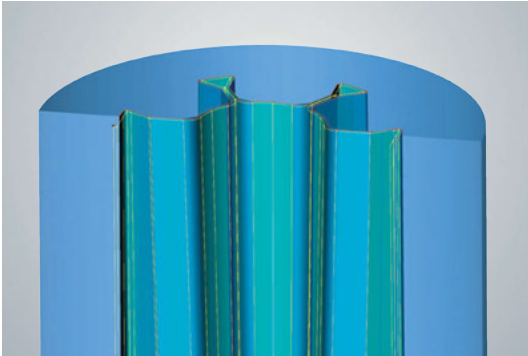
Ruled surface

Pocketing: 4axis pocketing

Collar machining

- **Many different strategies for efficient, safe operation:**
  - Strategies for supervised and unsupervised day and night operation
  - Punch strategies
  - Reverse cutting
  - Automatic cutting off of slugs
  - User defined operation strategies can be saved as templates

- **Pocketing:** Machine downtimes and manual intervention all cost money. The solution to this problem is efficient pocketing without slugs. The following strategies are available for this purpose:
  - Cylindrical and conical pocketing
  - 4axis ruled surface pocketing*
  - Partial pocketing of geometry sections*
  - * This module is optionally available.

- **Collar machining:** For a more user-friendly management of cutting contours these contours can be automatically grouped if needed.

- **Ruled face pocketing:** This function enables ruled faces to be machined without slugs, thereby significantly reducing programming work and allowing unsupervised machining.

- **Partial pocketing:** This function makes it possible to combine conventional roughing and pocketing.

- **Corner relief:** Five types of corner reliefs allow targeted control of the tool path in sharp corners without changing the model.
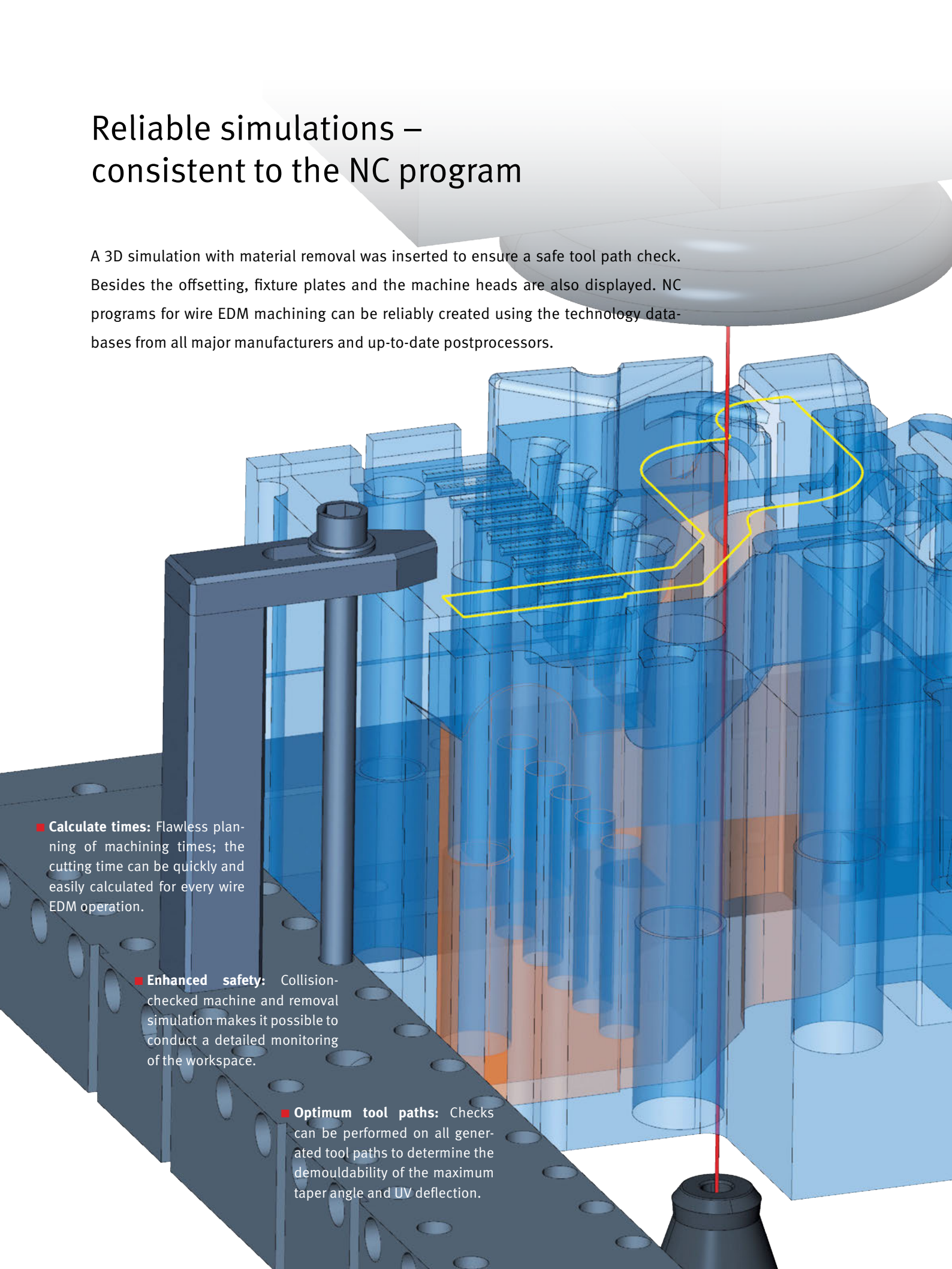
- **Events and segments:** Key comments or useful machine instructions can be quickly and easily inserted using event points. Splitting up features into individual segments makes it possible to set the number of cuts, offset values, lead-on and lead-off technologies or partial pocketing separately.

- **Lead-on/lead-off:**
  - Straight, at an angle/arch- and meander-shaped
  - Possibility to overtravel the contour
  - Programmable lead-on and lead-off technologies

- **Start holes and tags:** Whether fully automatically and optimized or predefined on the basis of the design or selected manually, the system optimally calculates start holes and tags. If start hole geometries have been predefined, they are taken into account. Furthermore, the type, position and number of tags can be defined automatically or manually. This makes it possible to create triangular and multiple tags with several start holes.

Reliable simulations –
consistent to the NC program

A 3D simulation with material removal was inserted to ensure a safe tool path check. Besides the offsetting, fixture plates and the machine heads are also displayed. NC programs for wire EDM machining can be reliably created using the technology databases from all major manufacturers and up-to-date postprocessors.

Calculate times: Flawless planning of machining times; the cutting time can be quickly and easily calculated for every wire EDM operation.

Enhanced safety: Collision-checked machine and removal simulation makes it possible to conduct a detailed monitoring of the workspace.

Optimum tool paths: Checks can be performed on all generated tool paths to determine the demouldability of the maximum taper angle and UV deflection.

## Technology databases and postprocessors

Certified expertise:
Machine manufacturer technology databases

The wire EDM module has been developed in close cooperation with leading machine manufacturers and is being continuously updated to incorporate the latest functions of the wire EDM machines The advanced capabilities of the module make it the market leader in this field, and it is recommended by many machine manufacturers.

Always up-to-date: All wire EDM postprocessors are constantly being upgraded in cooperation with the relevant machine manufacturer.

Supported machine controls:

- AC Cut 20/30/ 200/300/400/ E350/E600
- Accutex
- AC Fanuc
- AC Orange
- Excetek
- Fanuc
- Makino
- Millennium
- Mitsubishi
- ONA
- Robofil
- Seibu
- Sodick
- Agie 100/123
- AC Vision
- Joemars
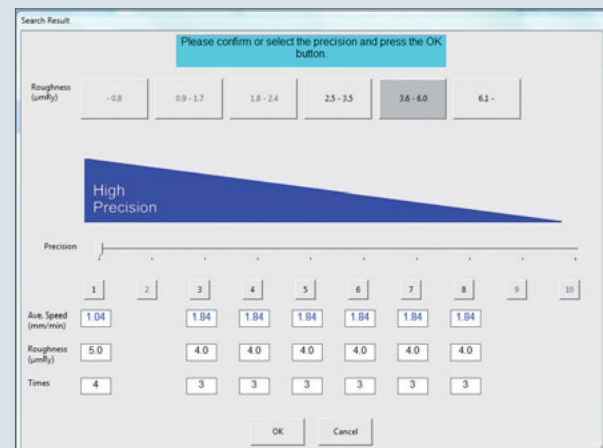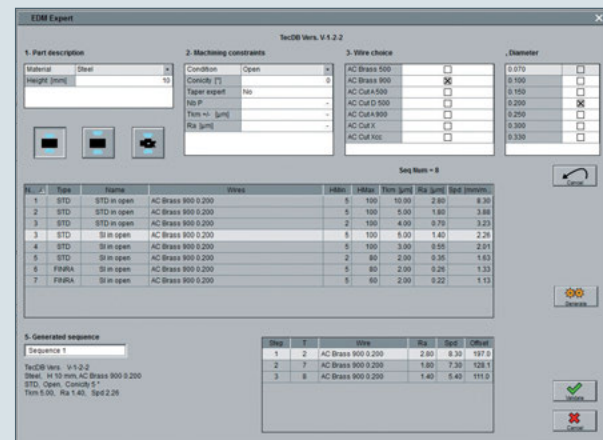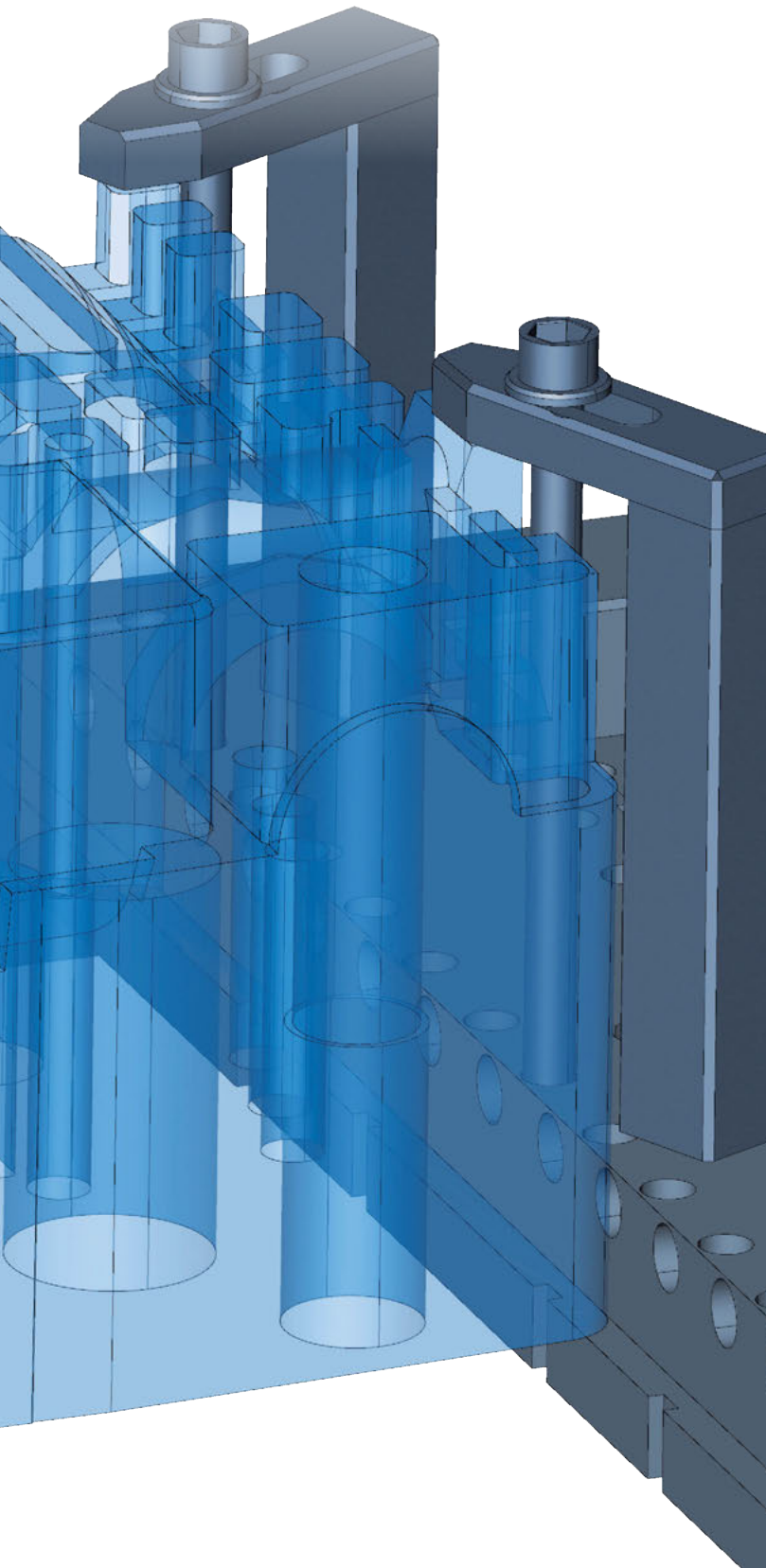
Headquarters   **OPEN MIND Technologies AG**
Argelsrieder Feld 5 • 82234 Wessling • Germany
Phone: +49 8153 933-500
E-mail: Info.Europe@openmind-tech.com
         Support.Europe@openmind-tech.com

UK   **OPEN MIND Technologies UK Ltd.**
Units 1 and 2 • Bicester Business Park
Telford Road • Bicester • Oxfordshire OX26 4LN • UK
Phone: +44 1869 290003
E-mail: Info.UK@openmind-tech.com

USA   **OPEN MIND Technologies USA, Inc.**
1492 Highland Avenue, Unit 3 • Needham MA 02492 • USA
Phone: +1 888 516-1232
E-mail: Info.Americas@openmind-tech.com

Brazil   **OPEN MIND Tecnologia Brasil LTDA**
Av. Andromeda, 885 SL2021
06473-000 • Alphaville Empresarial
Barueri • Sao Paulo • Brasil
Phone: +55 11 2424 8580
E-mail: Info.Brazil@openmind-tech.com

Asia Pacific   **OPEN MIND Technologies Asia Pacific Pte. Ltd.**
33 Ubi Avenue 3 #06-32 • Vertex (Tower B)
Singapore 408868 • Singapore
Phone: +65 6742 95-56
E-mail: Info.Asia@openmind-tech.com

China   **OPEN MIND Technologies China Co. Ltd.**
Suite 1608 • Zhong Rong International Plaza
No. 1088 South Pudong Road
Shanghai 200120 • China
Phone: +86 21 588765-72
E-mail: Info.China@openmind-tech.com

India   **OPEN MIND CADCAM Technologies India Pvt. Ltd.**
#369/4, 1st Floor • 2nd Cross • 1st 'B' Main Road
7th Block, Jayanagar (W) Bangalore – 560070
Karnataka • India
Phone: +91 80 2676 6999
E-mail: Info.India@openmind-tech.com

Japan   **OPEN MIND Technologies Japan K.K.**
Misumi Bldg. 3F • 1-17-18, Kichijojihigashicho
Musashino-shi • Tokyo 180-0002 • Japan
Phone: +81 422 23-5305
E-mail: info.jp@openmind-tech.co.jp

Taiwan   **OPEN MIND Technologies Taiwan Inc.**
Rm. F, 4F., No.1, Yuandong Rd., Banqiao Dist.
New Taipei City 22063 • Taiwan
Phone: +886 2 2957-6898
E-mail: Info.Taiwan@openmind-tech.com

**OPEN MIND Technologies AG is represented worldwide with own
subsidiaries and through competent partners and is a member of
the Mensch und Maschine technology group, www.mum.de**

OPEN MIND
T H E   C A M   F O R C E

We push machining to the limit

www.openmind-tech.com