



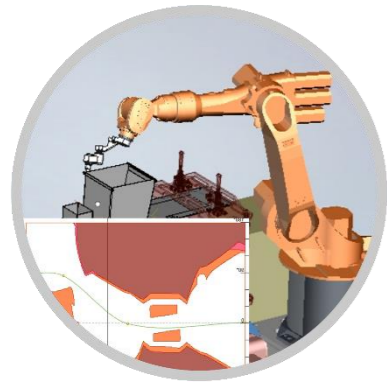
# Efficient offline programming solution for your industrial robots

A single environment for the offline programming (OLP) of industrial robots. An efficient robot machining solution for the rapid creation of complex collision-free 3D movements in native 6 or more axes code.



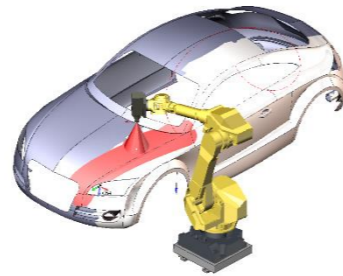
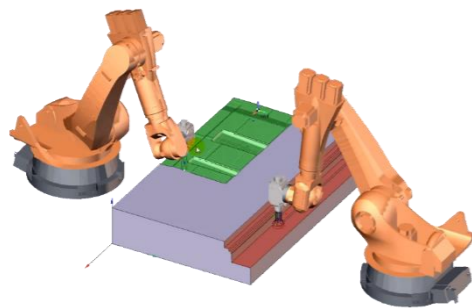
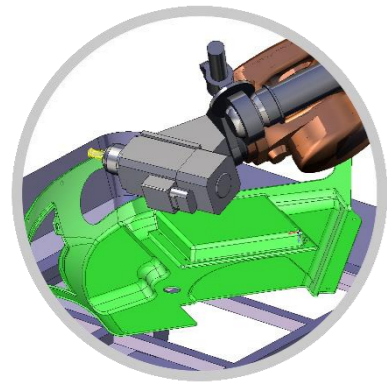
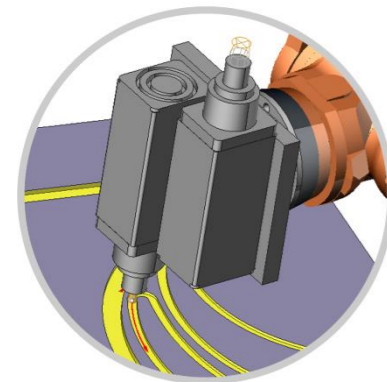
Images courtesy of KRAS BOSH STUDIO





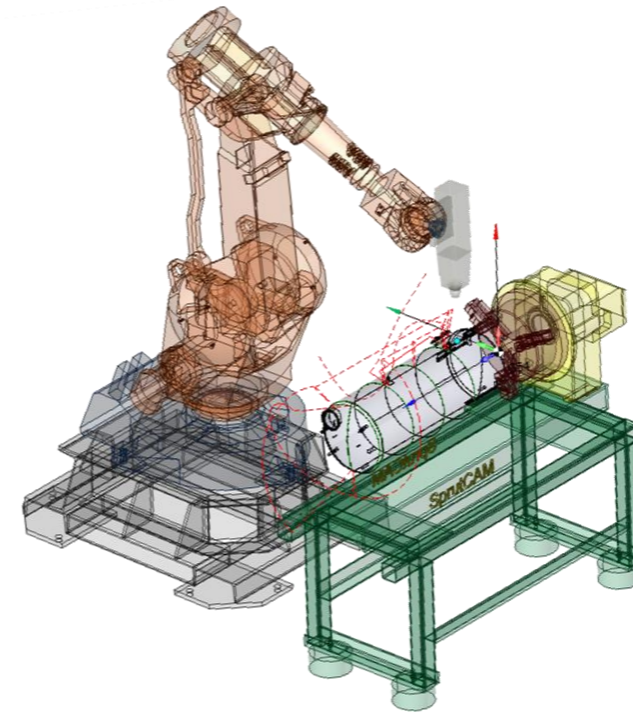
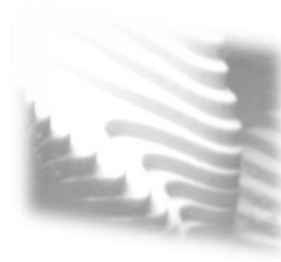
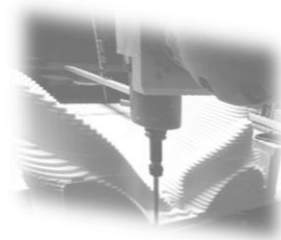
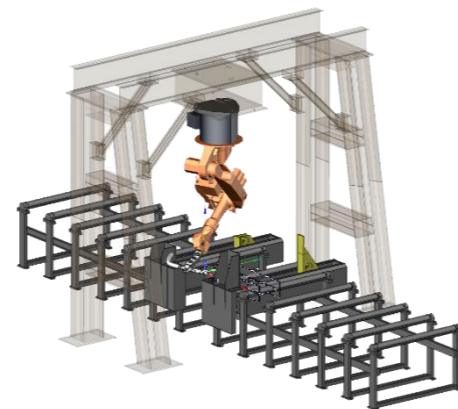
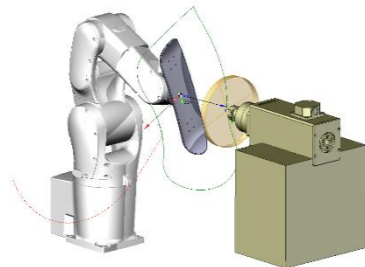
### ADVANTAGES AND BENEFITS

- Improved productivity through offline programming (reduction of robot idle periods and reduction of programming costs)
- Much faster than programming by teaching (without teaching points)
- Easy programming of robots with rotary tables, robots on rails
- Automatic optimization and search for collision-free motions
- Realistic machining simulation and verification
- Generation of robot's native NC code



### APPLICATIONS

- Milling (Stone / Wood / Foam / Resin)
- Deburring / Trimming
- Grinding / Polishing
- Cutting (Plasma / Laser / Waterjet / Knife)
- Welding
- Painting / Spray Coating
- Dispensing



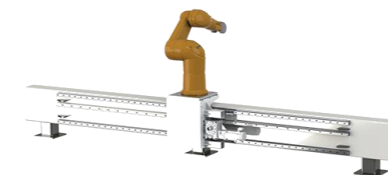
### TOOLPATH GENERATION

- An extensive range of toolpath strategies working directly with 3d models of the part and the workpiece are available
- Roughing toolpaths: parallel, equidistant, high-speed, adaptive roughing, roughing plane, roughing rotary machining, hole machining and many others
- Finishing toolpaths: finishing waterline, plane, scallop (3d constant step over), morph, rotary machining, 5 axis surfacing
- Contouring toolpaths: 2D, 3D & 5D contouring

All toolpaths are formed in the light of the specific robot kinematics. The robot's additional sixth and other degrees of freedom can be optimized either automatically or manually to extend the reach zone, avoid collisions or improve machining conditions.

### LIBRARIES

The SprutCAM Robot kinematic scheme library already covers a wide range of robots from all the major manufacturers, such as Fanuc, Kuka, Staubli, Yaskawa Motoman, Toshiba, Mitsubishi, Nachi, ABB etc. In addition, standard templates allow the rapid creation of new custom kinematic schemes for robots and robotic cells.



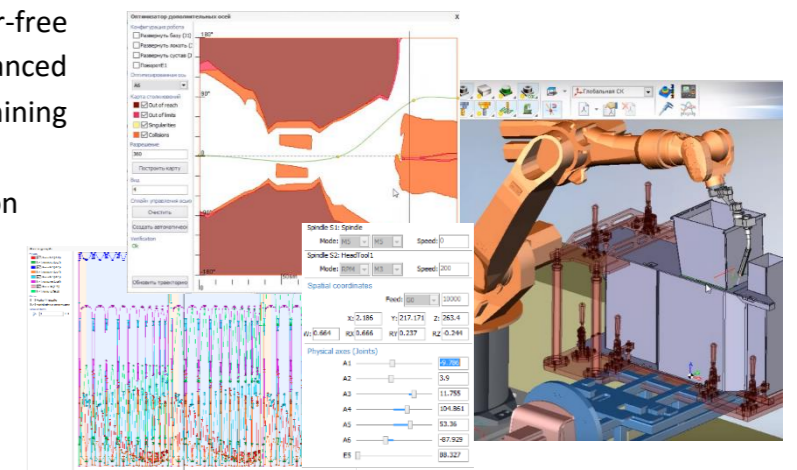
### ROBOT POSITION

Robot programming in SprutCAM Robot is performed with the robot's position and fixation in space taken into account — floor/wall/shelf/ceiling mount, any position of a robot inside a cell is supported. Both “part to tool” and “tool to part” configurations are allowed.

### OPTIMIZATION & SIMULATION

To guarantee the generated toolpaths are error-free and efficient, SprutCAM Robot offers an advanced module for machining simulation. Machining simulation in SprutCAM features:

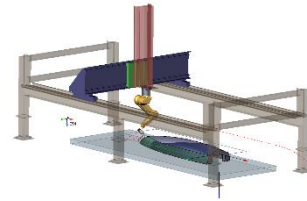
- Precise ‘real life’ robot kinematics simulation
- Material removal simulation
- Collisions detection
- Part gouging detection
- Robot singularities and out of reach zone detection





## POSTPROCESSING

The generated CLData is converted to native robot command codes by a postprocessor. Many ready to use postprocessors for all major brands are already available. In addition, the built-in Postprocessor Generator can be used to create new or adjust existing postprocessors.



## ADDITIONAL AXES

Simultaneous control of a robot and unlimited number of linear and rotary additional positioning axes are supported. One example of such application is a robot simultaneously moving on a rail and doing some milling, another example is the continuous rotary machining of a part with a robot and a rotary table. The additional axes can be either controlled automatically using a set of rules or manually with the special "robot axes optimizer" feature.



## WHAT'S NEW

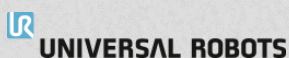
### Advanced collision monitoring

All types of collisions are checked for, not only cutting tools, but also toolholder, adaptors, reduction sleeves, etc. are monitored.

**Function of automatic collision avoidance** is added for obstacle avoidance by the tool axis.

### Associativity support of 3D model import in STEP or Parasolid formats

If an already used 3D model is edited outside of SprutCAM and re-imported into the project, it automatically 'matched' with the existing project model, so no re-selection of model features is required.



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