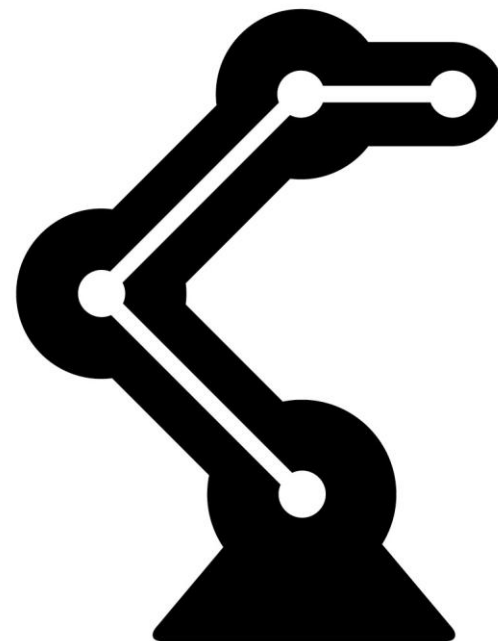


SRCI – Technology Slide Set

31.07.2025

Standard Robot Command Interface



SRCI



By default, every robot manufacturer has its own programming language.



Challenges

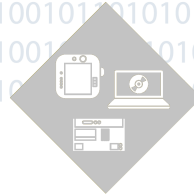
- Handling of robot manufacturer-specific SW and HW
- Robot manufacturer-specific programming know-how required
- Program must be newly created for every robot manufacturer
- Manufacturer-specific interface definition between robot and machine
- High complexity for service and maintenance



Manufacturer A



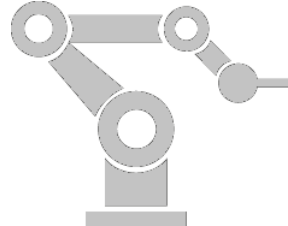
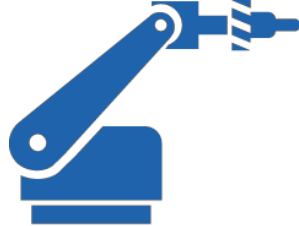
Manufacturer B



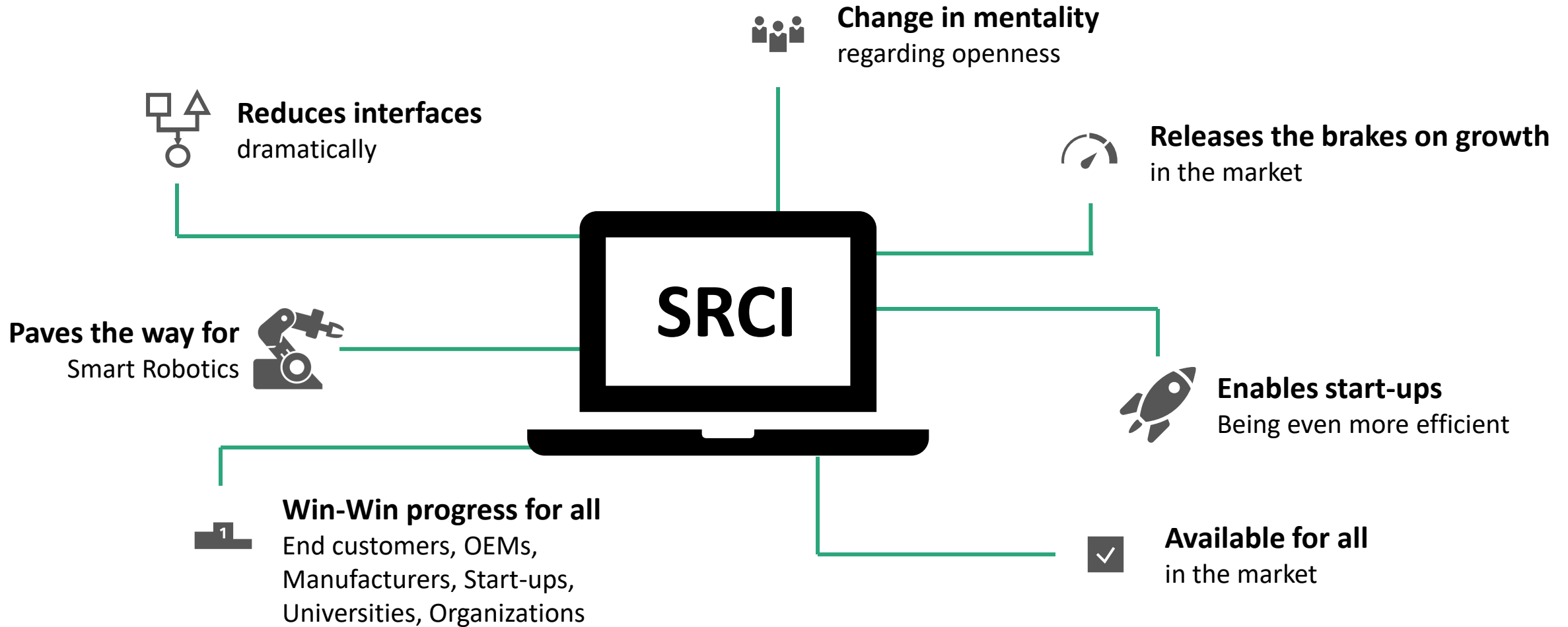
Manufacturer C



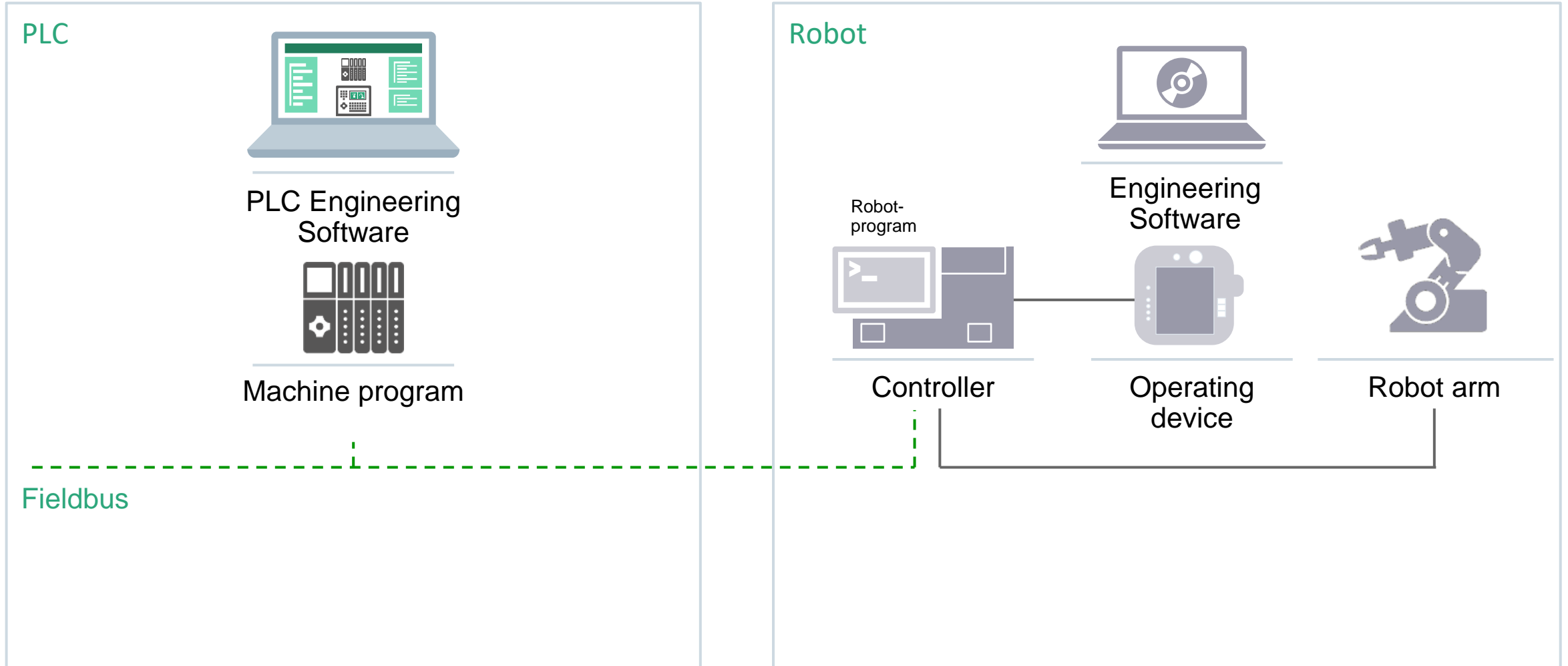
Manufacturer ...



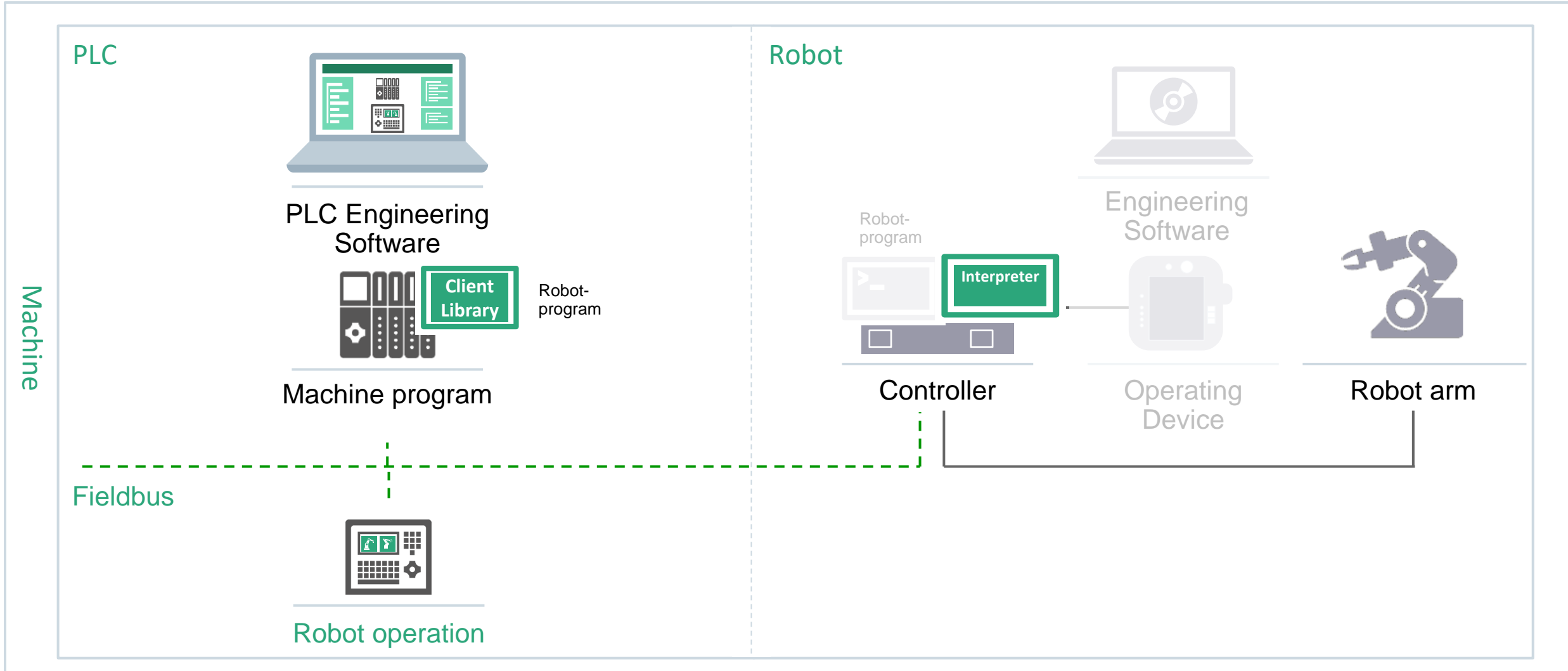
SRCI is an evolution in the robot market!



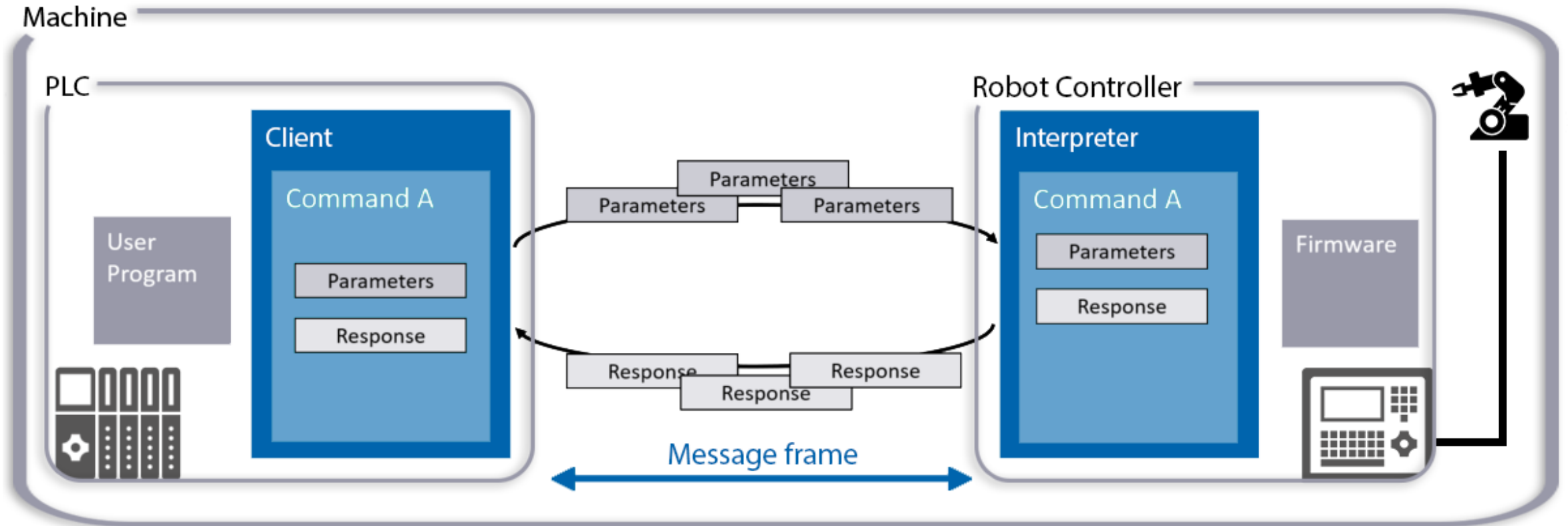
PLC & Robots – Two separated worlds



SRCI – Robot programming in PLC



What is the Standard Robot Command Interface?



Standard Robot Command Interface

Functionalities and profiles

Mandatory functions (73 functions)

Optional functions (53 functions)

Profile Extended

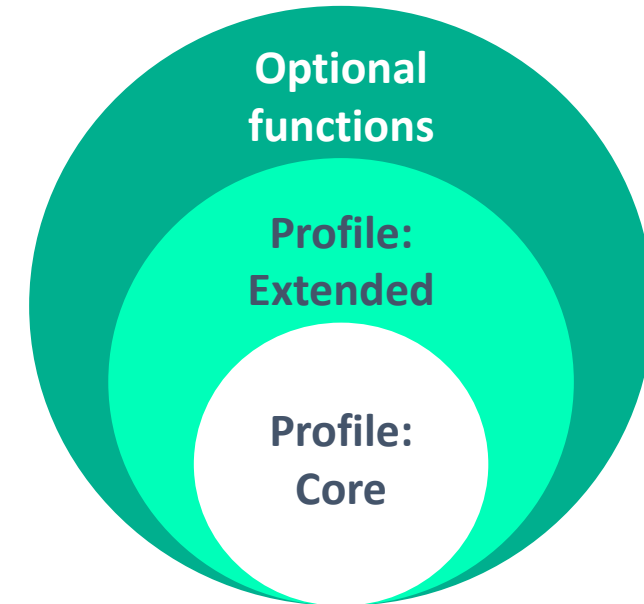
- MC_LinearOffset
- MC_CircularLinearAbsolute
- MC_WaitTime
- ...

Profile Core (35 functions)

- MC_EnableRobot
- MC_MoveLinearAbsolute
- MC_GroupStop
- ...

Additional features

- MC_ApproachLinear
- MC_SearchHardStop
- MC_ConfigureConveyor
- ...



General

- MC_RobotTask_LRob
- MC_EnableRobot_LRob
- MC_SetSequence_LRob
- MC_GroupReset_LRob
- MC_RestartController_LRob
- MC_UserLogin_LRob
- MC_SwitchLanguage_LRob
- MC_SetOperationMode_LRob
- MC_CreateServerLog_LRob
- MC_ReadServerLog_LRob
- **MC_CreateClientLog_LRob**
- **MC_ReadClientLog_LRob**

Basic move

- MC_ChangeSpeedOverride_LRob
- MC_GroupContinue_LRob
- MC_GroupInterrupt_LRob
- MC_GroupStop_LRob
- MC_GroupJog_LRob
- MC_MoveAxesAbsolute_LRob
- MC_MoveDirectAbsolute_LRob
- MC_MoveLinearAbsolute_LRob
- MC_ReturnToPrimary_LRob

Conveyor Tracking

- MC_ActivateConveyorTracking_LRob
- MC_RedefineTrackingPosition_LRob
- MC_SyncToConveyor_LRob
- MC_ConfigureConveyor_LRob

Read

- MC_ReadRobotPositionCyclic_LRob
- MC_ReadActualPosition_LRob
- MC_ReadFrameData_LRob
- MC_ReadLoadData_LRob
- MC_ReadRobotSWLimits_LRob
- MC_ReadToolData_LRob
- MC_ReadRobotDefaultDynamics_LRob
- MC_ReadRobotReferenceDynamics_LRob
- MC_ReadActualVelocity_LRob
- MC_ReadDHPParameter_LRob
- MC_ReadAnalogInput_LRob
- MC_ReadAnalogOutput_LRob
- MC_ReadDigitalInputs_LRob
- MC_ReadDigitalOutputs_LRob
- MC_ReadSystemVariable_LRob
- MC_ReadIntegers_LRob
- MC_ReadReals_LRob

Calculation

- MC_CalculateForwardKinematic_LRob
- MC_CalculateInverseKinematic_LRob
- MC_CalculateCartesianPosition_LRob
- MC_CalculateTool_LRob
- MC_CalculateFrame_LRob
- MC_LoadMeasurementAutomatic_LRob
- MC_LoadMeasurementSequential_LRob

Write

- MC_WriteAnalogOutput_LRob
- MC_WriteRobotSWLimits_LRob
- MC_WriteFrameData_LRob
- MC_WriteLoadData_LRob
- MC_WriteRobotDefaultDynamics_LRob
- MC_WriteRobotReferenceDynamics_LRob
- MC_WriteToolData_LRob
- MC_WriteDigitalOutputs_LRob
- MC_WriteIntegers_LRob
- MC_WriteReals_LRob
- MC_WriteSystemVariable_LRob

Advanced Move

- MC_MoveCircularAbsolute_LRob
- MC_MoveCircularRelative_LRob
- MC_MoveAxesRelative_LRob
- MC_MoveDirectRelative_LRob
- MC_MoveLinearRelative_LRob
- MC_MoveLinearAbsoluteJ_LRob
- MC_MoveLinearOffset_LRob
- MC_MoveDirectOffset_LRob
- MC_MoveApproachLinear_LRob
- MC_MoveDepartLinear_LRob
- MC_MoveApproachDirect_LRob
- MC_MoveDepartDirect_LRob
- MC_MovePickPlaceLinear_LRob
- MC_MovePickPlaceDirect_LRob

Trigger

- MC_WaitTime_LRob
- MC_MoveLinearCam_LRob
- MC_MoveCircularCam_LRob
- MC_MoveDirectCam_LRob
- MC_SetTriggerRegister_LRob
- MC_SetTriggerLimit_LRob
- MC_SetTriggerUser_LRob
- MC_SetTriggerError_LRob
- MC_ReactAtTrigger_LRob
- MC_WaitForTrigger_LRob
- MC_SetTriggerMotion_LRob

Super imposing

- MC_MoveSuperImposed_LRob
- MC_MoveSuperImposedDynamic_LRob

ForceControl

- MC_ForceControl_LRob
- MC_ForceLimit_LRob
- MC_ReadActualForce_LRob

Work areas

- MC_ReadWorkArea_LRob
- MC_WriteWorkArea_LRob
- MC_ActivateWorkArea_LRob
- MC_MonitorWorkArea_LRob

Additional

- MC_ActivateNextCommand_LRob
- MC_ShiftPosition_LRob
- MC_CallSubprogram_LRob
- MC_StopSubprogram_LRob
- MC_ReadSubprogramCyclic_LRob
- MC_WriteSubprogramCyclic_LRob
- MC_MeasuringInput_LRob
- MC_AbortMeasuringInput_LRob
- MC_OpenBreak_LRob
- MC_BrakeTest_LRob
- MC_PathAccuracyMode_LRob
- MC_AvoidSingularity_LRob
- MC_CollisionDetection_LRob
- MC_FreeDrive_LRob
- MC_SoftSwitchTCP_LRob
- MC_UnitMeasurement_LRob
- **MC_SafeReferencing_LRob**
- **MC_ReadSafeReferencePosition_LRob**

Spline

- MC_CreateSpline_LRob
- MC_DeleteSpline_LRob
- MC_MoveSpline_LRob
- MC_DynamicSpline_LRob

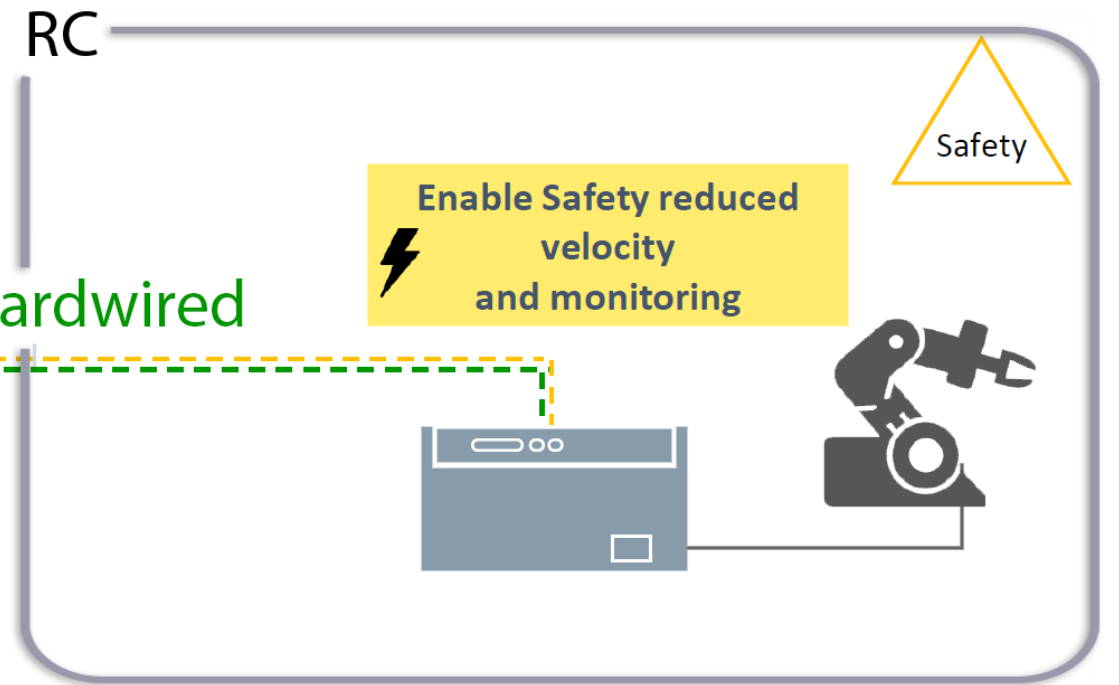
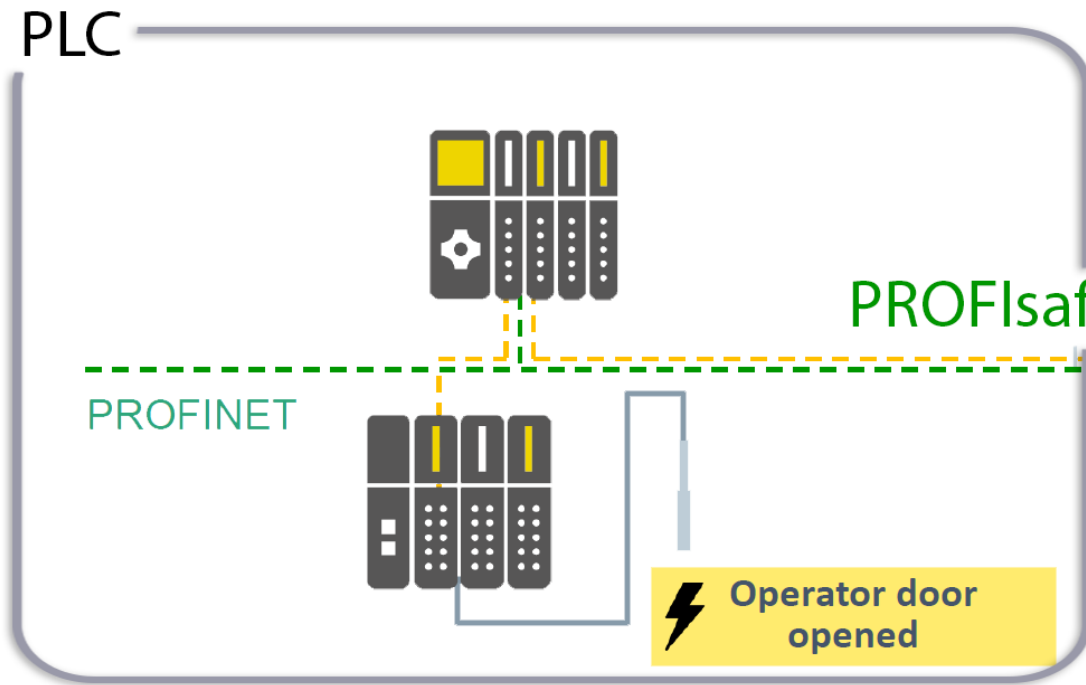
Search Hardstop

- MC_SearchHardstop_LRob
- MC_SearchHardstopJ_LRob

SRCI and safety in principle

Where triggered? **PLC**

Where executed? **RC**



Availability of safety features depend on robot manufacturer and must be configured in manufacturer specific tool

SRCI Vendor Map

SRCI implementation status of manufacturers

Broad Release			Limited Release			In progress		
<p>Please contact the manufacturer directly regarding their planned release date.</p>								

This webpage provides up-to-date information on released SRCI implementations. You can inspect the available functions of a specific manufacturer, search for a manufacturer that supports a particular function, or compare manufacturers to see which functions are available in a specific setup of SRCI client and interpreter.

The website is continuously updated with new SRCI implementations when they are officially released, as well as important news related to SRCI.

I am looking for

Function Set of Specific Manufacturer

Manufacturer supporting a Specific Function

Comparison between Manufacturers

Manufacturer * × ▾
 Implementation × ▾
 Kinematik Type × ▾
 Controller × ▾
 Controller Version × ▾

Known Critical Bugs and Limitations for this selection ▾

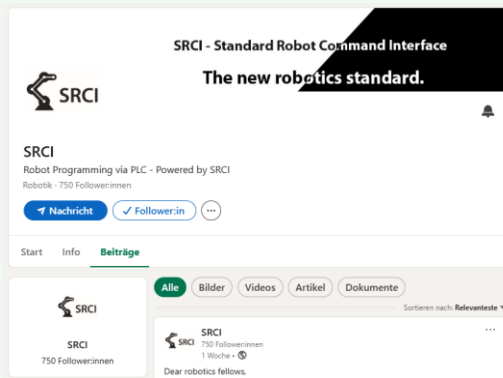
[List of all known critical bugs](#)

Expand all Rows [Download Pdf](#) [Reset](#)

No	Function	Type?	Function Group	Mandatory / Optional	Name	Detail Sub Property	Supported	Critical Bug or Limitation
1	RobotTask	Function	Profile: Core	M	RobotTask		<input checked="" type="checkbox"/>	
24	ReadRobotDa...	Function	Profile: Core	M	ReadRobotData		<input checked="" type="checkbox"/>	
44	EnableRobot	Function	Profile: Core	M	EnableRobot		<input checked="" type="checkbox"/>	
62	GroupReset	Function	Profile: Core	M	GroupReset		<input checked="" type="checkbox"/>	

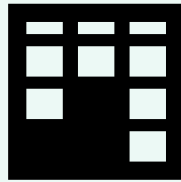


LinkedIn

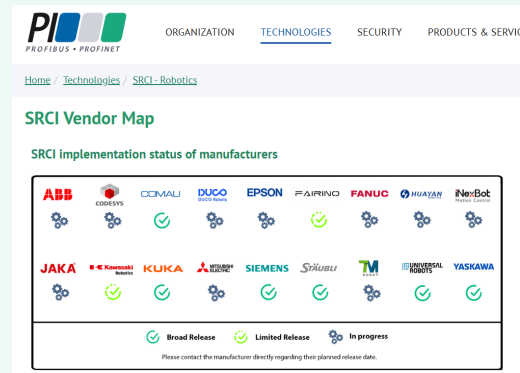


News and updates

linkedin.com/showcase/srci-robotics



Vendor Map

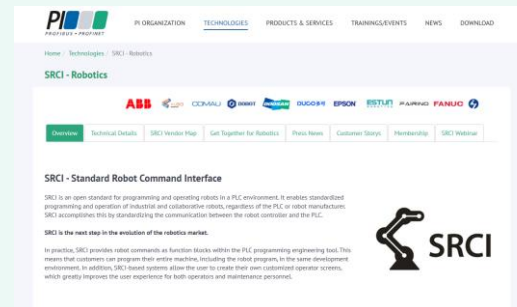


Latest implementation status

www.profibus.com/srci-vendor-map

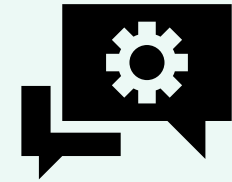


Website

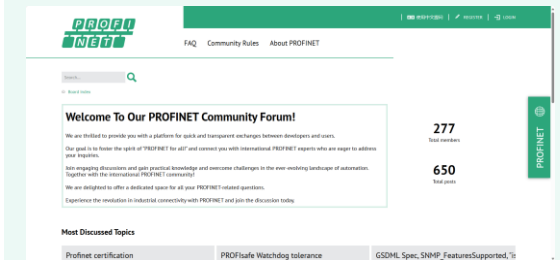


Everything about SRCI

www.profibus.com/srci



Forum



Discuss about SRCI

www.profinet.com/forum