

ABB Robotics, January 2015

Simplified Robot Programming

A revolution in paint programming

Simplified Robot Programming (SRP)

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SRP

Project goals

Objective

- A simplified method for programming paint robots, targeted at plastic parts, wood and small metal parts
- A fully editable program along with path, tool angle and trigger positions

Deliverables

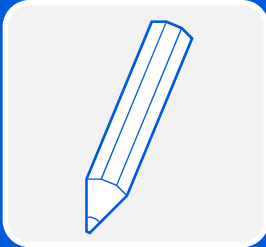
- ABB Teach Handle designed to be resemble a manual paint gun
- PC application software (in ABB RobView) process the motion data
- Adaptation to a specified motion tracking system

Differentiated value proposition

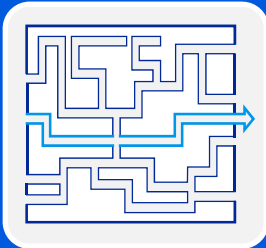
- A revolution in paint programming, ABB Simplified Robot Programming cuts programming time from hours to minutes

SRP

Customer values



SRP enables the user to teach a paint robot program without knowing the robot programming language



SRP enables simplicity in learning a robot what to do and where to enable paint



SRP enables all programs to be fully editable using ABB RobView 5 or RobotStudio®

SRP

Customer groups and applications



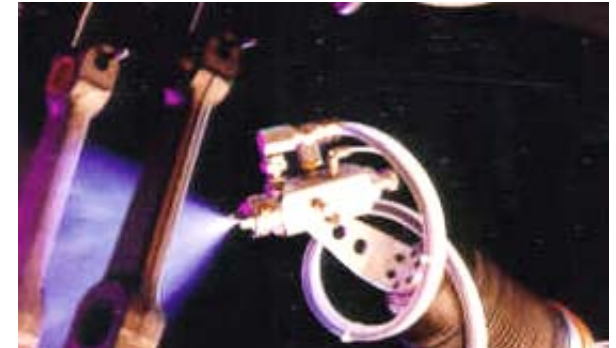
Painting flat panels

- Fast and efficient programming of panels
- Time efficient solution for small or large series of parts



Painting 3D parts

- Tracing 3D part with the SRP tool provides easy way to access difficult angles
- Teaching outside the paint zone makes it possible to teach a new parts without stopping production



Small metal parts

- Manufacturers of metal parts need to get the parts coated.
- SRP a solution that makes small batch programming efficient and simple

SRP

Controller, version and backwards compatibility



Controller platform

- IRC5P, but also IRC5 or IRC5C

Backwards compatible

- SRP generates generic ABB robot programs from the RobView 5 SRP application with PaintL or MoveL instructions
- If used in combination with ABB IRC5 or IRC5C robot controllers, the MoveL instruction need to be selected.
- The trigger input need to be addressed separately

SRP

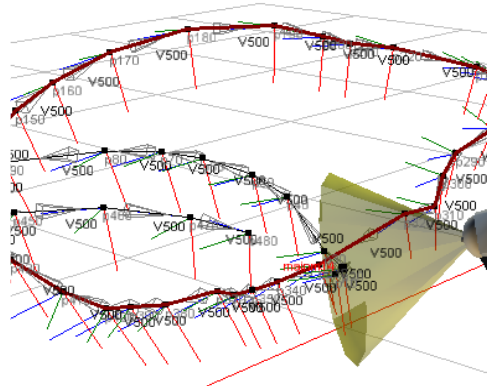
Where to teach a paint program

Teaching in prep zone



SRP enables users to create the robot program in a none production environment (outside the robot zone)

Checking robot program



Remote teaching – with SRP a designer of a part can teach and secure the robot painting program

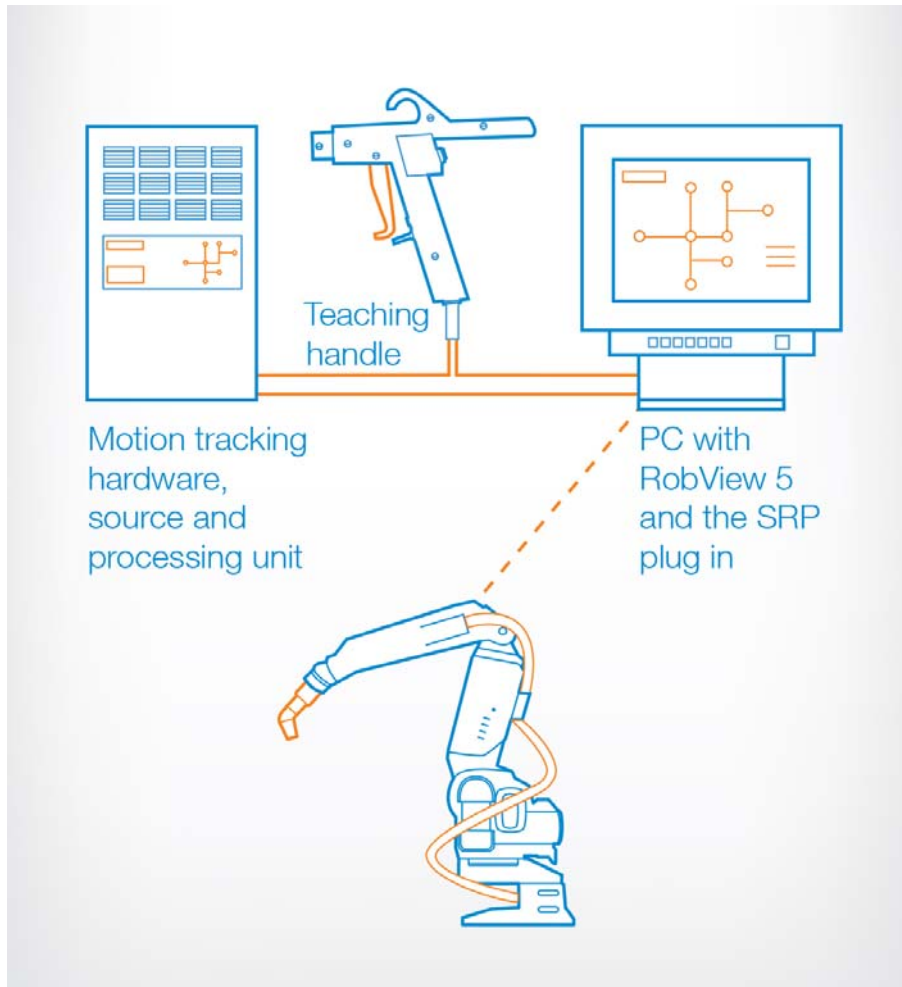
Send program to the robot



Paint production does not need to be stopped to teach a new part.
Program can be checked; reachability, accessibility, cycle time, paint coverage and more

SRP

Main components with setup example



SRP consist of:

- Motion tracking hardware, source and processing unit
- Teaching handle – connected to the motion tracking unit and to the PC application
- PC with ABB RobView 5 and the SRP plug-in

SRP

Features and benefits



ABB Teach Handle

- Motion tracking – full 6 degrees of freedom with absolute accuracy with no drifting (no error in tracking output over time). No shadowing effect from a human, plastic or wooden part. Large metal part and power cables could have an impact on the sensor signal
- Trigger on/off with line guiding – designed to feel like a conventional air spray gun and trigger. Adding function buttons for starting recording function

PC application

- ABB RobView 5 gets the position data from the motion tracking sensors and trigger + function commands from the teach handle

SRP

Accuracy of motion tracking – graph view

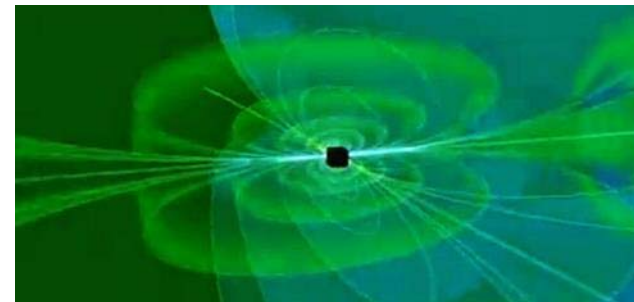
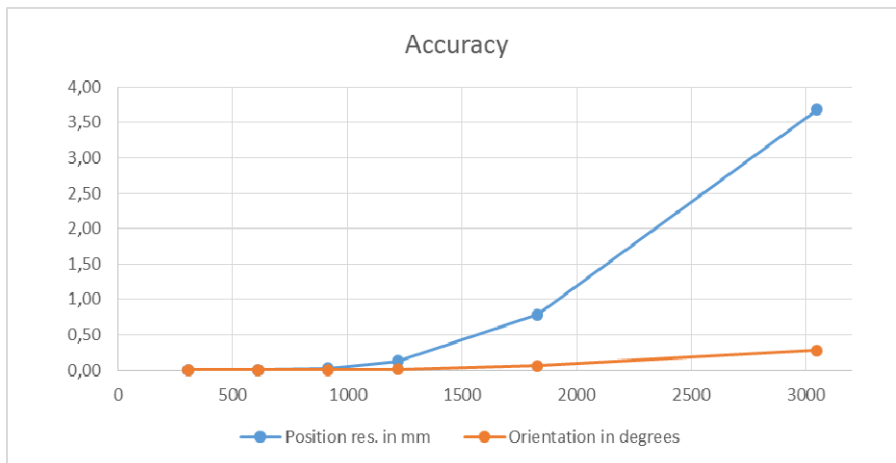
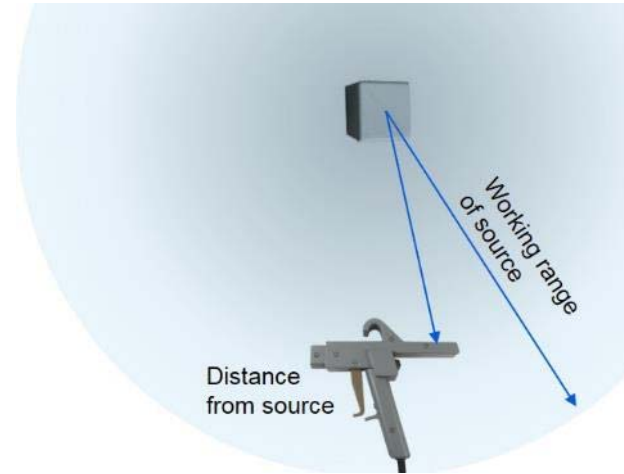
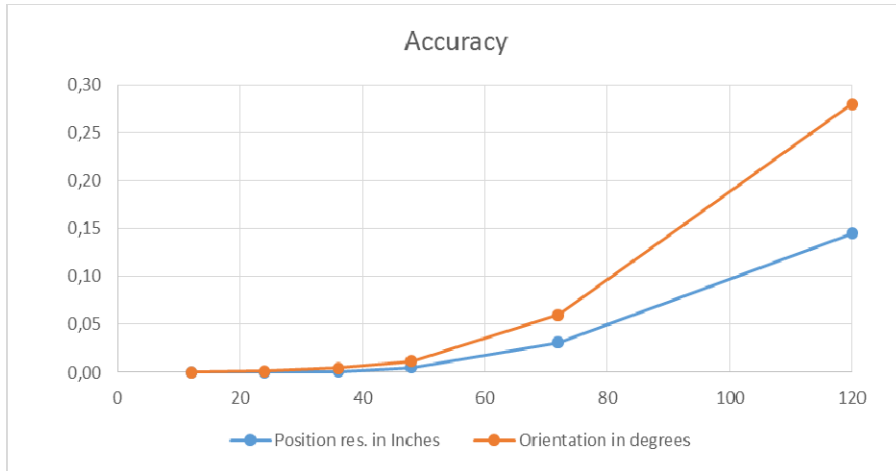


Illustration of magnetic field

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