

# Product Description

## EASY-ROB™



MAR 2012

Version 1.904





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# EASY-ROB™

Product description

## The Product EASY-ROB™

With EASY-ROB™ you plan and verify your robot work cells on your PC. By checking the reachability, collisions, travel ranges and estimating cycle times, you will increase the reliability of the planning process and reduce the startup time.

EASY-ROB™ is a powerful simulation and planning software for robot cells and to create technical processes in a virtual world. Robot motions are programmed and visualized in a 3D Scene immediately – now with multiple kinematics.

### Advantages

- Assistance by the evaluation of new ideas
- Feasibility studies at reasonable price
- Increasing planning security
- Decreasing start-up time

### Applications

- Robot work cell layout planning
- Check reach abilities, collisions and travel, ranges
- Cycle time examination and estimation
- Offline programming
- Sales support and education
- Feasibility studies by the development of new machine concepts
- Individual product customization (API - Application Program Interface)
- Integration of own mathematic procedures and solutions (API)

You don't need a special high end equipment to run EASY-ROB™ - it will work on any standard Windows® PC. The program is as 32-Bit and 64-Bit application under Microsoft Windows available and uses the OpenGL™ graphics library.

## Basic functions

- Integrated standard Robot Library.
  - adept / b+m / Denso / Eisenmann VarioRobots / Güdel / igm / Kawasaki / Manz-Automation / Mitsubishi / OTC-Daihen / Unimation
- Modeling of individual robot kinematics, gripper, positioner and conveyors in Denavit-Hartenberg (DH) Notation und universal coordinates (**ROBMOD**)
- Integrated 3D CAD for primitives (cylinder, cone, sphere, cube)
- Import and Export of complex CAD data (**STL**, **3DS**, **IGP-Format**, **VRML I + II**, 97).
- Powerful programming language (**ERPL** – Easy-Rob Program Language).
- Integrated user interaction in the programming language (**ERCL** - Easy-Rob Command Language).
- Device and Project-Manager for administration of devices and projects
- Window for current executed robot program
- Online-Output of robot status data such as joint data, TCP position, cycle time)
- Motion types (Point to Point - PTP, Continuous Path – LIN, CIRC)
- Jerk free velocity profile
- TCP Trace as point or line with approach vector in different colors
- Changing of the view in full shaded mode while program execution
- Grab and release of environment bodies an other devices
- Hierarchical collision detection (bounded boxes, convex and concave hull) with tolerances
- Creating Tag points and Paths at the geometry
- Numerical solution for inverse kinematics.
- Application Program Interface (**API**) to integrate own C-Code algorithm for inverse kinematics, motion planning and interpolation, position control and dynamic robot model. Developments of user dialogs, sensor interfaces and post processors
- Simulation of the robot dynamic (PPI cascade controller with pseudo analog PI velocity control).
- Creating **AVI** movies.
- **STL** and **VRML I + II**, 97 output of the whole work cell layout with animation.
- Several options to extend the basic functionality or customizing.

# EASY-ROB™

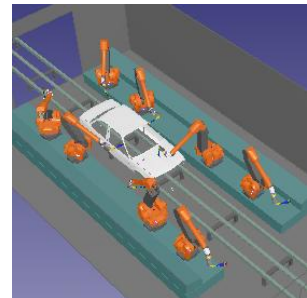
Product description

## EASY-ROB™ Versions

### EASY-ROB™ Multi-Program Version

Software to plan and verify your robot work cells on your PC, check reachability, collisions and travel ranges as well as cycle time estimations.

- The number of robots or kinematics in the work cell is not limited. Kinematics such as gripper, positioner and conveyors can be loaded without limits, mounted to each other and simulated.
- Multi-Program enables to run and simulate several robots and kinematics synchronized. The programs can "communicate" by IO-variables.



#### Robot – Libraries

- Standard Robot Library
  - adept / b+m / Denso / Eisenmann VarioRobots / Güdel / igm / Kawasaki / Manz-Automation / Mitsubishi / OTC-Daihen / Unimation
- Modeling of own specific robots, positioner, gripper, turn tables and user defined kinematics
  - Attributes i.e. Travel ranges, max. speeds and accelerations
  - Formula Parser with mathematical functions
  - Numerical Solver for inverse kinematics for individual robots.
- Optional robot libraries \*)
  - ABB / FANUC / KUKA / MOTOMAN / PKM DELTA / STAUBLI / TRICEPT

#### CAD Data - Import and -Export

- Modeling of simple parameterize 3D geometries, such as Cubes, Spheres, Cone, Cylinder
- Standard-CAD-Data-Import
  - IGP / STL ASCII und binary / 3DS / VRML I + II,97
- CAD-Data Standard- Export: STL binary, VRML II,97 und IGP Part file
- Optional CAD-Data-Import \*)
  - Neutral Interfaces: STEP

#### Layout planning

- Creating of unlimited paths, containing unlimited number of target locations (TAG Points). Each Path can be mounted to geometries or kinematics devices, to define the process. The devices will be located afterwards to satisfy specific requirements such as reachability.
- Monitoring of accessibility, travel ranges, speeds and accelerations
- Hierarchical collision detection with tolerances
- Individual measurement functions, to measure distances and circles

## EASY-ROB™ Versions

### Work cell simulation – programming of robots

- ERPL EASY-ROB™ Program Language
  - Language with robot motion commands to create a motion program
  - Digital signals and variables for program synchronization
  - Formula Parser with mathematical functions
- ERCL EASY-ROB™ Command Language
  - Language with simulation commands to enable collision, the TCP trace etc.
- History Diagram
  - Detailed protocol with graphical output to examine and document simulation results.
  - Export as jpg or bmp - file
- camera-function
  - Miscellaneous positioning of a camera in the work cell for an individual process view

### Project administration

- Device Manager
  - Administrates robots, devices, parts, fixtures and tools, which are stored with an image and a short description.
- Project Manager
  - Data base with visualization for custom specific archiving of work cells.

### Presentation

- Creating of Video files (AVI) and animated VRML-Sequences
- Optional available: „RunTime“\*) – to create protected work cells. This allows loading and simulating existing work cells with the free EASY-ROB™ - Viewer for presentation purposes for example.

### User panel – licensing

- Intuitive user panel
- ERC Searcher
  - Easy search function for EASY-ROB™ program commands in existing project examples.
- EASY-ROB™ can be started several times on the same PC
- Hardware related licensing method (PC-connected)
- Optional WIBU-KEY USB-Dongle\*): PC-independent licensing method
- Optional available: License manager \*) to organize administrate multiple EASY-ROB™ licenses

### System requirements

EASY-ROB™ runs on an IBM compatible Pentium PCs with Microsoft Windows® XP SP3, Windows® Vista Business and Windows® 7 Professional Ultimate & Enterprise with at least 1024 MB of RAM installed (2048 MB RAM is recommended). We recommend a three button mouse for better navigation. Graphic acceleration cards can really boost application performance. We recommend the nVIDIA GeForce or ATI graphics CPU with the OpenGL 2.0 driver installed and 256 MB VRAM

\*) optional available, not belonging part in this described item

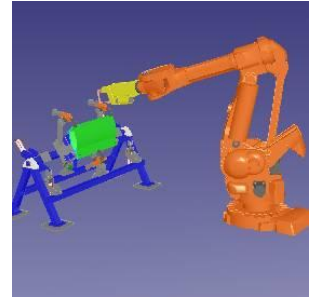
Item No.: er\_sw07

## EASY-ROB™ Versions

### EASY-ROB™ Single-Robot Version

Software to plan and verify your robot work cells on your PC, to check and verify reachability, collisions and travel ranges as well as cycle time estimations.

- For robot work cells with one “robot”. A robot has got at least 4axis and is able to move to a cartesian target (Tags). Kinematics such as gripper, positioner and/or conveyors can be loaded without limits, mounted to each other and simulated.
- A work cell can load one program to one device.  
This program controls all loaded devices in the work cell, one after the other and not simultaneously.



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- Standard Robot Library
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  - Neutral Interfaces: STEP

### Layout planning

- Creating of unlimited paths, containing unlimited number of target locations (TAG Points). Each Path can be mounted to geometries or kinematics devices, to define the process. The devices will be located afterwards to satisfy specific requirements such as reachability.
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- Individual measurement functions, to measure distances and circles

## EASY-ROB™ Versions

### Work cell simulation – programming of robots

- ERPL EASY-ROB™ Program Language
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**\*) optional available, not belonging part in this described item**

Item No.: er\_sw01

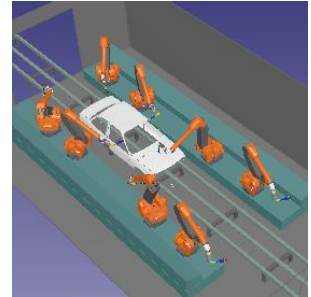
## EASY-ROB™ Versions

### EASY-ROB™ Education Multi-Program Version

For universities and school

Software to plan and verify your robot work cells on your PC, check reachability, collisions and travel ranges as well as cycle time estimations.

- The number of robots or kinematics in the work cell is not limited. Kinematics such as gripper, positioner and conveyors can be loaded without limits, mounted to each other and simulated.
- Multi-Program enables to run and simulate several robots and kinematics synchronized. The programs can "communicate" by IO-variables.



Descriptions see Multi-Program Version Item No. er\_sw07

Item No.: er\_sw07e

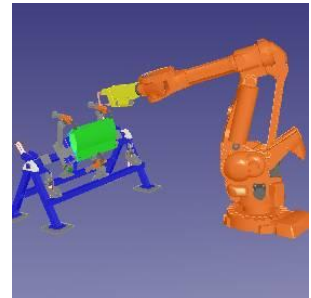
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### EASY-ROB™ Education Single-Robot Version

For universities and school

Software to plan and verify your robot work cells on your PC, to check and verify reachability, collisions and travel ranges as well as cycle time estimations.

- For robot work cells with one "robot". A robot has got at least 4axis and is able to move to a cartesian target (Tags). Kinematics such as gripper, positioner and/or conveyors can be loaded without limits, mounted to each other and simulated.
- A work cell can load one program to one device. This program controls all loaded devices in the work cell, one after the other and not simultaneously.



Descriptions see Single-Robot Version Item No. er\_sw01

Item No.: er\_sw01e

## EASY-ROB™ Versions

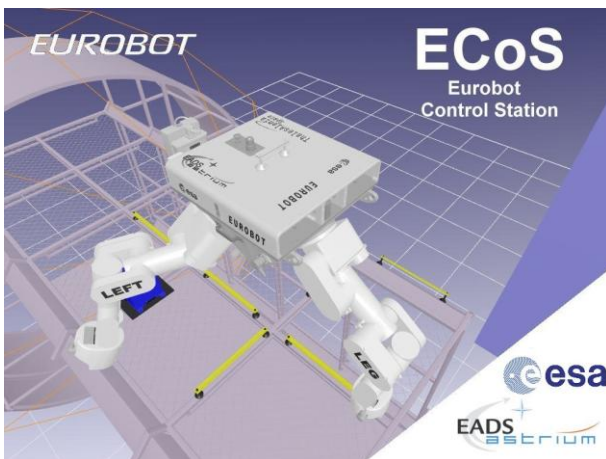
### EASY-ROB™ DLL Version

The EASY-ROB™ DLL Version allows the integration of the EASY-ROB™ functionality into your own applications. Using available API-Functions or the exported method class ER\_CAPI, the EASY-ROB™ DLL can be controlled completely from the user application.

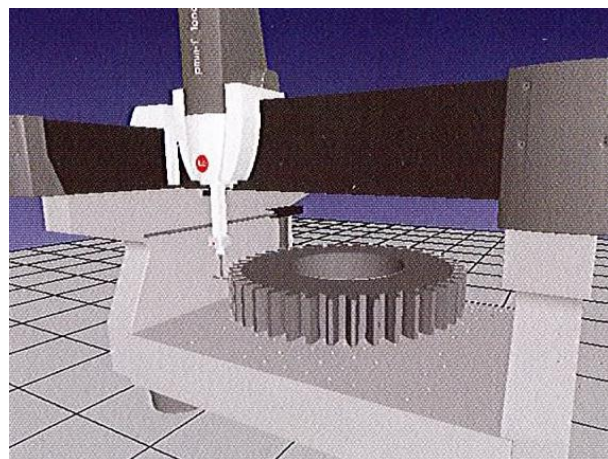
The EASY-ROB™ DLL starts as an OpenGL™ window without a title, a menu, toolbars and without status bar and can be placed by using Window-handles anywhere in your application.

Existing work cells, robots, device, tool etc. can be loaded, connected and controlled by API. The complete robotics functionality is available. In case of collisions or exceeding of travel ranges while simulation, EASY-ROB™ will report the events to the user application.

Die EASY-ROB™ DLL Version contains the capabilities of the Single-/Multi-Robot Version, plus the functionality of the API-UserDLL (Item No.: er\_api04).



Eurobot Control Station, EADS astrium



Quindos with I++ Simulator, Messtechnik Wetzlar, Hexagon Metrology

The application areas for the EASY-ROB™ DLL are versatile.

For the use of the EASY-ROB™ DLL we recommend Microsoft® Visual C++ Compiler.  
(use of C++ Builder with reservations)

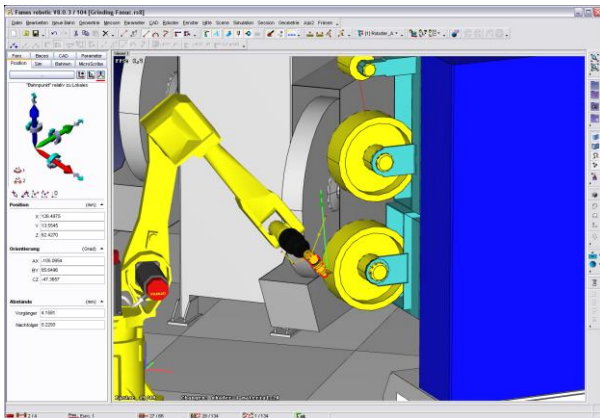
**For the individual implementation we provide service and support.**

Art. Nr.: er\_sw05

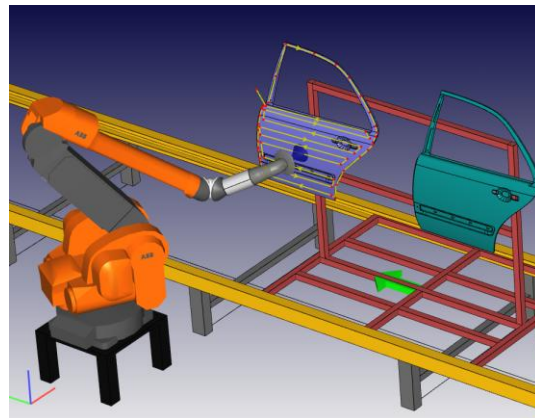
## EASY-ROB™ Versions

### EASY-ROB™ Simulation Kernel

The purpose of the EASY-ROB™ Simulation Kernel is the same like the EASY-ROB™ DLL Version: to be integrated in another (own) application. The version only provides API-functions/services for robotics functionality. The other (own) application is in charge for the 3D visualization and the administration of all geometries and handles of all kinematics. The EASY-ROB™ Simulation Kernel will deliver one handle back for every loaded kinematics.



Offline Programming system Famos robotic®, carat robotic innovation



Offline Programming system: Painting with Conveyor-Tracking

#### Robot Kinematics

- Load existing EASY-ROB™ robots, devices, tools, etc.
- All standard and optional robots available
- Forward transformation
- Inverse coordinate transformation
- Access to all robot axis coordinate systems

#### Motion planning and –execution

- Tool leading movement
- Workpiece leading movement
- Track Motion
- Conveyor Tracking
- Tracking Windows
- External positioner
- Wait
- Automatic reduction of the speed
- Cycle time estimation

The available API-Functions respectively services are dependent to the RRS-interface (Realistic Robot Simulation).

The EASY-ROB™ Simulation Kernel exports ANSI C-Functions. We recommend Microsoft® Visual C++. C++ Builder and Delphi are possible as well.

**For an individual implementation we offer our service.**

Art. Nr.: er\_sw06

# EASY-ROB™

Product description

## Robot Libraries

The Standard robot library is included in EASY-ROB™ Single-Robot and the Multi-Program Version.

All common robots from well known brands like ABB, adept, b+m, Comau, Denso, Fanuc, Guedel, Kawasaki, Kuka, Mitsubishi, Motoman, Reis, Stäubli, Tricept are available in EASY-ROB's™ Robots Libraries. Not existing robots, machines, tools and handling systems can be rebuild in EASY-ROB™.

All models containing the same characteristic values like travel ranges, axis speeds, -acceleration, -offsets and –turns like the real robot. To get real results all attributes can be changed and saved in a new model.

Not existing models can be modelled in EASY-ROB™ by the user himself or as service by EASY-ROB.

### **Standard Robot Libraries**

#### EASY-ROB™ **adept** Robot Library

Robot types: Cobra i600, i800, s600, s800, Viper S650, S850, S1300, S1700

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#### EASY-ROB™ **b+m** Robot Library

Robot types: T1-LL, T1-LM

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#### EASY-ROB™ **COMAU** Robot Library

Robot types: H4, H4L, NH3

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#### EASY-ROB™ **DENSO** Robot Library

Robot types: HM-4085, HS-4535, VM-6083, VM-60B1, VP-5243, VP-6242, VS-6556, VS-6577

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#### EASY-ROB™ **GUEDEL** Robot Library

Robot types: FP Portal, roboFlex\_RF, ZP Portal

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#### EASY-ROB™ **IGM** Robot Library

Robot types: RT280, RT330, RTI2000

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## Standard Robot Libraries

### EASY-ROB™ [KAWASAKI](#) Robot Library

Robot types: FS30L, FS30L-BL, ZX165U

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### EASY-ROB™ [Manz-Automation](#) Robot Library

Robot types: AR-6560, AR-6590, SR-5560, SR-5580

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### EASY-ROB™ [MITSUBISHI](#) Robot Library

Robot types: RV\_12S, RV\_12SL, RV\_1A, RV\_2A, RV\_3SB, RV\_4A, RV\_6S, RV\_6SL

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### EASY-ROB™ [OTC-Daihen](#) Robot Library

Robot types: AX-V6, AX-V6L, AX-V133, AII-B4, AII-B4L, AII-PH-501, AII-PF-XXX

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### EASY-ROB™ [Reis](#) Robot Library

Robot types: RV6, RV6-L

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### EASY-ROB™ [UNIMATION](#) Robot Library

Robot types: PUMA-560, PUMA-760, PUMA-761, PUMA-762

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## Optional Robot Libraries

Robot Libraries with own license. Without license only axis can be moved.

EASY-ROB™ [KUKA](#) Robot Library

Art. Nr.: er\_ir01

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EASY-ROB™ [Stäubli](#) Robot Library

Art. Nr.: er\_ir02

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EASY-ROB™ [Tricept®](#) Robot Library

Art. Nr.: er\_ir04

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EASY-ROB™ [ABB](#) Robot Library

Art.Nr.: er\_ir05

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EASY-ROB™ [Motoman](#) Robot Library

Art.Nr.: er\_ir06

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EASY-ROB™ [FANUC](#) Robot Library

Art.Nr.: er\_ir07

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EASY-ROB™ [PKM-Delta](#) Robot Library

Art.Nr.: er\_ir09

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# EASY-ROB™

Product description

## Options and API's

Beside the basic functions of EASY-ROB™ Single- and Multi-Robot Version several options und API's (Application Program Interface) are available to extend the software.

### EASY-ROB™ Remote Control

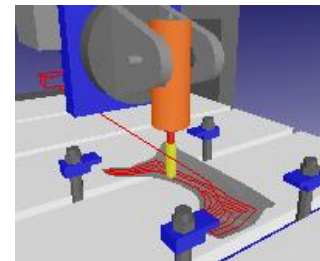
The EASY-ROB™ remote control feature with TCP sockets allows it to interchange data with other programs, such as Robot or NC machine controller. An Application Program Interface (API) is provided with the Dynamic link library (Dll) "er\_remote.dll".

Art. Nr.: er\_op01

### EASY-ROB™ NC-Simulation

The option NC-Simulation allows to model your NC machine using 3D data from a CAD or CAD/CAM Systems. The ROBMOD modelling feature enables you to model 3-, 4 axis as well as 5 axis machines, even machines with more axis can be created.

Additional to the ERPL (EASY-ROB Program Language), EASY-ROB can run NC Code based on DIN 66025\*. (\*Deviant can be adapted, e.g. APT Code)



```
N00001 G90
N00002 G00 X323.0Y-11.5 Z649.0 A39.9860 B114.0308
N00003 G01 X-100.0Y0.0 Z260.0 A0.0000 B90.0000
N00004 G02 X423.0Y0.1244 I161.5 J0.0
...
```

NC -Code is executed and the Machine and Tool motions are visualized immediately. The "Program Window" shows the current executed block number. Several output windows display the machine status data, such as the TCP location, machine axis values, -speeds and -accelerations, motion time of current executed block and the total cycle time. The Collision feature COLL detects collisions during the NC program simulation. Critical machine data are monitored, and the simulation can Stop ON collision, travel range exceeded and if the max. axis speed or acceleration range is exceeded. The "Teach Window" allows to execute every block in single step mode and also backwards. The complete 3D Scene can be pan, tilt and zoom while program running.

Art. Nr.: er\_op02

### **EASY-ROB™ License Manager**

The Licence Manager is a floating license program to administrate EASY-ROB licenses from a License-Server running on Windows® and use EASY-ROB via your local network. The License Manager allows to execute EASY-ROB from every PC in your local network (LAN). Here, the number of simultaneous used EASY-ROB™ clients, is limited by the number of total purchased licenses.

Art. Nr.: er\_op03

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### **EASY-ROB™ MATLAB Remote**

The EASY-ROB™ MATLAB® Remote Control Interface makes it possible to use EASY-ROB™ as 3D - visualization system for MATLAB® . The interface is based on a standardized TCP/IP Socket connection so that the data exchange is possible in the LAN and via Internet.

The option MATLAB® Remote contains the option EASY-ROB™ Remote Control.

Art. Nr.: er\_op04

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### **EASY-ROB™ Multi-Kin**

The option “EASY-ROB™ Multi-Kin“ enables you to load and run any number of robots (\*.rob-files) with an inverse kinematics solution and more than three axis/joints into the work cell. Robots with up to three axis/joints such as conveyors, positioner or xyz gantries, don't need the option “Multi-Kin“ and can be loaded as often as required.

With option “Multi-Kin“, all robots / kinematics in a simulation are able to move to cartesian positions. That means that you can simulate both: processes between robots and processes between robots and e.g. conveyor in one simulation.

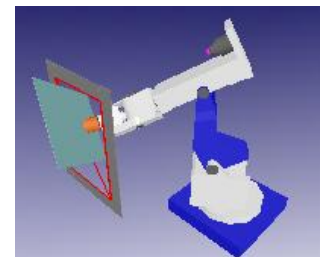
There is only one program in the work cell which contains all commands for all robots.

Art.Nr.: er\_op06

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### **EASY-ROB™ AutoPath**

The EASY-ROB™ option AutoPath™ allows creating a collision free path. The calculation facilitates the work of the operator substantially. In the first step, the user selects a collision free start and end location. Hereby both locations must satisfy the robots travel ranges as well. With “Find Path“ a collision free path is calculated. As a result several intermediate joint values are generated and shown in the AutoPath™ Dialog to take them over into the Teach Window. An optimal result is achieved if the process Know How of the user is combined with AutoPath™.



Remark: Only for customers with a license for at least one (1) EASY-ROB™ Version

Art. Nr.: er\_op07

## **EASY-ROB™ Multi-Program**



The option "EASY-ROB™ Multi-Program" enables the user to load for every single kinematic or for every robot a separate program and run them all synchronized.

The programs can "communicate" by IO-variables and can be synchronized by using commands like „Wait\_Until\_Signal\_Set“ and „Wait\_Until\_Signal\_Unset“.

The maximum number of programs is limited to the number of the loaded kinematics. But the number of loaded kinematics is unlimited.

Multi-Program is available for EASY-ROB™ Single- and Multi-Robot-Version.

Art. Nr.: er\_op08

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## **EASY-ROB™ RunTime**

The option RunTime allows creating protected work cells and simulate them in the freely available EASY-ROB™ DEMO. Afterwards Screenshots, AVI videos and animated VRML files can be produced from the DEMO.

The RunTime option is ideal to support your sales and for the use in customer's presentations. Simulations and results can be transmitted according to demand to the end user or be added to an offer.

Art. Nr.: er\_op09

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## Options and API's

### **EASY-ROB™ API-INV Inverse Kinematics**

With the option API-INV you can develop and program your own inverse solution.

Application Program Interface (API) for inverse kinematics allows to develop user defined functions written in C to solve inverse kinematics problems (IKP), parallel kinematics machines (PKM) and numerical solutions.

Many exported functions giving full access to all robot data, i.e. kinematics robots lengths, software travel ranges, joint directions, tool frame, TCP location, etc. Mathematical routines to handle homogeneous transformation matrices are available as well as trigonometric functions for angle, triangle and trapezoid calculations.

A project for the Microsoft Visual C++™ Compiler is available and will generate the Dynamic Link Library (DLL) er\_kin.dll. Within the er\_kin.dll, different solutions are kept.

Art. Nr.: er\_api01

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### **EASY-ROB™ API-IPO Motion Planner**

EASY-ROB™ API-IPO, the Application Program Interface (API) for motion planning allows to develop user defined motion planner for the motion types: PTP, LIN and CIRC written in C.

A project for the Microsoft Visual C++ Compiler is available and will generate the Dynamic Link Library (DLL) er\_ipo.dll. Within the er\_ipo.dll, different routines for the motion types PTP, LIN and CIRC are kept.

Art. Nr.: er\_api02

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### **EASY-ROB™ API-DYN Dynamics**

EASY-ROB™ API-DYN, The Dynamic feature allows considering the dynamic model of the robot and the position controller during simulation. The Application Program Interface (API) for dynamics allows to develop user defined functions written in C for the dynamic robot model and the position controller.

A project for the Microsoft Visual C++ Compiler is available and will generate the Dynamic Link Library (DLL) er\_dyn.dll. Within the er\_dyn.dll, different routines are kept for an easier comparison of different controller.

Art. Nr.: er\_api03

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## Options and API's

### **EASY-ROB™ API-UserDII**

The option API-UserDII will adapt EASY-ROB™ individual to your needs.

Own dialogs can be developed and loaded automatically with every start of EASY-ROB™.

Frequently used functions like load / save of workcells and robots, jogging of axis or the TCP, Simulation-Start,-Stop or -Abort, TCP-Trace- und collision On/Off, etc. can be combined and used in one dialog.

Beside all available robot functions own calculations can be integrated to extend the functionality. A TCP/IP connection can be established to communicate with an external process / controller.

All changes like changing the axis positions will be visualized in EASY-ROB™

If e.g. a collision will be found while a simulation, EASY-ROB™ will report this event to the user application (API-UserDII) and decisions can be made.

By using the API-UserDII the whole range of functionalities of the Microsoft® Visual C++ Compilers is available to create dialogs, buttons, lists, edit arrays and check boxes.

More than 600 API-Functions – exported by EASY-ROB™ - are available.

Art. Nr.: er\_api04

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### **EASY-ROB™ API-Post-Process**

Application Program Interface (API) to modify and extend two Post-Processor examples. The available examples convert an ERPL Program into an ABB S4 Rapid Program or into a KUKA KRL Program. They are programmed in C/C++ and can be modified individual.

Other languages can be generated by corresponding changes of the examples. The number of Post-Processes is not limited.

Art. Nr.: er\_api05

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### **EASY-ROB™ API-Sensors**

Interface to connect external devices like SpaceMouse or devices to record joint values and Cartesian positions in the room to visualize the data direct in EASY-ROB™.

The interface is open and programmable via API.

Art. Nr.: for free

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# EASY-ROB™

Product description

## CAD Data Import

EASY-ROB™ allows importing nearly all available 3D CAD data generated by different CAD-Systems. In this conjunction we access powerful tools with a good price ratio performance and the ability to export STL, 3DS or IGP.

EASY-ROB™ by itself allows to import and to convert the neutral STEP Data format.

### Standard neutral CAD Interface

- ▶ STL ('ASCII, binary, binary color)
- ▶ 3DS
- ▶ VRML II,97

### Optional neutral CAD Interface

- ▶ STEP

## EASY-ROB™

Product description

### EASY-ROB™ Viewer

The new free of charge EASY-ROB™ Viewer allows to simulate existing work cells. Program specific functions such as different views, start, stop or creating video files are available. This application is especially developed for marketing staff and to improve presentations



The user can load and simulate existing protected work cells, create video files (AVI) and animated VRML-files.

If you have questions regarding EASY-ROB™, just contact us. You will find our contact data at the end of this document.

You can download the EASY-ROB™ Viewer from <http://www.easy-rob.com> for free.

# EASY-ROB™

Product description

## Service

### Individual Service

We provide service in various areas. Consulting, training or a special adaptation of EASY-ROB™ - we will support you.

To fulfil all requirements and to meet high standards we offer individual service.

#### 1. Training

Basic training to learn how to use EASY-ROB™ or individual training for advanced user – we provide both in the clients company and in the headquarter of EASY-ROB in Frankfurt.



#### 2. Service in simulation tasks

Service in simulation (layout planning / feasibility checks) with EASY-ROB™.  
The client will get the results in the EASY-ROB™-format. With the tool EASY-ROB™ Demo (freeware) the client can load and simulate the data.  
On top of the simulation data we can provide AVI files respectively animated VRML sequences.

#### 3. Individual adaptation of the product

We provide support for the individual adaptation / enhancement of the product EASY-ROB™ by the API-options.

#### 4. Design of new concepts

Support in design of new concepts for machines respectively special kinematics by developing the inverse kinematics.

*„Just give us call – we will help you.“*

# EASY-ROB™

Product description

[License / Hardware](#)

## License key for EASY-ROB™

There are three different solutions for the license key:

### 1. HardwareNumber

Every computer has a unique hardware number. The license file "*license.dat*" of EASY-ROB™ will license the software for the computer with the appropriate hardware number.

### 2. WIBU-KEY USB Dongle



The WIBU-KEY Dongle has a unique identification number. The license file "*license.dat*" will license the software for the Dongle with the appropriate hardware number. You can run the software after installation on every computer you put the Dongle on\*.  
\*) you have to install the driver for the Dongle once.

Art. Nr.: er\_hw03

### 3. EASY-ROB™ License-Manager

Floating license program, to organize and administrate several EASY-ROB™ licenses by a license-server under Windows®. The license manager allows the start of EASY-ROB™ from any computer in the local net. The license for the license manager can be based on a hardware number or WIBU-KEY Dongle.

Art. Nr.: er\_op03

## License Agreement

- EASY-ROB™ 3D Robot Simulation Tool is a registered trade mark, developed and copyright by Stefan Anton.
- EASY-ROB™ can be used for educational- and commercial purposes.
- It is not allowed to use an EASY-ROB™ Education- or Classroom-License for commercial or industrial purposes.
- EASY-ROB™ is not in charge and does not give warranty for any damages occurring after a simulation with EASY-ROB™.
- It is not allowed to resell EASY-ROB™ to other persons without an approval by Stefan Anton in a written form.
- EASY-ROB™ Viewer Version can be used for presentation purposes.
- It is not allowed to give the license key to other persons without an approval by Stefan Anton in a written form.

## System requirements / Hardware

EASY-ROB™ runs on an IBM compatible Pentium PCs with Microsoft Windows® XP SP3, Windows® Vista Business and Windows® 7 Professional Ultimate & Enterprise with at least 1024 MB of RAM installed (2048 MB RAM is recommended).



We recommend a three button mouse for better navigation.

EASY-ROB™ supports the 3D Mouse (Space Mouse) from 3DConnexion. The three dimensional navigation through your robotics plants is in a much more intuitive and natural way.



Image: 3DConnexion, <http://www.3dconnexion.com>

Graphic acceleration cards can really boost application performance. We recommend the nVIDIA GeForce or ATI graphics CPU with the OpenGL 2.0 driver installed and 256 MB VRAM



## EASY-ROB™

Product description

[Contact](#)

### EASY-ROB 3D Robot Simulation Tool

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Web: [www.easy-rob.com](http://www.easy-rob.com)

### EASY-ROB Customer area

Online available: Program Updates and Robot libraries

Web: [www.easy-rob.com/en/special/customer-area](http://www.easy-rob.com/en/special/customer-area)

Access data:

User: customer  
Password: \*\*\*\*\*

# EASY-ROB™

Product description

[Notes](#)