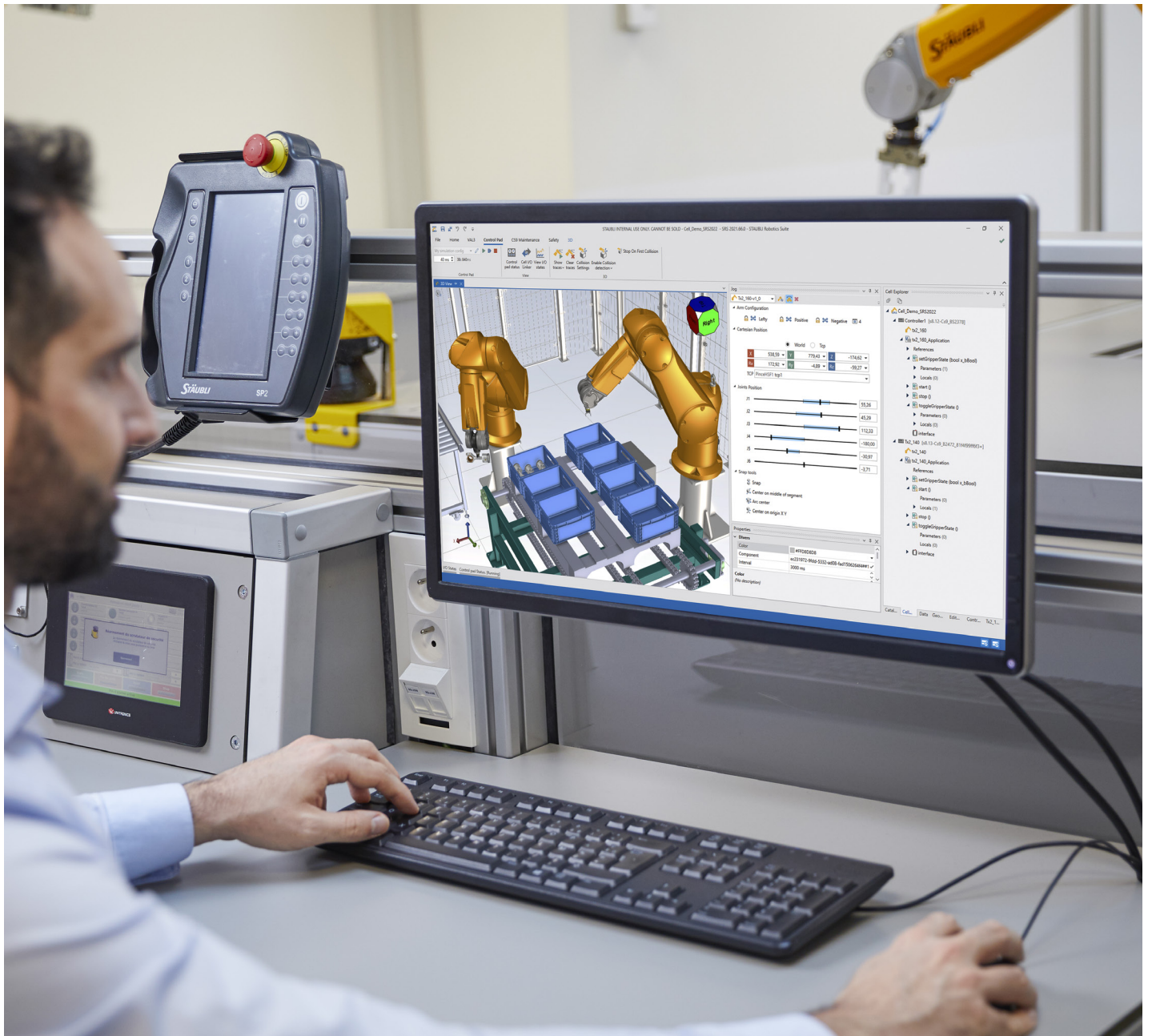


# Stäubli Robotics Suite

Robotics | Experts in Man and Machine



STÄUBLI VISION

# Experts in Man and Machine



“Today, our robots work both for, and with, people. They have to be fast and precise, collaborative and agile, user-friendly and highly mobile. In all kinds of industries, they redefine performance. Even in the most sensitive environments, they make production smarter. Providing smart data, in an easily connected world, where we share our expertise. A world of solutions.”

People drive change, robots accelerate the pace.

**Christophe Coulongeat,**  
Executive President Robotics

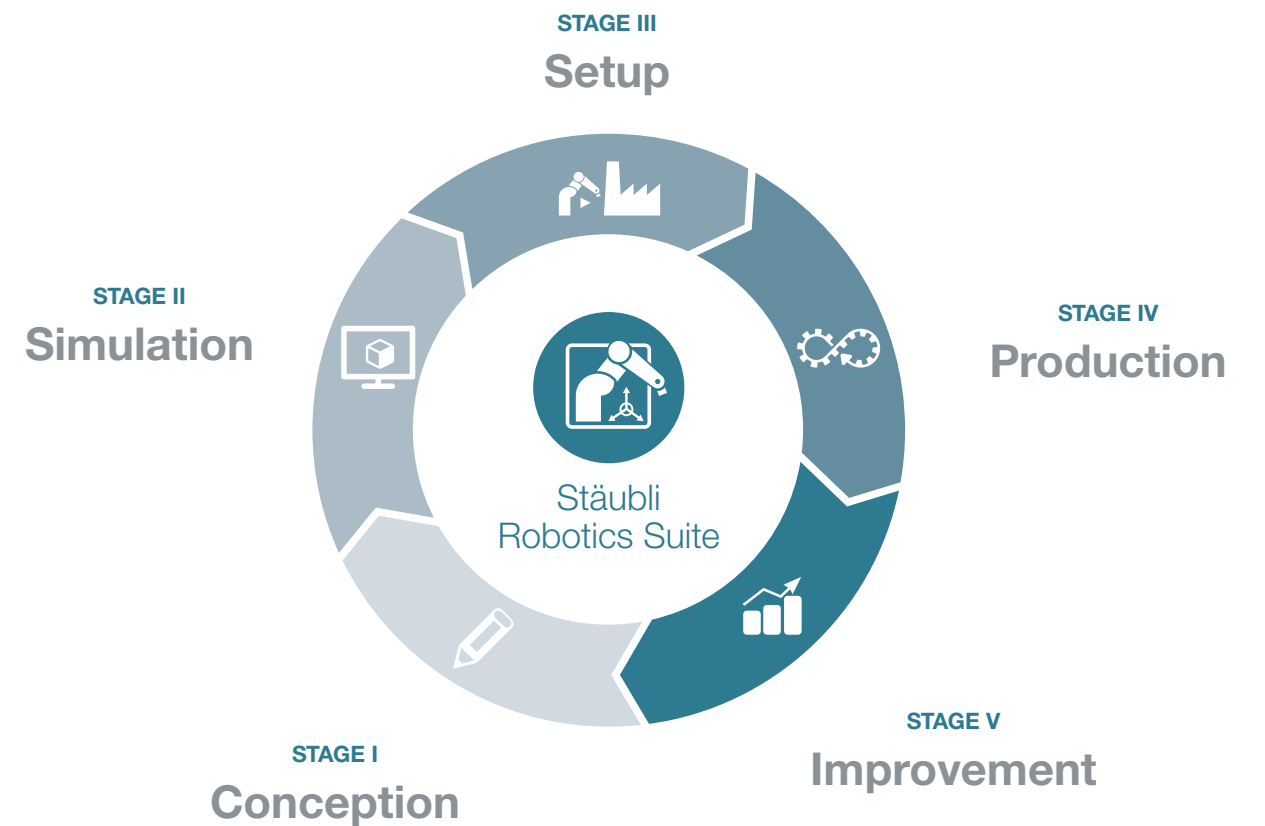
STÄUBLI ROBOTICS SUITE 2022

# A powerful PC environment for today's smart production

Stäubli Robotics Suite is a broad PC software environment which simplifies managing your robot system. Starting from conception and simulation over setup to production, it also enables easily

a permanent improvement of your robot applications. It guides you clearly through the process of simulating, developing and debugging your robot programs all the way to the final validation and transfer of

any system data. Due to its versatility of applications it is the ideal smart production tool offering multi-screen support running on windows operating system.







STAGE I: CONCEPTION

# Providing a quick overview of the robot feasibilities

Stäubli Robotics Suite is enabling anybody to evaluate automation concepts easily in a 3D environment, even without robot

programming experience. The new powerful 3D engine is offering more user-friendly operation and realistic rendering. Quick

and easy concept validation is ensured due to the following Stäubli Robotics Suite capabilities:

Robot and robot options import from Stäubli Robot Library

Robot options always changeable on the fly through robot properties [NEW]

Easy reachability and accessibility check (green = reachable / red = out of reach)

Working envelope and cell volume validation

Snap function for easier robot positioning inside your virtual cell [NEW]

Easy static robot replacement by simulated robot with Snap replace [NEW]

3D drag and drop import for faster individual cell and gripper concepts [NEW]

Embedded component library for easy reuse of standard or custom 3D elements [NEW]



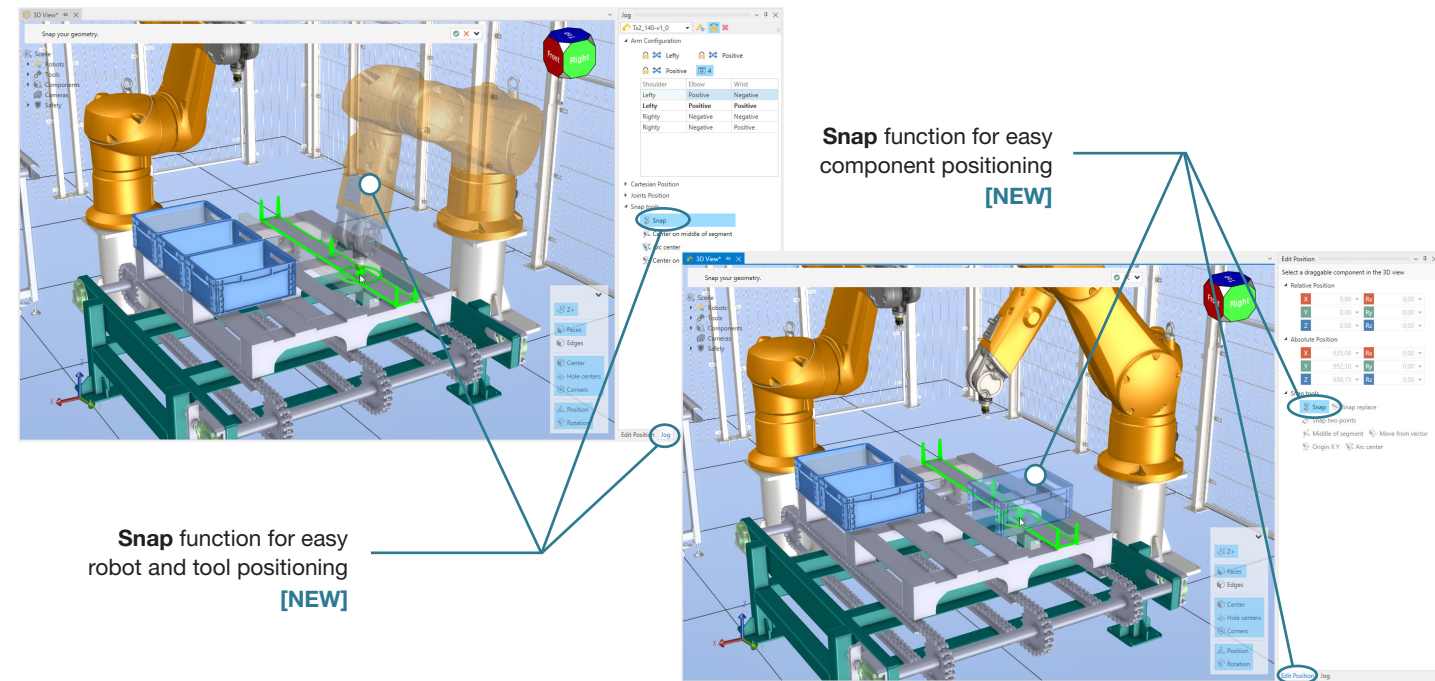
STAGE II: SIMULATION

# Comfortable visualization and validation of your cell concept



During the stage of simulation Stäubli Robotics Suite allows even more realizing functionalities.

Based on your concept evaluation, Stäubli Robotics Suite enables a simple completion with detailed robot, cell, tool and part simulation features:



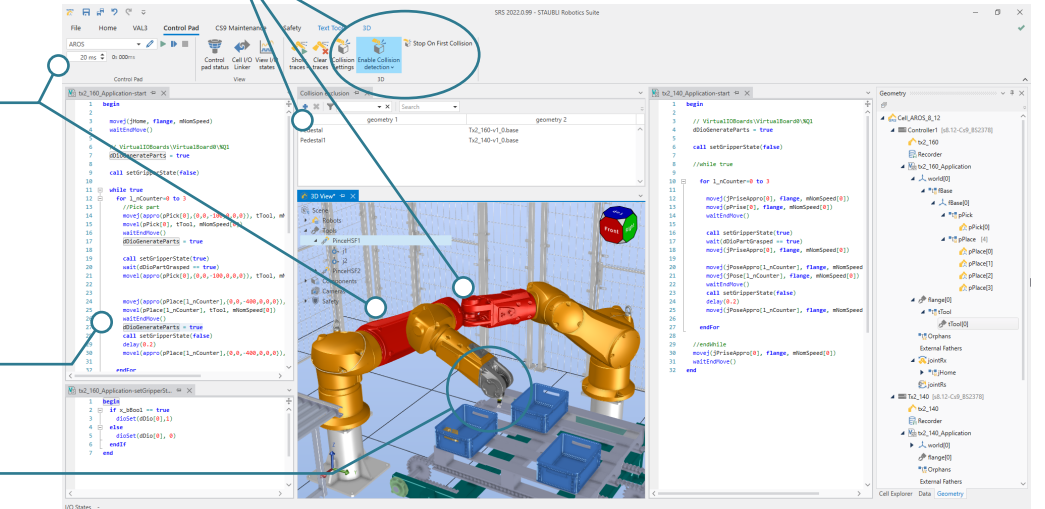
Implemented collision detection with any 3D object

Usage of Stäubli emulator offering realistic system behavior

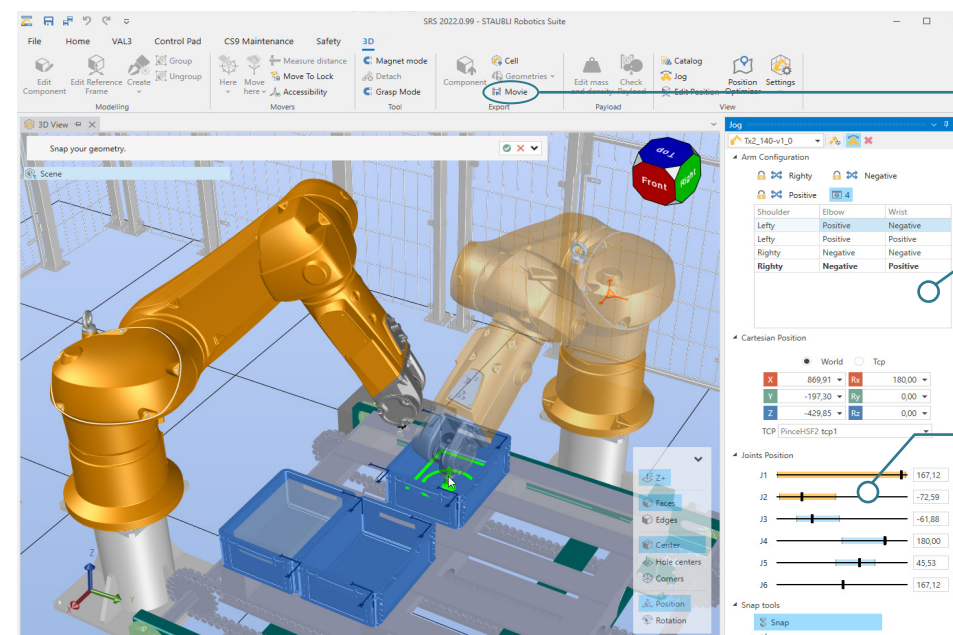
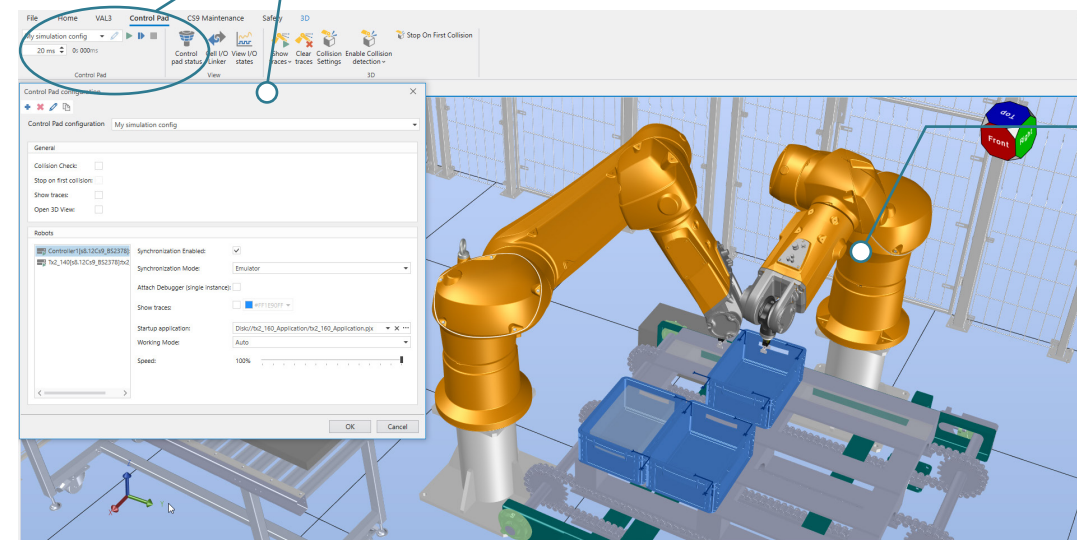
VAL 3 code basics for setup phase

Multi-robot support for individual application simulation

Control pad managing the simulation startup behavior(s) (multi robot support)



Full realistic motion control and cycle time like on a real Stäubli system



Integrated screen movie capturing

Arm configuration lock, cartesian and joint positioning for more efficient manual jogging in 3D environment

Visualization of required joint range for evaluation of effective joint range limitation

Physical I/Os	Description	Physical link	Format	Logical Name
<b>Physical I/Os</b>				
CPT 9.x RE/ECS V4.2 [2017/2018]				
<b>Digital Inputs</b>				
%I0	Bit_Byte_0_Bit_0	F86855A6-E431-4840-B6C8-8080636A026C		io_TcpMQTT : dPartnVok[0]
%I1	Bit_Byte_0_Bit_1	D9917C78-B2C3-4CFB-A661-41D6F884ED46		
%I2	Bit_Byte_0_Bit_2	388FCB27-10EE-4E30-A770-75B2B85AC09		
%I3	Bit_Byte_0_Bit_3	F444FA3-FF34-4A3A-BE84-AF8466A0DBAE		
%I4	Bit_Byte_0_Bit_4	03F368A8-AD15-4A54-AC64-D24087625F4		
%I5	Bit_Byte_0_Bit_5	96C72775-56D2-446D-A584-DF082A58EE4		
%I6	Bit_Byte_0_Bit_6	1AF11898-76AC-4F64-BA54-3F4AF9C0454C		
%I7	Bit_Byte_0_Bit_7	749CD28F-4777-438D-BAE9-D8527EBAF548		
<b>Digital Outputs</b>				
%Q0	Bits_Byte_0_Bit_0	DF9EE14-A41E-4058-AB74-0E9128A986		io_TcpMQTT : dPartnVok[0]
%Q1	Bits_Byte_0_Bit_1	F33F3F14-9FD2-4F54-A06D-82F0EF10A867		
%Q2	Bits_Byte_0_Bit_2	80F64D5E-0E38-4C45-861F-AF04618EA1AD		
%Q3	Bits_Byte_0_Bit_3	8A023A38-6F64-42ED-82F7-08FD1C211FF1		
%Q4	Bits_Byte_0_Bit_4	D0781ECF-8DA6-4561-9C3D-E78EF7DA2193		
%Q5	Bits_Byte_0_Bit_5	6F154F2B-1CBA-4140-AFEF-809D3D1CF7D2		
%Q6	Bits_Byte_0_Bit_6	489081B5-F21A-4289-A0F9-663C08596636		
%Q7	Bits_Byte_0_Bit_7	0041770D-F371-49FB-96C5-CF21386F983E		
<b>Analogue Inputs</b>				
<b>Analogue Outputs</b>				
CPU0 CPU				

Prearrangement of I/O mapping with physical I/O editor



STAGE III: SETUP

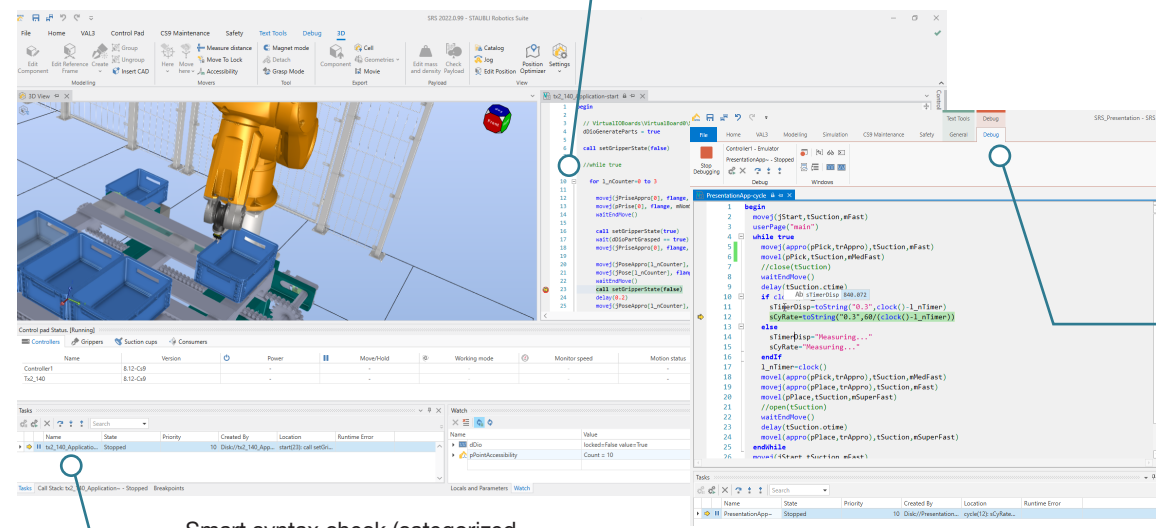
# Entire realization of individual customer needs



Stäubli Robotics Suite is your key to fully manage any Stäubli robot system and giving access to all the powerful controller functionalities of Stäubli Robotics

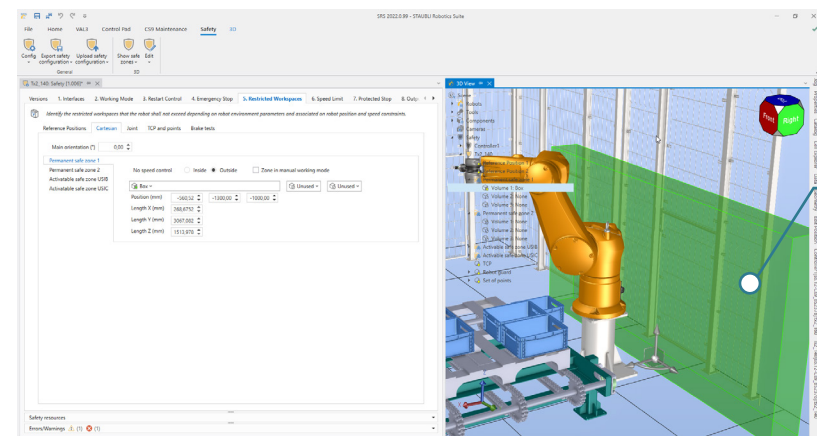
Controls including safety. An easy-going implementation is guaranteed by various functionalities:

Integrated VAL 3 development environment with auto-completion, collapse and expand function of code, automated code inspection, call tree visualization and many more



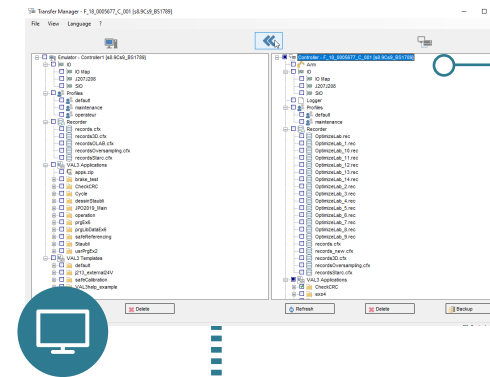
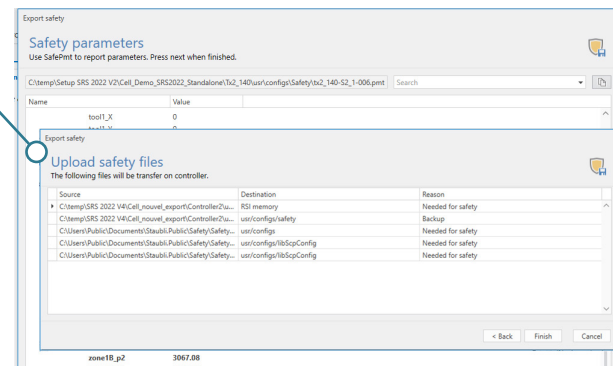
Smart syntax check (categorized and directly linked to the issue)

Wide range of online debugging functionalities

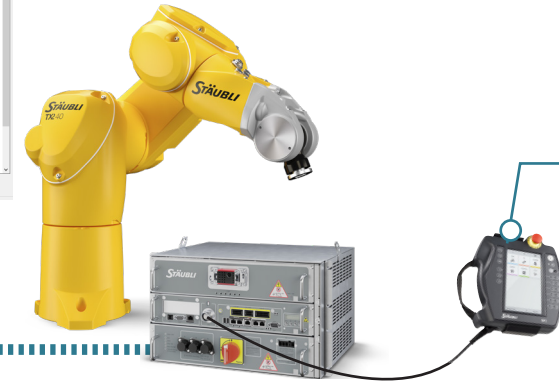


Safety configuration from industrial up to collaborative applications

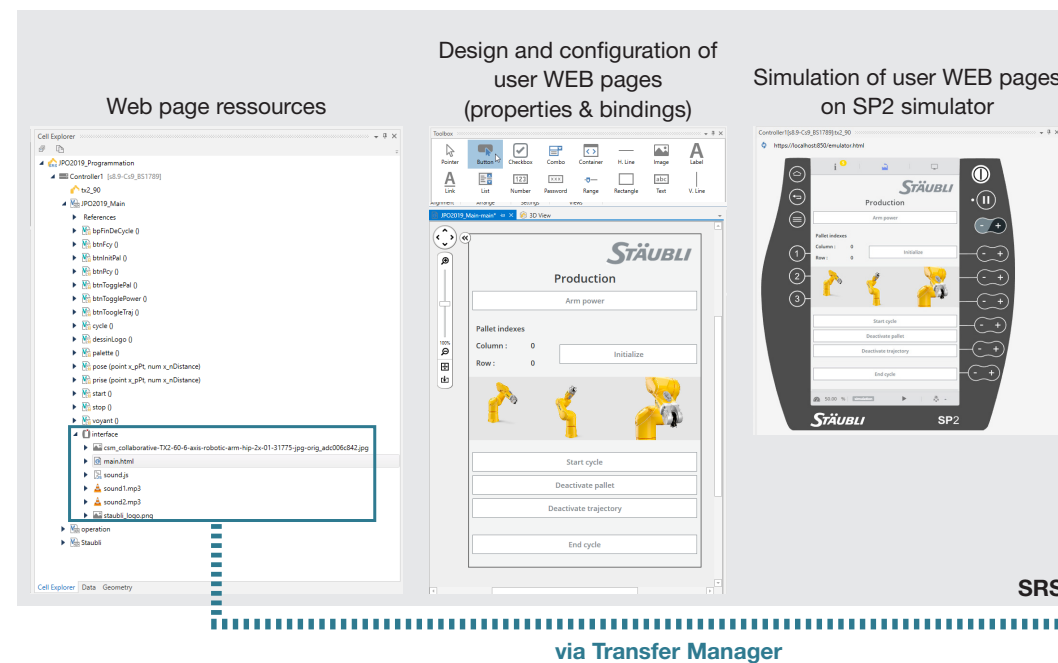
Management and transfer of "Safety configuration" with robot controller [NEW]



Data transfer management of any data between Stäubli Robotics Suite and the related robot controller (Stäubli Robotics Controls)

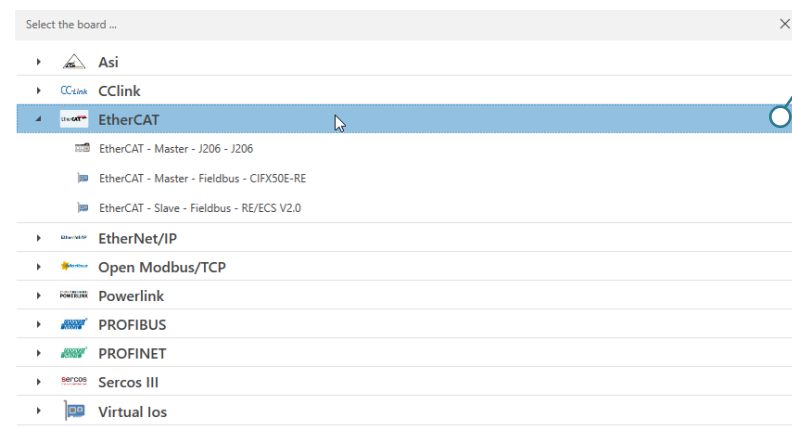


Data exchange even with USB stick



Graphical user interfaces on any WEB based device (including SP2) due to embedded CS9 WEB server technology

via Transfer Manager



One centralized software tool for configuration of all fieldbus I/Os

STAGE IV: PRODUCTION

# Keeping your production connected and efficient

Even after setting up your production process, Stäubli Robotics Suite stays by your side in order to secure your engineering investment. Stäubli Robotics Suite helps

you manage your valuable process and keeps control of your constantly generated data thanks to the following capabilities:

Smart log viewer: chronological, clustered (user or system), categorized (urgency) and integrated on-the-fly language switch

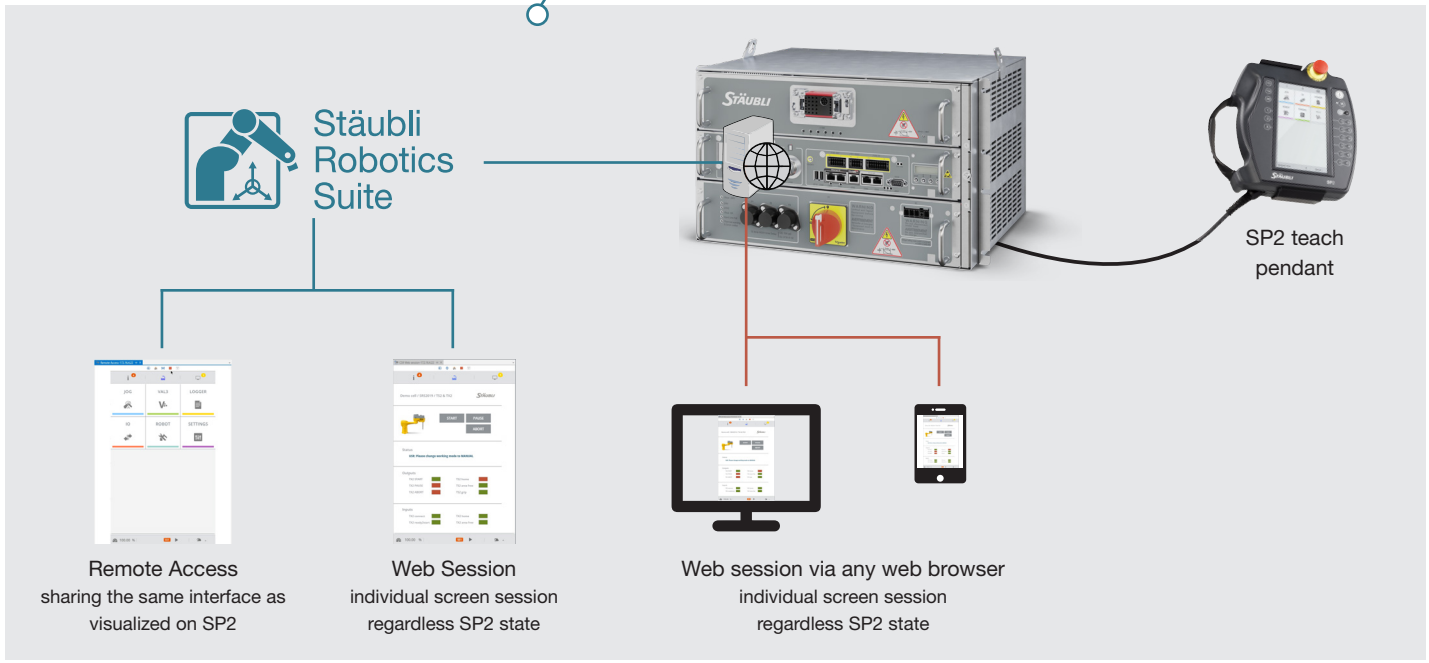
Level	Logger	Date	Time	Timestamp	Id	Text
Info	user	09.09.2021	16:49:35			From 09.09.2021 16:50, To 10.09.2021 13:30
Info	user	09.09.2021	16:41:11			From 09.09.2021 16:41, To 09.09.2021 16:47
Info	user	09.09.2021	12:00:22			From 09.09.2021 12:01, To 09.09.2021 16:32
Error	user	09.09.2021	16:32:47	16345,97603403	0x5404	ERR 125 No answer from input-output. Heartbeat.
Error	user	09.09.2021	16:32:47	16345,976015942	0x5404	VAL3 runtime error. No answer from input-output. Heartbeat.
Info	user	09.09.2021	16:32:46	16344,991744363	0x4A02	End of internal error INTERFACE-EventLost.
Error	user	09.09.2021	16:32:46	16344,977802941	0x5404	ERR 125 No answer from input-output. WMS.
Error	user	09.09.2021	16:32:46	16344,977792884	0x5404	VAL3 runtime error. No answer from input-output. WMS.
Error	user	09.09.2021	16:32:46	16344,977681977	0x5404	ERR 125 No answer from input-output. Motion.
Error	user	09.09.2021	16:32:46	16344,97767171	0x5404	VAL3 runtime error. No answer from input-output. Motion.
Info	user	09.09.2021	16:32:46	16344,977407566	0x5465	Waiting for PIR -> arm place next in Drawer free Lower Compartment
Error	user	09.09.2021	16:32:46			Transfer Manager - F_18_0005677_C_001 [s8.9c9_851789]
Info	user	09.09.2021	16:32:46			
Warn	user	09.09.2021	16:32:46			
Info	user	09.09.2021	16:32:46			
Info	user	09.09.2021	16:32:46			
Info	user	09.09.2021	16:32:46			
Info	user	09.09.2021	16:32:46			
Info	user	09.09.2021	16:32:46			

Embedded backup functionality securing your know-how

Recording visualization to ensure process sustainability

Simulated recording via emulator and record player in a 3D environment

Remote connection via embedded CS9 web server technology



Remote Access sharing the same interface as visualized on SP2

Web Session individual screen session regardless SP2 state

Web session via any web browser individual screen session regardless SP2 state



STAGE V: IMPROVEMENT

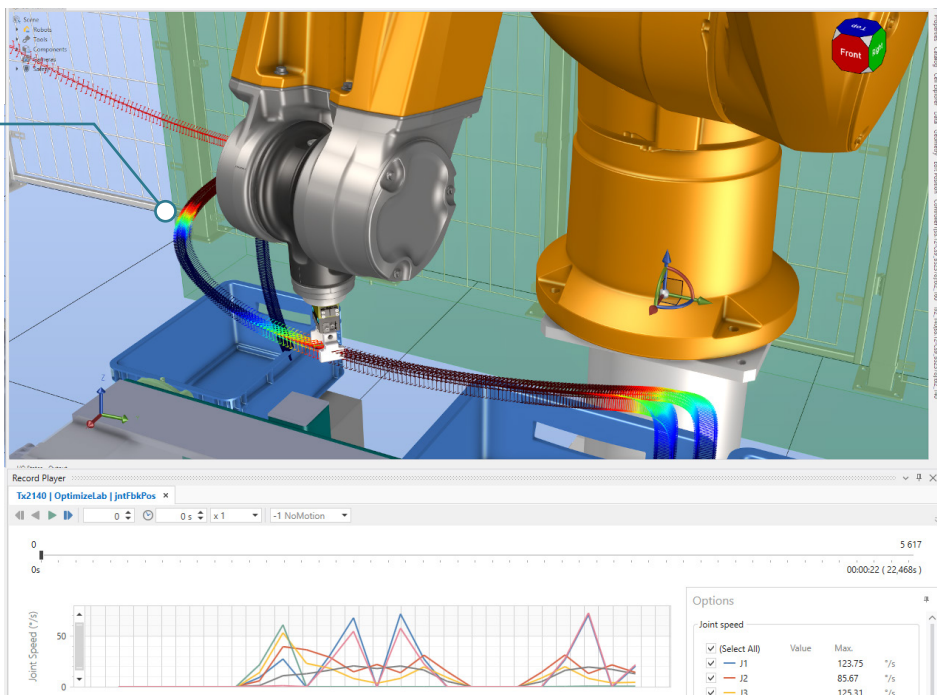
# OEE\* increase through smart robot optimization possibilities



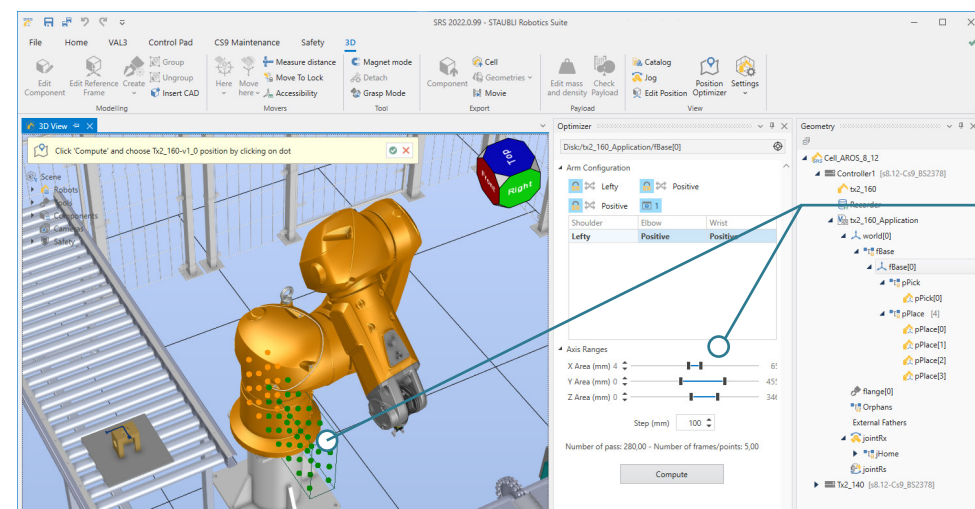
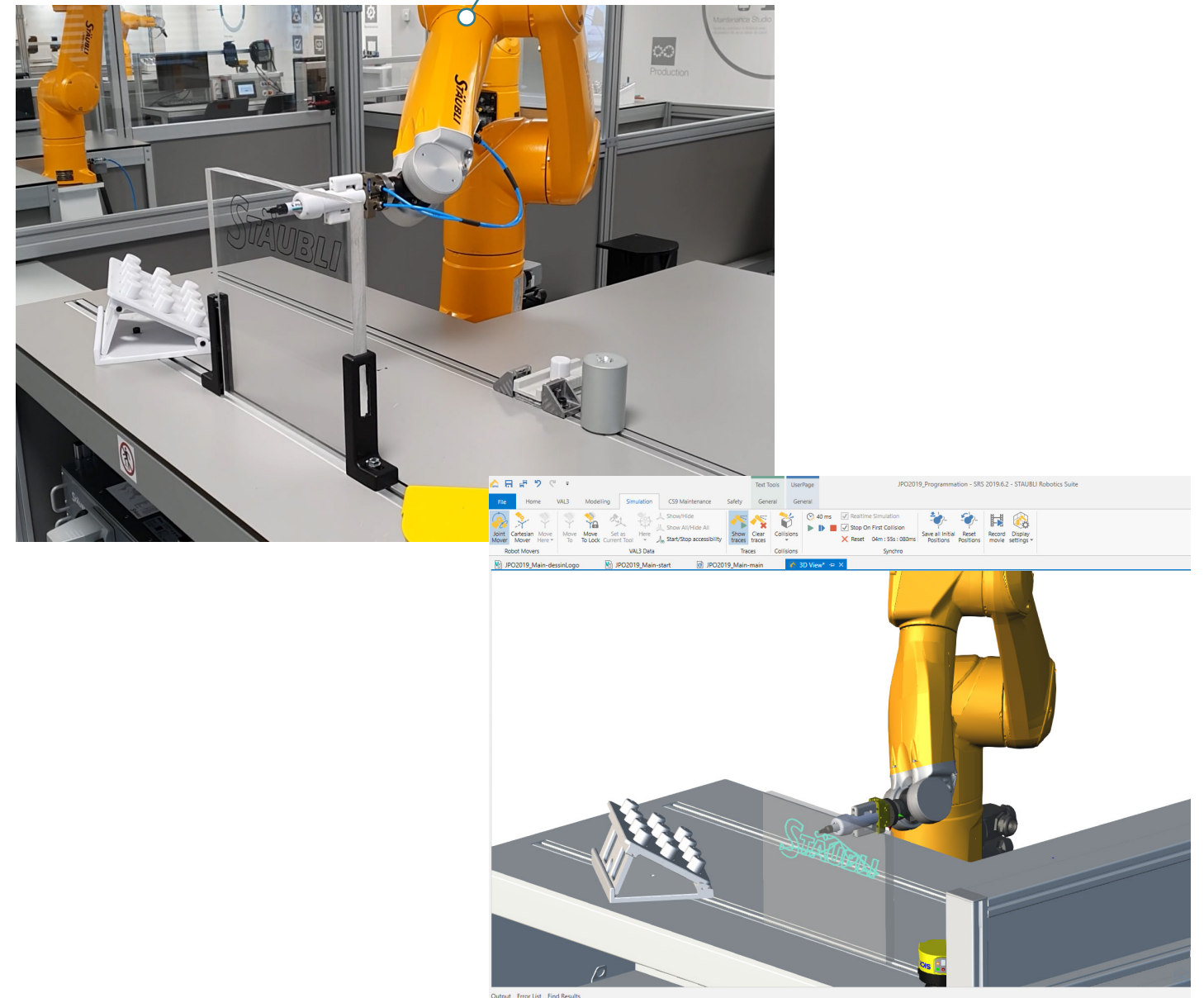
Stäubli Robotics Suite supports you with increasing your \*Overall Equipment Efficiency for existing production lines and further concepts or digital twins. Stäubli Robotics Suite enables you to improve your current and future robot processes by the optimization of:

- robot motion
  - cycle time
  - robot stress
  - robot lifetime
- through record player and colored load visualization.

Colorization of recording based on stress level of the robot (colors generated by Optimize Lab software solution)



3D remote connection to a real application environment for faster and more efficient troubleshooting on distant or difficult to access systems



Optimizing the robot position depending on locations to be reached [NEW]

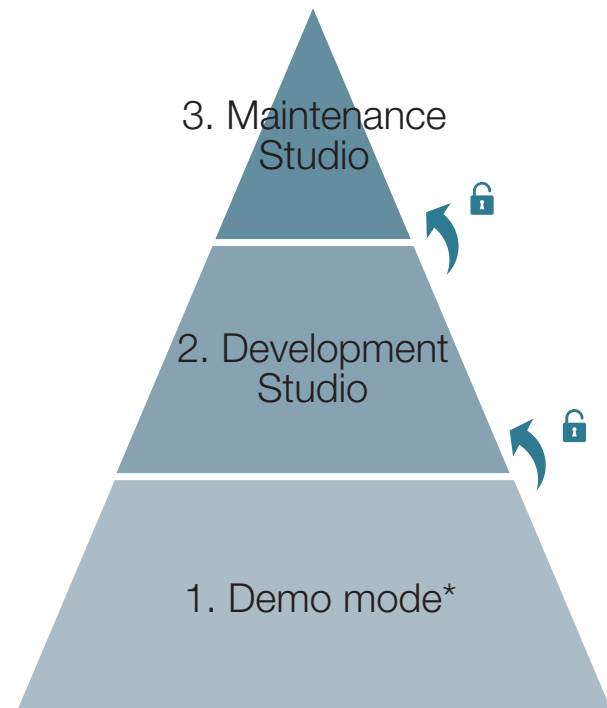
LICENSES

# Stäubli Robotics Suite adds value for any usage or engineering stage



Depending on your needs you can purchase additional licenses to get access to the variety of functions of Stäubli Robotics Suite.

The free trial allows you to examine all functions with only less limitations.



**Maintenance Studio license**

This license activates all the functionalities required to connect and maintain remotely a real robot cell (remote access to the manual control pendant, loading a 3D robot cell to visualize the real robots trajectories, etc.). You must have the Development Studio license to purchase the Maintenance Studio license.

**Development Studio license**

This license activates the necessary functionalities to perform realistic simulations (3D layout development, collision detection, parts handling, realistic cycle time estimation, application development, etc.).

**Demo mode\***

The Demo mode enables to use most functions of Stäubli Robotics Suite but not save the project or import 3D object.

All licenses are available as Local or Network USB dongles.

For further development and analysis, an additional Stäubli product is available: Optimize Lab for robot performance and load analysis

In addition to Stäubli Robotics Suite, please keep our Brake Distance Calculator (BDC) in mind to validate your robot stopping performance during the phase of risk assessment (phase 2).

Functions	Demo mode*	Development studio	Maintenance studio
Save Stäubli Robotics Suite project		✓	
3D-file import		✓	
Robot (options) library	✓	✓	
Reachability and accessibility check	✓	✓	
Payload and inertia evaluation		✓	
Improved jog interface (arm config. Switch and lock, ...)	✓	✓	
Creation of 3D objects	✓	✓	
Simulation of motion, cycle time and system behavior	✓	✓	
OPC UA on CS9 emulators (and CS8C, SRC ≥ 7.11)	✓	✓	
Safety configuration (3D visualization of safety zones,..)	✓	✓	
Visualization of safety configuration		✓	
Collision detection		✓	
Multi-robot support (interaction)	✓	✓	
Designer for customized graphical user page (CS9)	✓	✓	
Integrated VAL 3 development environment		✓	
Syntax check		✓	
Find Code Issues	✓	✓	
Configuration of all fieldbus I/Os	✓	✓	
Online debugging		✓	
Display variable values through mouse over	✓	✓	
Watch function also for single array elements, calculations and boolean expressions	✓	✓	
Smart log viewer			✓
Recording visualization		✓	
Embedded backup functionality			✓
Remote access			✓
Show colored visualization of Optimize Lab robot stress result		✓	
Record player in 3D environment		✓	





● Stäubli Units    ○ Representatives/Agents

# Global presence of the Stäubli Group

[www.staubli.com](http://www.staubli.com)